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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

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HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 6767

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING JUNE 30, 1966, AND FOR OTHER PURPOSES

PART 1

(PAGES 1 THROUGH 1007)

(MONDAY, FEBRUARY 15, 1965, THROUGH FRIDAY, FEBRUARY 26, 1965)

Printed for the use of the Committee on Appropriations

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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

MONDAY, FEBRUARY 15, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to call, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Chairman Hayden, Senators Byrd, McGee, Mundt, and Young.

DEPARTMENT OF THE INTERIOR

STATEMENTS OF HON. STEWART L. UDALL, SECRETARY OF THE INTERIOR; D. OTIS BEASLEY, ASSISTANT SECRETARY FOR ADMINISTRATION; AND SIDNEY D. LARSON, DIRECTOR OF THE BUDGET

1966 BUDGET ESTIMATES

Chairman HAYDEN. The subcommittee will come to order.

Today we commence hearings on the 1966 budget estimates for the Department of the Interior and related agencies. Included in this bill will be funds for all the bureaus and agencies of the Department except the Bureau of Reclamation and the power marketing agencies. Estimates for these latter offices will be contained in the public works appropriations bill which the committee will consider at a future date.

Also included in the Department of the Interior bill are estimates for the Forest Service, the Federal Coal Mine Safety Board of Review, the Commission of Fine Arts, the Division of Indian Health in the Department of Health, Education, and Welfare, the Indian Claims Commission, the National Capital Planning Commission, the National Capital Transportation Agency, the National Council on the Arts, the Public Land Law Review Commission, the Smithsonian Institution, the National Gallery of Art, the Civil War Centennial Commission, the Lewis and Clark Trail Commission, transitional grants to Alaska, the Federal Development Planning Committees for Alaska, the Corregidor-Bataan Memorial Commission, and the Virgin Islands Corporation.

APPROPRIATION FOR FISCAL YEAR 1965

For fiscal year 1965, $1,076,928,270 were appropriated for these agencies. This includes $14 million in borrowing authority and $16,859,000 in indefinite appropriations of receipts. The various bureaus and agencies have supplemental appropriation requests for fiscal year 1965 to be considered at a later date.

The fiscal year 1966 estimates amount to $1,270,129,500, an increase of $41,504,230 over fiscal year 1965. This sum includes $16,780,000 in borrowing authority, $138,224,000 in indefinite appropriations of receipts, and $12,500,000 in annual contract authority.

1966 ESTIMATES AND 1965 APPROPRIATIONS COMPARED

There will be included in the record a comparative statement of the appropriations for fiscal year 1965, including proposed pay act supplemental appropriations, and the budget estimates for the coming fiscal year. Also, I shall place in the record a table which compares the appropriations and receipts for the Department of the Interior for fiscal year 1965 and the fiscal year 1966, as estimated.

(The tables referred to follow:)

COMPARATIVE STATEMENT OF THE APPROPRIATIONS FOR FISCAL YEAR 1965, AND THE ESTIMATES FOR FISCAL YEAR 1966

Item	Fiscal year 1965		Budget estimates, 1966	Budget estimates, 1966, compared with—	
	Appropriations, 1965	Total (including anticipated pay supplemental, 1965)		Appropriations, 1965	Total (including anticipated pay supplemental, 1965)
TITLE I—DEPARTMENT OF THE INTERIOR					
PUBLIC LAND MANAGEMENT					
BUREAU OF LAND MANAGEMENT					
Management of lands and resources	[1] $46,372,000	$47,122,000	$47,630,000	+$1,258,000	+$508,000
Construction	1,100,000	1,100,000	1,600,000	+500,000	+500,000
Public lands development roads and trails (liquidation of contract authorization)	2,000,000	2,000,000	2,000,000		
Oregon and California grant lands (*indefinite appropriation of receipts*)	(10,125,000)	(10,125,000)	(8,545,000)	(−1,580,000)	(−1,580,000)
Range improvements (*indefinite appropriation of receipts*)	(1,397,000)	(1,397,000)	(1,455,000)	(+58,000)	(+58,000)
Total, Bureau of Land Management	49,472,000	50,222,000	51,230,000	+1,758,000	+1,008,000
BUREAU OF INDIAN AFFAIRS					
Education and welfare services	95,868,500	97,365,500	106,895,000	+11,026,500	+9,529,500
Resources management	40,390,000	41,114,000	42,956,000	+2,566,000	+1,842,000
Revolving fund for loans	900,000	900,000		−900,000	−900,000
Construction	52,009,000	52,009,000	68,975,000	+16,966,000	+16,966,000
Road construction (liquidation of contract authorization)	17,000,000	17,000,000	16,900,000	−100,000	−100,000
General administrative expenses	4,331,000	4,520,000	4,520,000	+189,000	
Menominee educational grants	88,000	88,000	44,000	−44,000	−44,000
Payment to the Seneca Nation	[2] 12,128,917	12,128,917		−12,128,917	−12,128,917
Total, Bureau of Indian Affairs, exclusive of tribal funds	222,715,417	225,125,417	240,290,000	+17,574,583	+15,164,583
Tribal funds (not included in totals of this tabulation)	(3,000,000)	(3,000,000)	(3,000,000)		
NATIONAL PARK SERVICE					
Management and protection	[3] 29,230,000	29,862,000	33,215,000	+3,985,000	+3,353,000
Maintenance and rehabilitation of physical facilities	23,100,000	23,100,000	24,660,000	+1,560,000	+1,560,000
Construction	[4] 42,406,600	42,406,600	26,327,000	−16,079,600	−16,079,600
Construction (liquidation of contract authorization)	29,000,000	29,000,000	34,000,000	+5,000,000	+5,000,000
General administrative expenses	2,325,000	2,422,000	2,516,000	+191,000	+94,000
Total, National Park Service	126,061,600	126,790,600	120,718,000	−5,343,600	−6,072,600

See footnotes at end of table, p. 9.

COMPARATIVE STATEMENT OF THE APPROPRIATIONS FOR FISCAL YEAR 1965, AND THE ESTIMATES FOR FISCAL YEAR 1966—Continued

Item	Fiscal year 1965		Budget estimates, 1966	Budget estimates, 1966, compared with—	
	Appropriations, 1965	Total (including anticipated pay supplemental, 1965)		Appropriations, 1965	Total (including anticipated pay supplemental, 1965)
TITLE I—DEPARTMENT OF THE INTERIOR—Continued					
PUBLIC LAND MANAGEMENT—continued					
BUREAU OF OUTDOOR RECREATION					
Salaries and expenses	$2,700,000	$2,780,000	$3,398,000	+$698,000	+$618,000
Land and water conservation (indefinite appropriation of receipts)			*(125,000,000)*	*(+125,000,000)*	*(+125,000,000)*
Total, Bureau of Outdoor Recreation	2,700,000	2,780,000	3,398,000	+698,000	+618,000
OFFICE OF TERRITORIES					
Administration of territories	[5] 25,300,000	25,345,000	14,579,000	−10,721,000	−10,766,000
Trust Territories of the Pacific Islands	17,500,000	17,500,000	17,344,000	−156,000	−156,000
Limitation on administrative expenses, Virgin Islands Corporation	*(156,000)*	*(156,000)*	*(100,000)*	*(−56,000)*	*(−56,000)*
Total, Office of Territories	42,800,000	42,845,000	31,923,000	−10,877,000	−10,922,000
THE ALASKA RAILROAD					
Payment to the Alaska Railroad revolving fund			3,000,000	+3,000,000	+3,000,000
Total, public land management	443,749,017	447,763,017	450,559,000	+6,809,983	+2,795,983
MINERAL RESOURCES					
GEOLOGICAL SURVEY					
Surveys, investigations, and research	[6] 67,255,000	69,334,000	[7] 72,826,000	+5,571,000	+3,492,000
BUREAU OF MINES					
Conservation and development of mineral resources	30,100,000	30,898,000	31,625,000	+1,525,000	+727,000
Health and safety	9,300,000	9,537,000	9,507,000	+207,000	−30,000
General administrative expenses	1,410,000	1,469,000	1,529,000	+119,000	+60,000
Helium fund: Borrowing authorization	*(14,000,000)*	*(14,000,000)*	*(16,780,000)*	*(+2,780,000)*	*(+2,780,000)*
Annual limitation on contract authorization			(12,500,000)	(+12,500,000)	(+12,500,000)
Total, Bureau of Mines	40,810,000	41,904,000	42,661,000	+1,851,000	+757,000

OFFICE OF COAL RESEARCH					
Salaries and expenses	6,836,000	6,836,000	6,945,000	+109,000[6]	+109,000
OFFICE OF MINERALS EXPLORATION					
Salaries and expenses	850,000	850,000	[7]	−850,000	−850,000
OFFICE OF OIL AND GAS					
Salaries and expenses	660,000	704,000	704,000	+44,000	
Total, mineral resources	116,411,000	119,628,000	123,136,000	+6,725,000	+3,508,000
FISH AND WILDLIFE SERVICE					
OFFICE OF THE COMMISSIONER OF FISH AND WILDLIFE					
Salaries and expenses	425,000	444,000	444,000	+19,000	
BUREAU OF COMMERCIAL FISHERIES					
Management and investigations of resources	18,819,900	19,107,900	21,218,000	+2,398,100	+2,110,100
Management and investigations of resources (*appropriation of receipts*)	(2,125,000)	(2,125,000)		(−2,125,000)	(−2,125,000)
Management and investigations of resources (special foreign currency program)	300,000	300,000	300,000		
Construction	4,788,000	4,788,000	1,405,000	−3,383,000	−3,383,000
Construction of fishing vessels	[2] 2,500,000	2,500,000	5,000,000	+2,500,000	+2,500,000
Federal aid for commercial fisheries research and development			2,000,000	+2,000,000	+2,000,000
General administrative expenses	667,000	704,000	674,000	+7,000	−30,000
Administration of Pribilof Islands (*indefinite appropriation of receipts*)	(2,442,000)	(2,454,000)	(2,454,000)	(+12,000)	(----------)
Limitation on administrative expenses, Fisheries loan fund	[8] (302,000)	(309,000)	(309,000)	(+7,000)	(----------)
Total, Bureau of Commercial Fisheries	27,074,900	27,399,900	30,597,000	+3,522,100	+3,197,100
BUREAU OF SPORT FISHERIES AND WILDLIFE					
Management and investigations of resources	[9] 34,860,000	35,154,000	34,935,000	+75,000	−219,000
Construction	[10] 8,057,800	8,057,800	2,992,000	−5,065,800	−5,065,800
Migratory bird conservation account	8,000,000	8,000,000	7,500,000	−500,000	−500,000
General administrative expenses	1,384,000	1,443,000	1,458,000	+74,000	+15,000
Total, Bureau of Sport Fisheries and Wildlife	52,301,800	52,654,800	46,885,000	−5,416,800	−5,769,800
Total, Fish and Wildlife Service	79,801,700	80,498,700	77,926,000	−1,875,700	−2,572,700
OFFICE OF SALINE WATER					
Salaries and expenses	10,000,000	10,000,000	26,515,000	+16,515,000	+16,515,000
Operation and maintenance	2,250,000	2,250,000	2,485,000	+235,000	+235,000
Total, Office of Saline Water	12,250,000	12,250,000	29,000,000	+16,750,000	+16,750,000
OFFICE OF WATER RESOURCES RESEARCH					
Salaries and expenses	[2] 1,465,000	1,465,000	5,890,000	+4,425,000	+4,425,000

See footnotes at end of table, p. 9.

COMPARATIVE STATEMENT OF THE APPROPRIATIONS FOR FISCAL YEAR 1965, AND THE ESTIMATES FOR FISCAL YEAR 1966—Continued

Item	Fiscal year 1965		Budget estimates, 1966	Budget estimates, 1966, compared with—	
	Appropriations, 1965	Total (including anticipated pay supplemental, 1965)		Appropriations, 1965	Total (including anticipated pay supplemental, 1965)
TITLE I—DEPARTMENT OF THE INTERIOR—Continued					
OFFICE OF THE SOLICITOR					
Salaries and expenses	$4,223,000	$4,393,000	$4,479,000	+$256,000	+$86,000
OFFICE OF THE SECRETARY					
Salaries and expenses	4,110,500	4,364,500	4,479,000	+368,500	+114,500
Total, direct appropriations	662,010,217	670,362,217	695,469,000	+33,458,783	+25,106,783
Total, appropriations of receipts	16,089,000	16,101,000	137,454,000	+121,365,000	+121,353,000
Total, borrowing authorization	14,000,000	14,000,000	16,780,000	+2,780,000	+2,780,000
Total, annual contract authority			12,500,000	+12,500,000	+12,500,000
Total, title I, Department of the Interior	692,099,217	700,463,217	862,203,000	+170,103,783	+161,739,783
TITLE II—RELATED AGENCIES					
DEPARTMENT OF AGRICULTURE					
FOREST SERVICE					
Forest protection and utilization:					
Forest land management	[11] 150,744,000	153,906,000	162,378,000	+11,634,000	+8,472,000
Forest research	[12] 33,585,000	34,289,000	32,554,000	−1,031,000	−1,735,000
State and private forestry cooperation	16,955,000	17,013,000	17,513,000	+558,000	+500,000
Total, forest protection and utilization	201,284,000	205,208,000	212,445,000	+11,161,000	+7,237,000
Forest roads and trails (liquidation of contract authorization)	70,300,000	71,472,000	78,672,000	+8,372,000	+7,200,000
Acquisition of lands for national forests:					
Wasatch National Forest	150,000	150,000		−150,000	−150,000
Special acts (*appropriation of receipts*)	(70,000)	(70,000)	(70,000)		
Cooperative range improvements (*appropriation of receipts*)	(700,000)	(700,000)	(700,000)		
Assistance to States for tree planting	1,000,000	1,000,000	1,000,000		
Total, definite appropriations	272,734,000	277,830,000	292,117,000	+19,383,000	+14,287,000
Total, appropriation of receipts	770,000	770,000	770,000		
Total, Forest Service, Department of Agriculture	273,504,000	278,600,000	292,887,000	+19,383,000	+14,287,000

FEDERAL COAL MINE SAFETY BOARD OF REVIEW					
Salaries and expenses	67,500	70,500	71,500	+4,000	+1,000
COMMISSION OF FINE ARTS					
Salaries and expenses	120,000	123,000	123,000	+3,000	
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE					
PUBLIC HEALTH SERVICE					
Indian health activities	61,620,000	62,702,000	66,093,000	+4,473,000	+3,391,000
Construction of Indian health activities	8,335,000	8,335,000	9,088,000	+753,000	+753,000
Total, Public Health Service	69,955,000	71,037,000	75,181,000	+5,226,000	+4,144,000
INDIAN CLAIMS COMMISSION					
Salaries and expenses	310,000	335,000	347,000	+37,000	+12,000
NATIONAL CAPITAL PLANNING COMMISSION					
Salaries and expenses	665,000	696,000	1,000,000	+335,000	+304,000
Land acquisition, John F. Kennedy Center for the Performing Arts	2,175,000	2,175,000		−2,175,000	−2,175,000
Land acquisition, National Capital park, parkway, and playground system	550,000	550,000		−550,000	−550,000
Total, National Capital Planning Commission	3,390,000	3,421,000	1,000,000	−2,390,000	−2,421,000
NATIONAL CAPITAL TRANSPORTATION AGENCY					
Salaries and expenses	([13])	([13])	490,000	+490,000	+490,000
NATIONAL COUNCIL ON THE ARTS					
Salaries and expenses	[2] 50,000	50,000	150,000	+100,000	+100,000
PUBLIC LAND LAW REVIEW COMMISSION					
Salaries and expenses	[2] 350,000	350,000	1,000,000	+650,000	+650,000
SMITHSONIAN INSTITUTION					
Salaries and expenses	15,000,000	15,400,000	20,865,000	+5,865,000	+5,465,000
Archeological research and excavation (special foreign currency program)			1,300,000	+1,300,000	+1,300,000
Construction and improvements, National Zoological Park	1,525,000	1,525,000	1,539,000	+14,000	+14,000
Restoration and renovation of buildings			2,248,000	+2,248,000	+2,248,000
Salaries and expenses, National Gallery of Art	2,147,000	2,207,000	2,465,000	+318,000	+258,000
National Air Museum	1,364,000	1,364,000		−1,364,000	−1,364,000
Remodeling of Civil Service Commission Building	1,000,000	1,000,000		−1,000,000	−1,000,000
John F. Kennedy Center for the Performing Arts	15,500,000	15,500,000		−15,500,000	−15,500,000
Total, Smithsonian Institution	36,536,000	36,996,000	28,417,000	−8,119,000	−8,579,000
CIVIL WAR CENTENNIAL COMMISSION					
Salaries and expenses	100,000	100,000	100,000		
CORREGIDOR-BATAAN MEMORIAL COMMISSION					
Salaries and expenses	25,000	25,000	35,000	+10,000	+10,000

See footnotes at end of table, p. 9.

COMPARATIVE STATEMENT OF THE APPROPRIATIONS FOR FISCAL YEAR 1965, AND THE ESTIMATES FOR FISCAL YEAR 1966—Continued

Item	Fiscal year 1965		Budget estimates, 1966	Budget estimates, 1966, compared with—	
	Appropriations, 1965	Total (including anticipated pay supplemental, 1965)		Appropriations, 1965	Total (including anticipated pay supplemental, 1965)
TITLE II—RELATED AGENCIES—Continued					
VETERANS' ADMINISTRATION					
Construction, Corregidor-Bataan Memorial	$100,000	$100,000	$1,400,000	+$1,300,000	$+1,300,000
Total, Corregidor-Bataan Memorial	125,000	125,000	1,435,000	+1,310,000	+1,310,000
LEWIS AND CLARK TRAIL COMMISSION					
Salaries and expenses			25,000	+25,000	+25,000
TRANSITIONAL GRANTS TO ALASKA					
Grants			6,500,000	+6,500,000	+6,500,000
FEDERAL DEVELOPMENT PLANNING COMMITTEES FOR ALSAKA					
Salaries and expenses			200,000	+200,000	+200,000
ALASKA TEMPORARY CLAIMS COMMISSION					
Salaries and expenses	33,000	33,000		−33,000	−33,000
COMMISSION ON THE STATUS OF PUERTO RICO					
Salaries and expenses	250,000	250,000		−250,000	−250,000
Battle of Lake Erie Sesquicentennial Celebration Commission	‡ 13,553	13,553		−13,553	−13,553
Battle of New Orleans Sesquicentennial Celebration Commission	‡ 25,000	25,000		−25,000	−25,000
Total, direct appropriations	384,059,053	390,759,053	407,156,500	+23,097,447	+16,397,447
Total, appropriation of receipts	770,000	770,000	770,000		
Total, title II, related agencies	384,829,053	391,529,053	407,926,500	+23,097,447	+16,397,447
Grand total	1,076,928,270	1,091,992,270	1,270,129,500	+193,201,230	+178,137,230
Consisting of:					
Direct appropriations	1,046,069,270	1,061,121,270	1,102,625,500	+56,556,230	+41,504,230
Appropriation of receipts	16,859,000	16,871,000	138,224,000	+121,365,000	+121,353,000
Borrowing authorization	14,000,000	14,000,000	16,780,000	+2,780,000	+2,780,000
Annual contract authority			12,500,000	+12,500,000	+12,500,000

[1] Includes $1,000,000 in Supplemental Appropriation Act, 1965.
[2] Appropriated in Supplemental Appropriation Act, 1965.
[3] Includes $155,000 in Supplemental Appropriation Act, 1965.
[4] Includes $8,533,000 in Supplemental Appropriation Act, 1965, $1,800,000 in Public Works Appropriation Act, 1965, and 1964 supplemental of $4,700,000 included in regular 1965 Act.
[5] Includes 1964 supplemental of $10,000,000 appropriated in 1965 Dept. of Interior bill.
[6] Includes $90,000 in Supplemental Appropriation Act, 1965.
[7] Reflects transfer in the estimates of $775,000 from "Salaries and expenses, Office of Minerals Exploration" to "Surveys, investigations, and research, Geological Survey."
[8] Includes $25,000 in Supplemental Appropriation Act, 1965.
[9] Includes $1,050,000 in Supplemental Appropriation Act, 1965.
[10] Includes $1,041,600 in Supplemental Appropriation Act, 1965.
[11] Includes $800,000 in Supplemental Appropriation Act, 1965.
[12] Includes $1,900,000 in Department of Agriculture and Related Agencies Appropriation Act, 1965.
[13] $500,000 available by transfer from the appropriation for "Land acquisition and construction."

APPROPRIATIONS COMPARED WITH RECEIPTS (EXCLUSIVE OF TRUST FUNDS)

DEPARTMENT OF THE INTERIOR EXCLUSIVE OF THE BUREAU OF RECLAMATION AND POWER MARKETING AGENCIES

	1964 actual	1965 estimate	1966 estimate
APPROPRIATIONS			
Annual definite	$620,566,750	$664,135,217	$820,469,000
Annual indefinite	13,363,430	13,963,668	12,454,000
Authorizations to expend from debt receipts	6,000,000	14,000,000	16,780,000
Permanent	113,404,821	129,057,057	124,120,500
Revolving and management funds (programed expenditures)	67,004,320	83,753,828	69,924,113
Total	820,339,321	904,909,770	1,043,747,613
RECEIPTS			
Admission fees and concessions	6,545,523	5,299,250	918,183
Hunting stamps and receipts from sale of refuge products	7,099,546	6,367,000	6,321,000
Grazing fees	4,810,047	4,715,300	5,114,300
Revenues, Oregon and California and Coos Bay Wagon Road lands	44,747,503	41,600,000	35,380,000
Sale of sealskins and other products	4,632,667	4,546,416	5,013,600
Oil, gas, and mining royalties and rents	117,940,240	129,065,000	132,784,000
Receipts, mineral leasing, Outer Continental Shelf	16,491,410	108,000,000	286,350,000
Interest on and repayment of principal to certain funds	650,361	550,000	500,000
Collections, reclamation fund: Bureau of Land Management:			
Receipts from mineral leasing, public lands	53,053,434	58,323,000	59,804,000
Other receipts	5,093,078	5,086,000	5,460,000
Total collections, reclamation fund	(58,146,512)	(63,409,000)	(65,264,000)
Miscellaneous rentals, fees, and permits	4,497,508	4,260,300	4,067,300
Collections and services to Indians	9,020,347	8,449,200	8,595,200
Recoveries and refunds	2,078,456	2,168,450	2,087,450
Sale of public lands, buildings, and other property	850,005	796,900	821,100
Receipts, land and water conservation fund		45,000,000	125,000,000
Unclassified receipts	295,412	503,935	506,035
Receipts, Federal aid in fish restoration and management	6,358,099	7,341,529	6,500,000
Receipts, Federal aid in wildlife restoration	16,237,886	17,454,941	16,500,000
Receipts, promote and develop fishery products and research pertaining to American fisheries	5,373,096	5,297,950	5,200,000
Internal revenue collections for Virgin Islands	7,042,107	8,313,413	7,200,000
Revolving and management funds (revenues)	78,622,103	64,100,131	65,166,113
Gross receipts	391,438,828	527,238,715	779,288,281
Less duplication [1]	53,053,434	58,323,000	59,804,000
Net receipts	338,385,394	468,915,715	719,484,281
NET DIFFERENCE			
Amount by which appropriations exceed net receipts	481,953,927	435,994,055	324,263,332

[1] Receipts duplicated are as follows:

Item	1964 actual	1965 estimate	1966 estimate
Receipts from mineral leasing, public lands, collected by Bureau of Land Management included in "Oil, gas, and mining royalties and rents" and "Collections, reclamation fund"	$53,053,434	$58,323,000	$59,804,000

JUSTIFICATIONS FOR PERMANENT APPROPRIATIONS, FISCAL YEAR 1966

Chairman HAYDEN. In addition, there will be placed in the record statements presented to the committee in justification of the permanent appropriations to the Department of the Interior for fiscal year 1966.

(The justifications referred to follow:)

JUSTIFICATION FOR PERMANENT APPROPRIATIONS, FISCAL YEAR 1966

BUREAU OF LAND MANAGEMENT

Miscellaneous permanent appropriations

Appropriated, 1965 (estimate)	$76,178,770
Estimate, 1966	74,500,300
Decrease	1,678,470

JUSTIFICATION

1. Expenses, sale of timber, etc., on reclamation lands, $2,000

The cost of making and administering timber sales by the Bureau of Land Management on reclamation withdrawn lands is refunded to the Bureau of Land Management from timber sale receipts (41 Stat. 202; 53 Stat. 1196).

2. Leasing of grazing lands, Bureau of Land Management (receipt limitation), $1,000

The act of June 23, 1938 (53 Stat. 1033), authorized the Secretary of the Interior to enter into leases for the rental of grazing lands with States, counties, or private parties when the leasing of such lands will promote the orderly use of grazing district lands and aid in conserving the forage resources of the public lands therein. Under the act, rentals paid the lessors may not exceed the grazing fees paid the United States for grazing privileges on the land.

3. Payments to Oklahoma (royalties), Bureau of Land Management (receipt limitation), $10,000

The joint resolution of Congress approved June 12, 1926, provides for payment to the State of Oklahoma of 37½ percent of oil and gas royalties received from the south half of the Red River, Okla. The payment is in lieu of all State and local taxes upon Kiowa, Comanche, and Apache tribal funds received from such lands under the act of March 4, 1923 (42 Stat. 1448), and is to be used by the State for the construction and maintenance of public roads, or for the support of public schools, or other institutions of learning.

4. Payments to Coos and Douglas Counties, Oreg., from receipts, Coos Bay Wagon Road grant lands, $900,000

Not to exceed 75 percent of the receipts in any one year from the Coos Bay Wagon road-grant lands in Oregon are for payment annually, in lieu of taxes, to Coos and Douglas Counties, as provided in the act of February 26, 1919 (40 Stat. 1179), and the act of May 24, 1939 (53 Stat. 753–754).

The increase of $75,000 reflects an anticipated increase in receipts from these lands.

5. Payments to counties, Oregon and California grant lands, $18,158,000

In accordance with title II of the act of August 28, 1937 (50 Stat. 876), 75 percent of the moneys deposited in the Oregon and California land-grant fund is paid to the counties in which the revested lands are situated.

However, the "Oregon and California grant lands" appropriation of the Bureau of Land Management provides that 25 percent of the receipts collected from sale of timber and other products on the O&C lands are available for construction, acquisition, operation, and maintenance of access roads, protection, reforestation, and other improvements on the revested O&C lands and other Federal lands in the Oregon and California land-grant counties of Oregon. The amount appropriated will be a reimbursable charge against the Oregon and California land-grant fund and be reimbursed to the general fund of the Treasury. The estimate of $18,158,000 to be paid to the counties in fiscal year 1966 is based on estimated total receipts of $36.3 million collected from the sale of timber and other products on the O&C lands. This is a decrease of $2,978,000 under fiscal year 1965.

6. Payments to States (grazing fees), Bureau of Land Management, $2,000

Section 11 of the act of June 28, 1934 (43 U.S.C. 315j) provides that 33⅓ percent of all grazing fees received from each grazing district on Indian lands ceded to the United States for disposition under the public land laws, be paid to the State in which said lands are situated.

7. Payments to States (proceeds of sales), Bureau of Land Management (receipt limitation), $226,000

This appropriation is made to fulfill the Government's obligation to the States under various acts of Congress, which provide that 5 percent of the proceeds of sales of public lands and various materials therefrom, after deducting all the expenses incident to sale, shall be paid to the States for education or for making roads and improvements (31 U.S.C. 711).

8. Payments to States from grazing receipts, etc., public lands outside grazing districts, Bureau of Land Management, $350,000

Payments are made to States of 50 percent of moneys received as grazing fees from public lands outside grazing districts, under the provisions of section 15 of the act of June 28, 1934, as amended (43 U.S.C. 315i, 315m).

The increase of $31,000 reflects an anticipated increase in receipts.

9. Payments to States from grazing receipts, etc., public lands within grazing districts, Bureau of Land Management, $333,300.

Under the provisions of section 3 of the act of June 28, 1934 (43 U.S.C. 315b), 12½ percent of receipts from grazing fees from public lands within grazing districts is paid to States in which the lands are situated.

The increase of $24,800 reflects an anticipated increase in receipts.

10. Payments to States from grazing receipts, etc., public lands within grazing districts, miscellaneous, Bureau of Land Management, $10,000.

Under the provisions of the act of June 28, 1934, as amended, this appropriation is provided for payment to States of amounts received from grazing fees on miscellaneous lands within grazing districts which are not susceptible to a standardized and uniform distribution on a percentage basis (43 U.S.C. 315).

11. Payments to States from receipts under Mineral Leasing Act, $53,168,000

This is an appropriation for payment of 90 percent to Alaska and 37½ percent to Western States of receipts from bonuses, royalties, and rentals under the provision of the Mineral Leasing Act (30 U.S.C. 191), and 37½ percent of receipts from bonuses, royalties, and rentals from leases of potash deposits under the act of February 7, 1927 (30 U.S.C. 285).

The increase of $1,148,000 in 1966 is based on anticipated increase in the total receipts from these sources.

12. Payments to counties, national grasslands, $140,000

This account consists of amounts appropriated from revenues received during each calendar year from the use of submarginal lands transferred from the Department of Agriculture by Executive Order No. 10787, dated November 6, 1958. Twenty-five percent of the net revenues is used for school or road purposes or both (7 U.S.C. 1012).

13. Expenses, Public Land Administration Act, $1,200,000.

Section 301 of Public Law 86–649, approved July 14, 1960, authorized the appropriation of moneys received as a result of forfeitures by timber sale contractors for failure to restore areas damaged by cutting operations and other amounts received in settlement of damage to timber lands. Section 302 of the act authorized the appropriation of moneys received from road users for road maintenance. The amounts appropriated are to remain available until expended. Any amounts in excess of the cost of doing the work authorized are required to be transferred to miscellaneous receipts (74 Stat. 507–508).

Bureau of Indian Affairs

Claims and Treaty Obligations

Statement relating 1964, 1965, and 1966 programs

1964 appropriation	$173,086
1965 appropriation (estimate)	161,000
1966 appropriation (estimate)	161,000

JUSTIFICATION

1. Fulfilling treaties with Senecas of New York, $6,000

This is a permanent annuity made pursuant to a provision in the act of February 19, 1831, which reads as follows:

"That the proceeds of the sum of $100,000 being the amount placed in the hand of the President of the United States in trust for the Seneca Tribe of Indians situated in the State of New York, be hereafter passed to the credit of the Indian appropriation fund, and that the Secretary of War be authorized to receive and pay over to the Seneca Tribe of Indians the sum of $6,000 annually in the way and manner as heretofore practiced, to be paid out of any money in the Treasury not otherwise appropriated."

This money is paid in equal share to about 5,031 members of the Seneca Nation, and any small balance is deposited to the credit of the tribe.

2. Fulfilling treaties with Six Nations of New York, $4,500

The Six Nations comprise the Senecas, Tonawanda Band of Senecas, Tuscarora, Onondaga, Oneida, and Cayuga Tribes. This appropriation is made annually in fulfillment of treaty obligations for permanent annuity in accordance with the Act of November 11, 1794, which reads in part as follows:

"In consideration of the peace and friendship hereby established * * * and with a view to promote the future welfare of the Six Nations and of their Indian friends aforesaid, the United States will add the sum of $3,000 to the $1,500 heretofore allowed them by an article ratified by the President on the 23d day of April 1792, making in whole $4,500, which shall be expended yearly forever in purchasing clothing, domestic animals, implements of husbandry, and other utensils suited to their circumstances, and in compensating useful artificers who shall reside with or near them and be employed for their benefit."

Approximately $2,700 is allocated annually to the New York Indians and is utilized for the purchase of dress goods; the remainder, approximately $1,800, is distributed per capita to the Oneida Indians under the juridiction of the Great Lakes Agency, Wisconsin.

3. Fulfilling treaties with Pawnees, Oklahoma, $30,000

This sum is to pay the permanent annuity to the Pawnees, as required by article 2 as amended, of the treaty of September 24, 1857. As amended, this article provides:

"The United States agrees to pay to the Pawnees the sum of $30,000 per annum, as a perpetual annuity, to be distributed annually among them per capita, in coin unless the President of the United States shall from time to time otherwise direct. But it is further agreed that the President may, at any time in his discretion, discontinue said perpetuity by causing a value of a fair computation thereof to be paid to or expended for the benefit of said Indians in such manner as to him shall seem proper."

4. Payments to Indians of Sioux Reservations, $120,500

This is an annual charge against the general fund of the Treasury, the amount being indefinite until applications are made and approved.

The act of March 2, 1889, provided for the issue of certain articles necessary to aid individual Sioux Indians in industrial pursuits, particularly on their own allotments. Later, by the act of June 10, 1896, authority was granted to compute the value of the articles named and to pay to these Indians cash in lieu thereof. Payments made under this appropriation are commonly referred to as "Sioux Benefits" and can be made only upon application of the individuals entitled thereto. When cash payments are made, funds are used for purposes of direct benefit to the individual involved, including the purchase of farm equipment or livestock, and home improvement.

The legal authority for these payments is found in the act of March 2, 1889, section 17 (25 Stat. 894); act of June 10, 1896 (29 Stat. 334); and the act of June 21, 1906 (34 Stat. 326).

Miscellaneous Permanent Appropriations

Statement relating 1964, 1965, and 1966 programs

1964 appropriation	$6, 716, 773
1965 appropriation, estimate	6, 539, 200
1966 appropriation, estimate	6, 655, 200

JUSTIFICATIONS

1. Acquisition of lands and loans to Indians in Oklahoma, act of June 26, 1936, $10,000

It is estimated that $10,000 will be derived from mineral deposits underlying certain lands purchased in Oklahoma and will be used for the acquisition of lands and for loans to individual Indians, associations, or corporate groups of Indians residing in Oklahoma (25 U.S.C. 507).

2. Indians arts and crafts fund, $200

Fees charged for the use of Government trademarks attesting to genuineness and quality of Indian products and are used to stimulate sales of Indian arts and crafts (25 U.S.C. 305a,c).

3. Operation and maintenance, Indian irrigation systems, $3,890,000

All funds requested under this appropriation are obtained from the collection of assessments against water users on the various projects and are deposited in the Treasury to the credit of the respective projects. By the expenditure of these funds, the various projects located on Indian reservations are maintained in good operating condition, thus permitting the facilities constructed by the Government to be utilized by the Indian and non-Indian landowners within the project who depend upon proper operation and maintenance of the projects for irrigation farming and subsistence.

The funds are used for operation of the irrigation systems to provide adequate water deliveries; for the annual cleaning of canals and laterals to remove silt, moss, and weed growth; for the repair and replacement of water control structures; for the operation and maintenance of reservoirs, dams, and pumping plants, including the purchase of electrical energy; for the purchase of materials and supplies and equipment used in operating and maintaining the irrigation system; for the maintenance, heating, and lighting of offices used for project administration and quarters occupied by project employees; for payment to the U.S. Geological Survey for stream gaging and water recording services; for payment to other Government agencies and irrigation districts for operation and maintenance of irrigation systems on Indian lands included and benefited; for the repair of flood damage and for all incidental and necessary expenses for the proper operation, maintenance, and administration of Indian irrigation projects. The policy in administration of Indian irrigation projects is to make the assessent rate for the various projects on a basis of actual costs.

4. Power systems, Indian irrigation projects, Bureau of Indian Affairs, $2,535,000

All funds under this permanent indefinite appropriation are from earned revenue deposited in the Treasury to the credit of the respective projects. This appropriation provides funds for the operation and maintenance of two hydro-generating plants; a diesel power generating plant; transmission lines, distribution systems and pumping plants for the use of the project irrigation systems; the purchase of power for resale and for all necessary expenses for operation of power systems. The project power systems not only serve their primary purpose of furnishing electrical energy to the projects for irrigation and drainage pumping, but also furnish energy to mining and milling properties, public utilities and domestic consumers on the project proper, in nearby towns and villages, and in outlying farming areas. The energy supplied by these projects in many instances is the only source of electrical energy available to the customers. At present, there are approximately 9,600 domestic and commercial customers being served. A large number of potential customers have applied for electrical service.

The activities under the appropriation consist of operation, maintenance, and improvement of power systems built in connection with irrigation projects on the Gila River, Colorado River, and Flathead Indian Reservations. The facilities under these power projects consist in the aggregate of four generating plants of 17,620-kilowatt capacity; over 1,767 miles of transmission system; 113 project pumping plants; and approximately 116 buildings used as quarters, powerhouses, and warehouses for both power and irrigation activities. Funds are used for payment of the salaries of power superintendents; power and pumping plant operators; line repair and maintenance crews; meter reading and reporting and a clerical force for billing and accounting for revenues; for the purchase of energy; and for the purchase and repair of equipment used on the power systems. Approximately 115 million kilowatt-hours are transmitted over all project transmission and distributary systems annually.

5. Colorado River Indian Reservation benefits, southern and northern reserve, $220,000

All receipts from leasing of unassigned lands, Colorado River Indian Reservation, Ariz., southern and northern reserves, may be expended for the benefit of the Colorado River tribes and their members (69 Stat. 723).

National Park Service

Miscellaneous Permanent Appropriations

Appropriated, 1965	$135,900
Estimate, 1966	122,000
Decrease	13,900

JUSTIFICATION

1. Educational expenses, children of employees, Yellowstone National Park, $94,200

The act of June 4, 1948 (62 Stat. 338), authorizes the Secretary of the Interior to make payments in advance or otherwise from any revenues received from the collection of visitor fees to the Park, for providing education facilities to pupils who are dependents of persons engaged in the administration, operation, and maintenance of Yellowstone National Park.

The 1966 estimate is compared with the amount available for 1965, as follows:

	Available, 1965	Estimate, 1966	Increase (+) or decrease (−)
Personnel compensation and benefits	$5,000	$7,000	+$2,000
Contractual services	75,000	78,000	+3,000
Construction	17,000		−17,000
Other expenses	11,000	9,200	−1,800
Total	108,000	94,200	−13,800

Personnel compensation and benefits.—The estimate of $7,000, an increase of $2,000 over 1965, will provide for the part-time services of janitorial, firemen, and maintenance employees. The increase of $2,000 will provide for additional services required for the operation of a new and larger school building and additional grounds including the care of lawns and playgrounds.

Contractual services.—The estimate of $78,000, an increase of $3,000 over 1965, is needed to cover the pro rata costs to the Government for qualified pupils who attend various public schools. It includes an amount for estimated payments to the Yellowstone National Park School District for hire of teachers, substitute teachers' services, and school supplies for the elementary school at park headquarters, and for reimbursing school districts in communities adjacent to the park for tuition, transportation, etc. It is estimated that there will be 97 elementary and 40 high school students in 1966 as compared to estimates of 102 and 48 respectively, in 1965. The increase of $3,000 will provide for increases in teachers' compensation and for increased tuition rates.

Other expenses.—The estimate of $9,200, a decrease of $1,800 under 1965, is the amount required for other expenses incident to the operation of the school at park headquarters, principally for supplies, fuel, etc. The reduction of $1,800 is primarily the result of a decrease in the equipment needs.

2. Payment for tax losses on land acquired for Grand Teton National Park, $23,800

Pursuant to the act of September 14, 1950 (64 Stat. 851), the Secretary of the Interior is authorized to use visitor fees collected at Grand Teton and Yellowstone National Parks to compensate the State of Wyoming for tax losses on lands acquired for Grand Teton National Park.

It is estimated that $23,800 will be required to compensate the State for 1964 calendar year tax losses.

3. Operation, management, maintenance, and demolition of federally acquired properties, Independence National Historical Park, $4,000

Pursuant to the act approved June 28, 1948 (62 Stat. 1061), the Secretary of the Interior, following the consummation of an agreement with the city of Philadelphia and the Carpenter's Co. of Philadelphia, was authorized to acquire by donation, with donated funds or by purchase, real and personal properties for the establishment of Independence National Historical Park. Two amendments have been made to the basic legislation which enlarge and extend the authorization contained in the original act. The act approved October 26, 1951 (65 Stat. 644), authorized the use of all moneys collected from rental operations for the operation, management, maintenance, and demolition of federally acquired properties until such time as the buildings on them are demolished or until the properties and buildings are devoted to park purposes. The sum of $4.000 for the 1966 fiscal year is estimated to be required for the purposes stated above. It is expected that the program will terminate in fiscal 1967.

Office of Territories

Internal Revenue Collections for Virgin Islands

Appropriated, 1965	$8,313,413
Estimate, 1966	7,200,000
Decrease	1,113,413

JUSTIFICATION

Under the provisions of section 28(b) of the Revised Organic Act of the Virgin Islands, Public Law 517, 83d Congress, approved July 22, 1954, the Treasury Department is authorized to transfer customs duties and certain taxes into the Treasury of the Virgin Islands, to be available for expenditure as prescribed therein.

The internal revenue collections available to the Virgin Islands for the fiscal year 1965 under the provisions of the Revised Organic Act are $8,313,413. It is estimated that $7,200,000 will be available in the fiscal year 1966. Any balance of internal revenue collections remaining after the amount equal to the revenue collected in the Virgin Islands has been transferred will be deposited into the Treasury as miscellaneous receipts.

Geological Survey

Permanent Appropriation

Appropriated, 1965	$1,000
Estimate, 1966	1,000

JUSTIFICATION

Payment from proceeds, sale of water, Mineral Leasing Act of 1920, section 40(d), Geological Survey

When lessees or operators drilling for oil and gas on public lands strike water, water wells may be developed by the Department from proceeds from the sale of water from existing wells (30 U.S.C. 221–229). During 1966 proceeds totaling $1,000 are anticipated. No obligations are anticipated in 1966.

Bureau of Commercial Fisheries

Promote and Develop Fishery Products and Research Pertaining to American Fisheries

Statement relating appropriation estimate to current appropriation

1964 appropriation (receipts for calendar year 1962)	$5, 373, 096
1965 appropriation (receipts for calendar year 1963)	5, 297, 950
1966 appropriation (estimated receipts for calendar year 1964)	5, 200, 000

Pursuant to the provisions of the act of July 1, 1954 (68 Stat. 376), as amended by the Fish and Wildlife Act of 1956 (70 Stat. 1119), an amount equal to 30 percent of the gross receipts from customs receipts on fishery products is maintained in a separate fund and used by the Secretary of the Interior (1) to promote the free flow of domestically produced fishery products in commerce; (2) to develop and increase markets for fishery products of domestic origin; and (3) to conduct any biological, technological, or other research pertaining to American fisheries. The work under this appropriation falls under four activities: (1) Marketing and technology, which includes commercial fishery economics, exploratory fishing and gear development, fishery market news service, commercial fishery statistics, fishery technological studies, and fishery education and market development; (2) research, which consists of coastal and offshore fishery research, and commercial shellfishery research; (3) Research on fish migration over dams; and (4) general administrative services, which cover such expenses incident to this program, including expenses of the American Fisheries Advisory Committee.

Payment to Alaska from Pribilof Island Receipts

Statement relating appropriation estimate to current appropriation

Appropriated, 1964	$589,300
Appropriated, 1965	963,635
Estimate, 1966	500,000
Decrease	463,635

Section 6(e) of the Alaska Statehood Act of July 7, 1958 (72 Stat. 339), provides that "Commencing with the year during which Alaska is admitted into the Union, the Secretary of the Treasury, at the close of each fiscal year, shall pay to the State of Alaska 70 per centum of the net proceeds, as determined by the Secretary of the Interior, derived during such fiscal year from all sales of sealskins or sea-otter skins made in accordance with the provisions of the Act of February 26, 1944 (58 Stat. 100; 16 U.S.C., secs. 631a–631q), as supplemented and amended * * *." Payment is to be made from the Pribilof Islands fund.

Bureau of Sport Fisheries and Wildlife

Migratory Bird Conservation Account

Estimate, 1965 (indefinite)	$5,000,000
Estimate, 1966 (indefinite)	5,000,000

JUSTIFICATION

Receipts from the sale of Federal migratory bird hunting stamps under the Hunting Stamp Tax Act of March 16, 1934 (16 U.S.C. 718), are available exclusively for payment of Post Office Department expenses of printing and selling migratory bird hunting stamps, and the location, ascertainment, and acquisition of suitable areas for migratory bird refuges under the provisions of the Migratory Bird Conservation Act. The estimated receipts of the Migratory Bird Conservation Account in 1965 are $5 million, to be derived from sales of 1,666,666 migratory bird hunting stamps at $3. No increase in the sale of stamps in 1966 is forecast.

Obligations for purchase of waterfowl habitat in fiscal year 1964 from duck stamp receipts and the $10 million advance covered 65,819 acres in fee, 71,575 acres of wet lands in easements, and the lease of 23,136 acres.

The $13 million available in 1965 ($5 million estimated stamp sales and an $8 million advance) will provide for acquisition of an estimated 78,705 acres in fee and 134,100 acres of wet lands in easements.

The estimate for 1966 of $12,500,000 ($5 million estimated stamp sales and a $7,500,000 advance) will provide for acquisition of an estimated 88,500 acres in fee and 144,000 acres of wet lands in easements.

	Estimate, 1965	Increase or decrease (−)	Estimate, 1966	Transfer from advances to migratory bird conservation account	Total estimate, 1966
1. Printing and sale of hunting stamps. Payment to Post Office Department for cost of printing, sale, and accounting for migratory bird hunting stamps	$115,000	----------	$115,000	----------	$115,000
2. Acquisition of refuges and other areas. Costs of location, ascertainment, and acquisition of migratory bird refuges and waterfowl production areas:					
(a) Realty costs involving location, ascertainment, and appraisal of areas and presentation of proposals to the Migratory Bird Conservation Commission; and, following approval of the Commission, negotiation, title verification, title clearance, and other expenses incident to vesting title in the United States	800,000	----------	800,000	900,000	1,700,000
(b) Engineering costs in connection with location and ascertainment of areas, drafting services, and other costs incident to preparation of preliminary development plans; outline specifications, estimates, and topographic maps; engineering studies; water rights investigations and filings; and other costs incident to preparing cases for presentation to the MBCC; and, following approval by the Commission, surveys incident to vesting title in the United States	575,000	----------	575,000	125,000	700,000
(c) Biological work costs in the location and ascertainment of refuge areas and waterfowl production areas in the prairie pothole region of the Midwest, and the preparation of preliminary management plans and estimates, as well as costs incident to preparing cases for presentation to the Migratory Bird Conservation Commission	141,000	$9,000	150,000	----------	150,000
(d) Administrative costs including executive direction and general administrative services attributable to the program	64,000	5,300	69,300	----------	69,300
(e) Land acquisition costs including rental of areas, water rights, rights-of-way, easements, relocation expenses of owners, and other direct costs of acquiring areas or rights and interests therein	3,305,000	−14,300	3,290,700	6,475,000	9,765,700
Total	5,000,000	----------	5,000,000	7,500,000	12,500,000

Federal Aid in Fish Restoration and Management

Statement relating appropriation estimate to current appropriation

Appropriated, 1965	$7,341,529
Estimate, 1966	6,500,000
Decrease	841,529

JUSTIFICATION

The act of August 9, 1950, popularly known as the Dingell-Johnson Act (16 U.S.C. 777a–k) authorizes the Secretary of the Interior to cooperate with the States through their respective fish and game departments in fish restoration and management projects. The act authorizes appropriation of an amount equal to collections of the 10-percent manufacturers' excise tax on fishing rods, creels, reels, artificial lures, etc. There is authorized to be deducted from amounts so appropriated not to exceed 8-percent for expenses of administration of the act. The remainder is apportioned to the States on the basis of a formula which takes into account the land area and number of persons holding paid fishing licenses. The act provides for 1 percent minimum and 5 percent maximum apportionments to the States and fixed apportionments to the island possessions. The States and possessions have 2 years in which to obligate the apportionments. Any money not obligated reverts to the Bureau and is used for its sport fish research program. The 1966 program is a decrease of $500,000 as follows:

	Estimate, 1965	Increase or decrease (—)	Estimate, 1966
1. Payments to States: States are reimbursed up to 75 percent of the cost of approved fish restoration and management projects, including research into fish culture; formulation of restocking plans; and acquisition and improvement of fish habitat. Island possessions are reimbursed 100 percent of the cost of such projects. The decrease is due to a reduction in receipts for 1965 to be apportioned in 1966	$6,494,000	—$576,500	$5,917,500
2. Administration: Administration of the act includes apportionment of funds, examination and approval of fish restoration and management plans, processing of project agreement after approval of State plans, inspection of projects, making payments to States and auditing State expenditures, and coordinating research effort of the various States. The increase of $76,500 is for a national survey of hunting and fishing	481,000	76,500	557,500
3. Sport fish research: Funds apportioned but not expended by the States within 2 years are used to supplement moneys appropriated to this Bureau under management and investigations of resources, for research on sport fish. The 1966 program is the same as 1965	25,000		25,000
Total program	7,000,000	—500,000	6,500,000

Federal Aid in Wildlife Restoration

Statement relating appropriation estimate to current appropriation

Appropriated, 1965	$17,454,941
Estimate, 1966	16,500,000
Decrease	954,941

JUSTIFICATION

The act of September 2, 1937, popularly known as the Pittman-Robertson Act (16 U.S.C. 669–669j) authorizes the Secretary of the Interior to cooperate with the States through their respective fish and game departments in wildlife restoration projects. The act authorizes the setting aside in a special Federal aid to wildlife restoration fund an appropriation of amounts equal to revenues from the 11-percent manufacturers' excise tax on firearms, shells, and cartridges. There is authorized to be deducted from amounts so appropriated not to exceed 8 percent for expenses of administration of the act. The remainder is apportioned to the States on the basis of a formula which takes equally into account the land area and the number of persons holding paid hunting licenses. The act provides for one-half of 1 percent minimum and 5 percent maximum apportionments to the States and fixed apportionments to the island possessions. The States and possessions have 2 years in which to obligate the apportionments. Any money not obligated reverts to the Bureau and is used for carrying out the purposes of

the Migratory Bird Conservation Act. The 1966 program is a decrease of $500,000 as follows:

	Estimate, 1965	Increase or decrease (−)	Estimate, 1966
1. Payments to States: States are reimbursed up to 75 percent of the cost of approved wildlife restoration projects including acquisition and development of land or water areas, and for wildlife management research and maintenance of completed projects not to exceed 25 percent of the total amount apportioned. Island possessions are reimbursed 100 percent of the cost of such projects. The decrease is due to a reduction in receipts for 1965 to be apportioned in 1966	$15,615,300	−$556,900	$15,058,400
2. Administration: Administration of the act includes apportionment of funds; examination and approval of wildlife restoration plans, specifications, and estimates from the States; processing of project agreements after approval of State plans; inspection of projects; making payments to States and auditing State expenditures; and coordination of research effort of the various States. The increase of $56,900 is for a national survey of hunting and fishing	1,093,700	56,900	1,150,600
3. Carrying out Migratory Bird Conservation Act: Funds apportioned but not expended by States within 2 years are available to carry out the provisions of the Migratory Bird Conservation Act and to supplement moneys appropriated for this purpose to this Bureau under Management and Investigations of Resources. The 1966 estimate is the same as 1965	291,000		291,000
Total program	17,000,000	−500,000	16,500,000

Payments to Counties, National Grasslands

Statement relating appropriation estimate to current appropriation

Estimate, 1965	$5,000
Estimate, 1966	5,000

JUSTIFICATION

Executive Order No. 10787, transferring certain submarginal lands to the Secretary of the Interior for administration by the Bureau of Sport Fisheries and Wildlife as refuges for migratory birds and other wildlife provides that the counties shall participate in the net revenues from the use of such lands in accordance with the Farm Tenant Act (7 U.S.C. 1011 and 1012). This act specifically provides that 25 percent of the net revenues received from the use of submarginal lands shall be paid after the close of the calendar year to the county in which such lands are situated for the benefit of schools and roads. When the land is situated in more than one county, the net receipts are prorated to each county in proportion to the area of the land in the particular county. Revenues from the use of these lands consist of receipts from grazing, rights-of-way, concession operations, and from other privileges on refuges.

Permanent Appropriations From National Wildlife Refuge Receipts

Appropriated, 1965	$1,664,719
Estimate, 1966	1,776,000
Increase	111,281

JUSTIFICATION

The Migratory Bird Conservation Act (16 U.S.C. 715s) authorizes the sale of products from the national wildlife refuge system. Revenues consist of receipts from the sale of surplus wildlife or of oil, timber, hay, grass, or other spontaneous products of the soil, shell, sand or gravel, and from other privileges on refuges.

Expenses for sales, etc., in refuges, Migratory Bird Conservation Act, $191,000.—Section 401 of the act provides for deduction of the direct expenses of sales from refuge revenue prior to distribution of net revenues. Examples of such expenses are salaries of foresters to cruise and mark timber for sale, auctioneer's fees, transportation of furs to auction houses, and labor and supplies for butchering and shipping buffalo. The program for 1966 is an increase of $13,000 over 1965 for expenses because of anticipated increased timber sales.

Management of national wildlife refuges, $1,393,441.—64 Stat. 693–694 is a permanent appropriation of 75 percent of the net refuge revenues under the Migratory Bird Conservation Act for management of national wildlife refuges and law enforcement. The 1966 program is as follows:

(1) *Development and maintenance of wildlife refuges.*—To supplement funds provided for management of wildlife refuges in the appropriation management and investigations of resources. These funds are used for salaries and general expenses of the management of national wildlife refuges program. The 1966 program totals $895,441 and is an increase of $200,808 over 1965.

(2) *Enforcement activities.*—To supplement funds provided for enforcement of migratory bird laws in the management and investigations of resources appropriation. These funds are used for salaries and general expenses in support of the program of enforcement of the Migratory Bird Treaty and Lacey Acts. The 1966 program totals $498,000 and is an increase of $9,000 over 1965.

Payments to counties from receipts under Migratory Bird Conservation Act, $392,000.—The Migratory Bird Conservation Act provides for participation of counties in revenues from refuges. After deduction of expenses from gross receipts on a refuge by refuge basis 25 percent of the remainder is paid to each county in which a refuge is located to be expended for the benefit of the public schools and roads. When a refuge is in more than one county the net receipts are prorated to each county in proportion to the area of the refuge in the particular county. The 1966 program is $392,000, an increase of $14,722 over 1965.

Statement of Secretary Udall

Chairman Hayden. The Secretary of the Interior will make the overall budget presentation for his department.

Secretary Udall, I shall be glad to have you present the staff members who accompany you this morning, and then you may either read your statement or you may place it in the record in full and discuss it as you wish.

Secretary Udall. Thank you very much, Mr. Chairman.

It is always a pleasure to appear before the committee. I have a complete statement which I should like to appear in the record.

Chairman Hayden. Mr. Udall, that is agreeable.

Introduction

Secretary Udall. Mr. Chairman and members of the committee, this is my fifth appearance before this committee. I am advised that it is the first time since Harold L. Ickes that a Secretary of the Interior has had the privilege of presenting as many as five annual budgets to this important committee. That is an interesting historical footnote.

The present chairman, Senator Hayden, was chairman of the committee at the time Harold L. Ickes first appeared before the committee. Although the chairman's colleagues at that time have left the scene, the Department is fortunate that the present membership of the committee has given strong support to the conservation effort. The committee, under the chairman's leadership, can take much credit for the progress which has been achieved.

The reawakening of America in the materialness of natural resources to the future of this Nation is a challenge which must be met by the Congress and the executive branch. Continuation of the understanding and cooperation which has prevailed in the past will insure the preservation and protection of our natural resources so vital to the future well-being of America's strength.

Program Responsibilities and Economy

The budget for fiscal year 1966 reflects our effort to fulfill program responsibilities of the Department of the Interior with economy—both in use of funds and use of manpower.

The accent on thrift in Government ordered last year by President Johnson is even stronger this year.

We have tried to identify and eliminate avoidable costs. As a result, it has been possible to compensate for part of the funds required for new and expanded programs by economies in the operation of going programs.

We will continue aggressively to seek out every opportunity for economy, in accordance with the President's determination to obtain a dollar or more of value for every Federal dollar spent.

Personnel Utilization

We are striving to achieve better manpower utilization and thus to hold Federal employment to the minimum. Last year, in my testimony before this subcommittee, I estimated that the Department of the Interior would have about 72,350 employees as of June 30, 1964. The number we actually had on that date was 69,712—some 2,600 fewer than I had estimated.

Mr. Chairman, I want to say that this was the result of management practices that took a great deal of effort by my people at all levels. We take some satisfaction in the result we achieved.

Our most recent estimate of number of employees as of June 30, 1965, is about 70,000—still about 2,350 fewer than we anticipated having at the end of last fiscal year. Estimated number of employees as of June 30, 1966, is about 71,650—still about 700 fewer than was originally forecast for the end of fiscal year 1964.

I feel this represents significant accomplishment. It is the direct result of the concerted effort of our management people to utilize manpower more effectively. We are going to be able to take on new or expanded programs—land and water conservation fund, water resources research, expanded Indian education, operation of new park areas and facilities, et cetera—with a very moderate net increase of personnel. We will continue to seek out additional opportunities to hold Federal employment to a minimum.

Budget Estimate Increases

The total budget estimate included in this bill is $837,249,000. That is an increase of $150,656,135—of which $125,000 is the appropriation of the revenues that are estimated will accrue to the land and water conservation fund, as authorized by Public Law 88–578, so that the bulk of the increase is for this new program.

Other significant increases are: $18,309,000 for construction of schools and other buildings for our Indian people; $3 million for repair of earthquake damage to the Alaska Railroad; $1,250,000 for seismology research to determine if we can now find ways to predict the imminence of earthquakes along known active fault lines; $2,500,000 for fishing vessels construction subsidy, authorized by the Fishing Fleet Improvement Act of last year; $2 million to assist the States in fisheries research; $16,750,000 for saline water conversion research;

and $4,425,000 for water resources research for the new program that Congress passed last year.

I want to say more about several of these items, but before doing so I want briefly to mention the amounts requested for the Bureau of Reclamation and for Interior's power marketing agencies. The fiscal year 1966 estimate of $432,448,000 for these activities is an increase of $1,539,605 over 1965. When combined with the estimates in this bill, the departmental total request is $1,269,697,000.

Receipts From Department Operations

Substantial receipts result from Department of the Interior operations—public land mineral royalties, sale of hydroelectric power produced by multipurpose Federal projects, public land grazing fees, sales of timber from the public land, and a number of others. These should be kept in mind in evaluation of Interior's total budget.

Chairman Hayden. What are the total receipts?

Secretary Udall. Total receipts, including estimated accruals to the land and water conservation fund, are estimated at $1,023,608,118 for fiscal year 1966, an increase of $265,436,800 over estimated receipts for fiscal year 1965.

So our receipts are also going up. Again, Mr. Chairman, we take some pride in the fact that this is one department where receipts come very close to expenditures.

I want now to offer the strong justifications that support the principal items accounting for our requested net increase of about $151 million for operations covered in this bill.

Land and Water Conservation Fund

The bulk of the increase, as mentioned a little while ago, is the appropriation of $125 million of revenues accruing to the land and water conservation fund established by Public Law 88–578. These revenues consist of fees that were earmarked to go into this special fund. They consist of—

Accruals from the system of admission and user fees soon to go into effect on many Federal recreation areas;

Accruals from sales of surplus Federal real property; and

Accruals from the existing Federal excise tax on motorboat fuels.

We have been working carefully on this. Mr. Crafts of the Bureau of Outdoor Recreation can report on this.

Continuous Congressional Approval

Interior legislative committees considered these in setting up this fund. These moneys, I say again, were in effect marked to be covered in this new conservation fund. Of course, Congress also provided, and this is what we requested, that each year we would come before the Appropriations Committee. This is not like the highway trust fund where the moneys are earmarked, and simply go out on the basis of a formula to the States. We expect to come in every year before this committee and explain to you how we propose this fund be used.

RECREATION USER FEES

I have always been a firm supporter of taxation linked to ability to pay, but I also think there is a definite place for selected types of user fees—to help finance services or facilities especially desired by the persons who will utilize such services or facilities. It was by adoption of the user-fee principle—in the form of motor fuel taxes—that we raised capital for our present great system of highways. Congress has, very wisely, now employed that same general principle as a means to help raise capital to provide the American people with more of the outdoor recreational opportunities needed by this generation and by future generations.

CONTRIBUTIONS AND RECEIPTS SHARED BY STATES

I firmly believe we are now on our way toward solution of the Nation's outdoor recreation problems. As often before, we have come up with a plan of action which helps States and their own units of local government to help themselves. Out of the total money appropriated under the land and water conservation fund authorization, 60 percent will be distributed to the States—provided each State will match the Federal assistance on the basis of the $3 of State and local funds to every $2 of Federal funds. Information I have received from the States indicates that some $300 million of State and local funds will be available for expenditures for outdoor recreation lands and facilities in fiscal year 1966. That prospect is very encouraging. Of course, the moneys accruing to the fund will not be large enough to match that full amount in 1 year.

I think this fund is going to finance this budget effort which, as the President mentioned in his state of the Union message, is to save the green legacy for tomorrow. This will be a state effort and a Federal effort. As a matter of fact, 60 percent of the total money under this fund will be distributed to the States in a formula to be matched by the States on a 40–60 basis 40 percent Federal and 60 percent State.

This is the beginning of this effort. One thing I should like to make plain to the committee, because we are most hopeful that this committee will go along with the same type of practice that it has followed in the past on the Dingell-Johnson and Pittman-Robertson funds that go to the States; that is, that we protect from the beginning the integrity of the fund and that all the revenues accruing to the fund will be used for the purposes outlined in the bill. We think this is the way the committee, on the basis of its past practice, would want to handle this fund.

GUARANTEEING INTEGRITY OF CONSERVATION FUND

We think it is the only way to guarantee the integrity of the fund. That is, since these are earmarked revenues, whatever goes into the fund will be appropriated—for example, we have estimated the revenues at $125 million. It may be a little bit more or a little bit less than this. It would not surprise me if it is more. We would hope that the committee, when we come in a year from now, would take that into account in acting on our new estimates. In any event all the moneys that are earmarked to go into the fund will go into the

fund and we will try to work out our appropriations program for the State matching money and for the Federal components of the program, each year with the committee, so that this money is used as the Congress intended for the new State-Federal outdoor recreation program.

STATE ENTHUSIASM

There is every indication from all we can find out that most of the States are ready to go. I think there is a great deal of State enthusiasm. The States have a lot of very exciting projects. Many Members of Congress have talked to me about this since the Congress convened. The States all want to count on availability of the full Federal matching moneys. I think that this committee with our help, can see to it that this program begins to move in a very orderly way.

The committee will be interested to know that this Congress made the effective date of this legislation the 1st of January and the funds have already begun to accrue from these sources.

RECREATION USER FEES

An Executive order to be signed by the President has been at the White House for several days now. It is being processed and we expect this to be signed shortly so that the user fee program will begin some time in the early spring. Those funds will begin to accrue, so we are making a whole new policy and approach to the outdoor recreation program. This fund is also going to be able to finance all of the new park proposals that Congress has been passing.

ACQUISITION OF LARGE EASTERN PARK AREAS

It will enable the Department of Agriculture and the Forest Service to acquire prime outdoor recreation areas that would be added to national forests primarily in the eastern part of the country. As a matter of fact, we anticipate that on the Federal side there will probably be far more money spent east of the Mississippi than west of the Mississippi because we have our big public landholdings in the West and most of the costly items, such as new national seashores and new outdoor recreation areas, will be in the eastern part of the country.

FUNDS MADE AVAILABLE TO OTHER AGENCIES

The budget proposes that 40 percent of the $125 million in the fund be made available, pursuant to Public Law 88–578, to the Forest Service, National Park Service, and the Bureau of Sport Fisheries and Wildlife for needed acquisition of key recreation tracts already authorized.

The National Park Service, Bureau of Sport Fisheries and Wildlife, and the Forest Service will make their own presentations of the details of this program each year. They will appear before the committee later.

FEDERAL GOVERNMENT RESPONSIBILITY

My one concern, so far as this land and water conservation fund operation goes, is that the Federal Government not be under temptation to drag its feet. I sincerely hope that the Congress will provide full funding for this program from the very outset. That means annual appropriations up to the full amount of estimated accruals to the fund. Every year of delay in acquisition of lands needed to meet future recreation needs will entail higher prices for such lands as they finally are acquired. Let's be sure that we don't foreclose long-term economy by an unduly frugal short-term policy.

ACCELERATION OF SALINE WATER PROGRAM

I especially want to stress our proposed acceleration of development in water-desalting technology. This program, as you know, is one that President Johnson requested us to formulate.

We came in with a report to him in October and this is what we are trying to implement by the appropriation we have requested.

To move ahead on this without delay, the President has transmitted a supplemental appropriation request of $3.9 million for use during the remainder of the current 1965 fiscal year. For 1966, the budget request is $29 million, a substantial increase over the $12.25 million currently available. A modest increase in personnel will also be required to administer the expanded program.

This accelerated effort is highly desirable because we can now identify specific locations and situations where desalting technology offers promise of playing a meaningful role in water supply. We have laid a firm foundation during the program's 12-year history. Now is the time to build.

DESALTING IN SOUTHERN CALIFORNIA

We have reasonable confidence that within 5 years desalting will be supplying large quantities of municipal and industrial fresh water in southern California. The Metropolitan Water District of Southern California is interested in adding 150 million gallons per day of desalting capacity in its system by 1970. Together with the Atomic Energy Commission, we are cooperating with Metropolitan in an engineering and economic feasability study of a large dual-purpose, desalting and electric powerplant to meet that need.

The study appears promising. But in order that more precise specifications be available for use in connection with this and similar applications here and abroad, we propose an intensive program to design and develop equipment for large-size installations.

In addition, we propose to increase our efforts to develop desalting processes that can economically be utilized in small plants, suitable and inexpensive enough to provide much needed relief to numerous midcontinent communities now dependent on brackish water or on other local water supplies of very poor quality.

AUTHORIZED PROGRAM DEMONSTRATIONS

Chairman HAYDEN How much salt per acre-foot or some other measurement has been taken from sea water to date?

Secretary UDALL. I particularly want to discuss this with the committee because it is the result of this committee's support over the last 12 or 13 years that this program has gotten to the point where it is now. We have, as authorized, carried out under the appropriations you have made in the past, these demonstrations in South Dakota, New Mexico, California, Texas, and North Carolina. We feel, however, that we have now reached the point where that we want to shift from one level to another.

We think that the next 18 months is the time to accelerate our whole research and technology effort because we anticipate coming in here a year from now, with concrete proposals, to present to the Congress for moving into the first very large plants.

Perhaps one in southern California, on the coast; perhaps one would be built jointly with the Israel Government. We have an outstanding contract that was signed a month ago with the Kaiser Co. to study the economic and engineering feasibility of this plant.

Senator MUNDT. To be built where? In Israel?

NEW PROCESSES IN VIEW

Secretary UDALL. Yes.

We are also most hopeful that there are new processes that are coming in view, there are new refinements of existing processes that are going to make it available to produce much cheaper water in handling these inland brackish waters. My people will be ready to present considerable detail on this for you. I want to have the committee question them closely and get well acquainted with them. We have a new director of this program. Frank Di Luzio, a man with an atomic energy background, an outstanding manager and administrator. I think he has taken hold very well in the last few weeks as director of the program.

I am sure you will find him ready to present a very clear case.

LOWEST COST ACHIEVED

Chairman HAYDEN. Up to now, what is the cheapest cost you have achieved?

Secretary UDALL. Mr. Chairman, I think I can answer your question in this fashion. Due to the work we have done up to this point with these million-gallon-a-day plants that we are building, we have water priced in the neighborhood of $1 per thousand gallons. It is our anticipation, if you will give us the money to carry out additional research and if the design of these plants goes forward as we anticipate it will, that we will be able to break through—to bring the cost of water from a dollar, we hope, to in the neighborhood of between 30 and 40 cents per thousand gallons.

Chairman HAYDEN. Could you have some mathematicians translate the measurement into acre-feet?

Secretary UDALL. This is where I always get confused.

Chairman HAYDEN. You can put it in the record.

(The information referred to follows:)

Comparative cost relationship

Cost per 1,000 gallons:	*Cost per acre-foot*
$1	$326
40 cents	130
30 cents	58

WATER AT A COMPETITIVE PRICE

Secretary UDALL. This I think, Mr. Chairman, would be the type of breakthrough that this committee has had as its goal and that we have been talking about over the years. This does not mean 30-cent water. This does not mean water for irrigation but this does mean that this is water that will be competitive and will be usable by many communities for municipal and industrial purposes. As a matter of fact, what they are talking about already in Los Angeles with their big system, the largest municipal distribution system in the country, the Metropolitan Water District, which provides water for Los Angeles and all the way to San Diego and all these communities, is that they plan to use the desalted water to sweeten and thereby improve the quality of the existing water supply. This is something that has developed that is very promising.

GUANTANAMO BAY PLANT

Senator YOUNG. Could I ask a question at this point? Does the Interior Department have a plant at Guantanamo Bay?

Secretary UDALL. What happened is this. We had a flash distillation plant at Point Loma, near San Diego. When Castro made his grandstand play and indicated he was cutting off our water, the President, a little over a year ago, made the decision that we are no longer going to buy the water from the Cuban Government but that we would build a plant of our own at Guantanamo so that we were self-sufficient so far as water is concerned. We at that time offered, because of the need to move immediately on this, the San Diego plant to the Department of the Navy. They took up our offer and that plant was taken up and moved, lock, stock, and barrel, to Guantanamo. It is there in operation and has been for some time. One of the questions that we are confronted with now is whether we should restore and build a new plant at the San Diego location. This is an example of where this program served the national defense purpose. We just picked that plant up and moved it to Guantanamo and actually we put some improvement in the plant based on the latest research. It is operating very efficiently now, I am told.

PROPOSED NEW PLANT IN SOUTHERN CALIFORNIA

Senator YOUNG. What is the cost of purifying water there?

Secretary UDALL. The cost of that plant—this is one of the most efficient plants—is about a dollar per thousand gallons. It is only a million-gallon-a-day plant. The Bechtel Co. at San Francisco, has a four-way contract, Bechtel, Metropolitan Water District, Atomic Energy Commission, and Interior Department. This is not only an economic study but a detailed engineering feasability study of a 150-million-gallon-a-day plant that would be proposed to be built somewhere on the southern California coast. This would be 150 times

larger. This would be the big jump that we would be making and we are confident that if we perfect our research and get the very latest techniques we can achieve tremendous economies and can break the price very sharply on the cost for water.

The reason that we feel that this budget should be doubled as we have proposed—I know the committee will want to take a hard look at this, but I hope you can support us and go all the way on this, because the Bureau of the Budget and the President's science advisers have both scrutinized this very closely—it is our feeling we are going to be moving into these large plants and we also are going to be making it possible for these inland communities to build small plants. More and more interest is building up for plants such as the ones in South Dakota and in New Mexico. Brackish waters in the tremendous underground reservoirs that exist in large parts of our country are a water resource that this program will enable us to exploit—we are not just looking at the ocean but we are looking to inland waters as well. It is our feeling that what might be described as a crash research effort is necessary because we have so many promising lines of research that we would like to pursue in the next year or 18 months so that when we get ready to build these new plants we will have then the very best process that is available at that time.

This I think is going to be a very exciting period during the next 18 months in this program because we are going to be making final decisions, doing final research that will enable us to actually move into a whole new phase in this program.

ADEQUACY OF LEGISLATIVE AUTHORITY

Senator MUNDT. Aside from the money required, do you have all the legislative authority you need to go ahead with this program and build these plants?

Secretary UDALL. Senator, we will be pressing both of the Interior Committees for additional authorizing legislation to give us the authorization that we will need to carry out the ongoing program. We do have sufficient existing authorization for what we are asking at this time.

Basically, our program has two identifiable facets, a short-range program to engineer into operating plants, presently known state of the arts and the long-range program that includes basic research hopefully leading to new and presently unthought of means to cheaply sweeten both sea and brackish waters.

RESEARCH IN EXPERIMENTAL PLANTS

Senator MUNDT. Have you learned anything from your plant up in Webster that enables you to use new techniques or is that a unit that stays as it is?

Secretary UDALL. No, Senator, and I am sure you can get some very, very interesting details from the Director of the program and his people. This is not just setting up the plant that you and I dedicated more than 2 years ago and operating it but some of this research money has been used on these experimental plants to try out new techniques. I think my people will tell you we made significant improvements.

REVERSE OSMOSIS PROCESS

One new development where we feel a very intensive research is in order is what is called a reverse osmosis process, using membranes. I had better not go too far or I will get in over my head telling you about it. But this is something that even a couple of years ago was not very much in the picture.

We now consider this quite promising. This is one of the new lines of research that we would like to pursue very aggressively. But in terms of the Webster plant we have made a lot of changes and improvements. We are trying simply not to see whether the plant will operate—we know it will, we learned that at the beginning—but how can we improve the technology of it, how can we make this produce even cheaper water and cut the cost. This is the problem we are confronted with.

WATER RESOURCES RESEARCH ACT OF 1964

While I am on the subject of water, I also would like to mention another important water research item included in this budget request.

The Water Resources Research Act of 1964 is a great step forward toward recognizing the urgent need for more adequate water research to solve problems that must be dealt with if we are to meet the water needs of future generations.

This act provides for Federal assistance for the conduct of research investigations, experiments, and training of scientists in the fields of water resources and resources which affect water. This program is patterned after the agricultural research station, the research program, with the land-grant colleges.

STATE WATER RESEARCH INSTITUTES

Each of the 50 States under this legislation, and this in most instances will be the land-grant colleges, or universities, will set up a water research institute. Some States already have such programs. This will stimulate all States to have water research institutes which will enable the States to tackle the particular water research problems that each of the States has. This will be a new partnership with the States. There has been tremendous enthusiasm and interest by all of the States in this program.

It authorizes grants for the establishment of State water research institutes; matching funds for State institutes; and funds for grants, contracts, matching or other arrangements with other educational institutions, private foundations or firms, and local, State, and Federal Government agencies.

FUNDING OF INSTITUTES

A supplemental appropriation, approved in October 1964, provided funds for 14 institutes and $260,000 of matching money. We already have this program launched. We have 36 additional proposals in hand and the proposal from Puerto Rico is in process of preparation. A fiscal year 1965 supplemental estimate in the amount of $2.8 million has been submitted to the Congress for the additional proposals. I feel it is vital that we get these centers into operation as soon as possible. As I say the States have shown a keen interest in it.

The 1966 budget provides the second year level of financing for the institutes. It also provides $1 million for matching (on a dollar-for-dollar basis) non-Federal funds available to State water resources research centers to undertake specific projects that could not otherwise be carried out. No funding is requested for title II of the act pending legislative action to eliminate required congressional clearance for acceptance of research proposals submitted by organizations and individuals other than State water research centers.

Indian Programs Increases

We also have some increases, Mr. Chairman, with regard to our Indian programs. I should like to say again, to commend this committee, because we can all take satisfaction today that we have an adequate school plant for the first time to take care of the needs of our Indian people.

This is as a result of the strong support this committee has given us, some very substantial increases in the last 4 years to build these facilities that are needed. But there still is a job to do. I think we are making some very striking progress in some areas, where in other areas we are not in regard to helping our Indian people to develop their resources, industrial payrolls and things of that kind.

Integration of Indian and White Schoolchildren

Chairman Hayden. What luck have you had in having Indian children attend schools where the white children can be with them on the playground?

Secretary Udall. We think this program has functioned very well where the Indian children have been in effect integrated with existing systems that are close by.

One of the problems I have discussed before with this committee is the fact that many of our Indian communities are so isolated you necessarily have to have the school there so that the children can live in their homes and attend school.

But I think where we have been able to establish these bordertown schools that this has worked very well.

Senator Mundt. You have moved in that direction very rapidly and successfully in South Dakota. The results in our State have been particularly fine.

Chairman Hayden. They have been wonderful. Is that general now or have you had less success in other areas?

Secretary Udall. I would say it has not been everywhere as successful as it has in South Dakota but I think over all the results have been very good. It is not an ideal situation in some areas but I think in the main this type of integration of children has worked very well.

Indian Vocational Training

Senator McGee. May I raise a question, Mr. Chairman.

Chairman Hayden. Yes.

Senator McGee. Mr. Secretary, my tribal council was back here exploring the possibility of their establishing there on the Wind River Reservation the reemployment, retraining type of school that would assist them in doing a little more than existing on the land there.

I wonder what kind of examples or pilot institutions of that type are available that we might have a look at.

Secretary UDALL. Were they primarily interested in this vocational training?

Senator MCGEE. This vocational type training rather than the straight educational institution.

KEYING TRAINING PROGRAMS TO DEVELOPMENT PROJECTS

Secretary UDALL. Yes. We have had very fine success with the vocational educational training program, particularly where we have been able to key a vocational training program with the location of a new resource development project or a new industry on an Indian reservation.

In other words, we are able to say to people if you locate a plant here, an industrial plant, or a plant that will develop a resource you have on the Indian reservation; this might be a new sawmill as we have had, or it could be a new electronics plant and we have some of that type, but we can then through this type of vocational training, train people to take jobs in a new industry that is coming there to locate.

They can be in effect trained when the industrial establishment is ready to open its doors. I think this has been one of the most successful programs we have had.

Senator MCGEE. They have been waiting for something like that. They have a proposal pending now that is rather substantial in size involving a new gypsum development out there. Their concern at the moment stems from the fact that there is an industry that has moved in the area but the Indians did not get a slice of it.

The reason was that they were not technically trained for these jobs. There was a small steel operation in Atlantic City, uranium mill, phosphate mill going in. They are not ready for those. Therefore they feel it is going the other way around.

These border the reservation. The phosphate will take some of the ore from the reservation.

PREFERENTIAL EMPLOYMENT OF INDIANS

Secretary UDALL. What we have tried to do and I would be surprised because we have had pretty clear directives on this, that any time the Indian resources are being developed, that in any contract we make with people we have preference on Indian employment and we usually try to set up, to complement that, a vocational training program, to qualify people because we can't expect a contractor or business to accept people who are not qualified to hold jobs.

We may have slipped up here but I will be glad to check into it.

Senator MCGEE. Their feeling, in very large measure, stems from the fact that they are surrounded by this sort of thing now off the reservation, that their young fellows can't get employment in these plants because they have not had the training. So this would not be necessarily or primarily tied directly to a reservation development so much as to the problem of getting jobs for their young men.

STATE WATER RESEARCH INSTITUTE FUNDING

If I may go back, Mr. Chairman, just a couple of paragraphs there because of a question I have—you slipped into the reservation out of the water before I could catch you—but I was struck with the figure that you said you were asking for for these 50 States. It seemed to me it was like between $2½ or $3 million for the remaining.

Secretary UDALL. That is the supplemental. The figure for fiscal 1966 is $4.2 million I believe, exclusive of administration.

Senator MCGEE. This will be for water resource exploration, really, experimentation and projection of State needs on the institutional level?

Secretary UDALL. Senator, actually it is going to work this way. Each of the States will set up what we call a water research institute.

Now a few States already have this and a few have programs they have not pulled together. But we are trying to produce, in a State, a focus for water research in that State so that they can pull it together and they can tackle the problems that are peculiar to that State although we are going to do a coordinating job, too, to see that in research projects there is as little overlap as possible.

COORDINATING OFFICE AND STATE PARTICIPATION

This is the real new thing that we are doing. But the universities will lead out on this. We have a new office we have set up to coordinate it. This is functioning very well. But it will end up with the universities, usually the land-grant universities in each State presenting a plan to us if they don't already have one for an institution and matching money with us.

We think it will raise the whole level of water research because my science adviser and the President's science adviser tell me that if there is any area in terms of scientific research where we are in danger of ending up short of experts—we are already short of experts—it is in hydrology and water research.

Senator MCGEE. The reason I selected the figure or wanted to ask you about the figure was that we are thinking about 50 States and then the outlying provinces, it seemed like an inconsequential figure. I don't suppose you often get from the Congress a suggestion that you may be going too slowly on this or you may be too modest in your request, but I have not quite recovered from the impact of water study that the select Senate subcommittee undertook under the direction of the late Senator Bob Kerr.

We were literally shocked out of our wits by the scope of the study which suggested that within the next 6 or 8 or 10 years somebody was going to have to spend in the neighborhood of $30 to $40 billion on this kind of thing if we were going to keep even with our water needs by 1970.

I was really taken with the modesty of the figure without understanding its direct application in each of these institutions rather than with its great size.

Secretary UDALL. Senator, let me say this, and I am conversant with the points you make. I regard this as something which is a direct outgrowth of the study of Senator Kerr's committee—$1 million will be matched and so you have twice that amount of money. Particularly for a State that is beginning, this is a good beginning.

AUTHORIZATION IN EXCESS OF PRESENT PROGRAMS

The authorization involved in the legislation is larger than this. I think there is probably an anticipation that the program will move up to higher levels but this is our starting point.

I think that—particularly where your universities have got to begin and set up a program—that this is adequate for the present. This is my own feeling.

Senator McGEE. I hope you don't address too much of your program to the level of what you think you might get past the Congress.

I hope you let the Congress make that decision and you not make it too low. That is my only concern, and I think should be the concern of you gentlemen. I think it will cost a whale of a lot of money. I don't think we have any alternative.

INTEGRATION OF INDIAN AND WHITE SCHOOLCHILDREN

Senator YOUNG. Mr. Chairman, I would like to pursue further the subject that Senator Mundt brought up of educating Indian children off the reservation. In at least four cities in North Dakota bordering the reservations, as do White Shield, New Town, Parshall, and Dunseith, half or more than half of the children in the schools are Indians.

I have yet to hear a single complaint from the white people because of the Indians attending these schools. In fact they want to take in more of them. Unfortunately in many cases these little towns don't have a sufficient tax base to provide the school facilities.

INTEGRATED SCHOOL FUNDING

There isn't any authorizing legislation, is there, which permits the Congress to appropriate funds to help these small cities off the reservations construct new schools?

Secretary UDALL. Yes, Senator, we are under this program, we do pick up the Federal part of the construction check when we have special authorization. In fact, both in terms of school construction if that is necessary and in terms of the on-going, I mean the payments for operation and teachers, the Johnson-O'Malley Act is used.

Senator YOUNG. This is far from adequate to meet our needs. We have not been able to use it to any great extent. I think in three cases this committee has gone along with additional appropriations to help build school facilities. I introduced a bill last year and again this year to authorize the Congress to appropriate greater funds. I wish you would look this over.

Secretary UDALL. Senator, I am not conversant with the particular problems in North Dakota but I would like to get a report to you from the States in advance of the time the Indian Commissioner testifies.

Senator YOUNG. The little town of Dunseith has only about 700 people. This committee provided funds to help them construct a new school building. Now over half the enrollment is Indian children. Their parents have no ability to pay taxes. This town wants to continue to take the Indian children but they can't provide the needed additional school facilities.

It seems too bad that the school districts who want to take these Indian children can find no way to finance the added load.

Secretary UDALL. I would like to say, too, I think one bonus we have gotten as a result of this program, is that it is possible to merge schools and have children attend together. I think some of the old indifference and hostility that has existed among some people has been rapidly disappearing. It has had a fine social effect.

Senator YOUNG. We just don't have that in my State and we have four reservations. I haven't had a single complaint from white people protesting attendance of Indian children at these schools.

Secretary UDALL. I am glad to hear that.

INDIAN RESERVATION INDUSTRIAL PLANTS

Senator MUNDT. Mr. Secretary, you mentioned the 25 industrial plants. Will you put a list in the record? Also indicate what is manufactured in each.

Secretary UDALL. Yes; I will be delighted to give you a summary of that.

(The information referred to follows:)

BUREAU OF INDIAN AFFAIRS

Industrial plants established on Indian reservations during fiscal year 1964

Name and location of company	Nearest reservation	Product line
Alabama Charcoal Co., Baron, Okla	Cherokee area	Charcoal.
Aleutian Development Corp., Unalaska, Alaska	Alaska	Fish products.
Brown, Rex, Lumber Co., Coram, Mont	Blackfeet	Lumber.
C. & S. Packing Co., Isleta Pueblo, N. Mex	Isleta Pueblo	Food processing.
Chippewayan Authentics, Inc., Belcourt, N. Dak	Turtle Mountain.	Decorative Indian, artifacts.
Dickson Electronics Corp., Phoenix, Ariz	Salt River	Electronic components.
Delores Wood Products, Inc., Cortez, Colo	Ute Mountain and Navajo.	Plywood.
DuPuis Bros. Lumber Co., Polson, Mont	Flathead	Lumber.
Golden Eagle Arts and Crafts, Macy, Nebr	Omaha	Play teepee.
Indianhead Moccasin Co., Webster, Wis	St. Croix	Moccasins, jackets, beaded articles.
Jicarilla Buckskin & Leather, Dulce, N. Mex	Jicarilla	Arts and crafts.
Jicarilla Lumber Co., Dulce, N. Mex	do	Rough lumber.
Kaiser Aluminum & Chemical, Inc., Gallup, N. Mex.	Navajo	Aluminum culverts.
Ketchikan & Northern Terminal, Ketchikan, Alaska.	Saxman Alaska, area.	Warehousing.
Nambe Mills, Nambe, N. Mex	Pojoaque Pueblo.	Accessories and tableware.
Northern Products Co., Naytahawash, Minn	White Earth	Sewing (stuffed animals).
Onamia Manufacturing Co., Onamia, Minn	Mille Lacs	Fabricated sheet-metal products.
Parker Textile Co., Parker, Ariz	Colorado River	Textiles.
Pitkas Point Cannery, Pitkas Point, Alaska	Alaska	Hand-packed salmon.
St. Maries Plywood Co., St. Maries, Idaho	Coeur d'Alene	Plywood.
San Tan Ranches, Inc., Gila River Reservation, Ariz.	Gila River	Agriculture and cattle feeding.
Sioux Dairy Cooperative Mission, S. Dak	Rosebud	Cheese.
Venride, Inc., New Town, N. Dak	Fort Berthold	Mechanical rides for children.
Von Canon, Paul L., Inc., Whittier, N.C	Cherokee	Wooden furniture.
Winston Industries, Louisville, Miss	Choctaw	Wood cabinets, dimension lumber.

U.S. RESPONSIBILITY TOWARD INDIANS

SECRETARY UDALL. As I say in my statement, one of the most solemn moral obligations that rests upon the Government of the United States is in our responsibility toward our Indian people—those whose ancestors, as Will Rogers once humorously quipped, met some of our ancestors at the boat.

In general, the treatment meted out to our original hosts has been a long and dismal spectacle.

But I do not come before you to recall sins. In this century, and especially during the past 35 years, we have recognized a special responsibility to help our Indian people attain maximum economic self-sufficiency and full participation in American life with equal citizenship privileges and responsibilities.

To realize these objectives, we must:

Improve educational opportunities available to all Indian children, youths, and adults;

Raise the percentage of Indian youths who graduate from high school to the national average as soon as possible, and see that more college scholarships and other forms of financial help are available to qualified Indian young persons;

Expand vocational and on-the-job training for Indian adults;

Encourage and assist establishment of small industrial plants on or near Indian reservations—where such development is economically feasible; and

Create new job opportunities by development of the natural resources potential of each Indian reservation.

COORDINATING TRAINING PROGRAM WITH OTHER DEPARTMENTS

Senator YOUNG. You are working out a training program with other departments of the Government?

Secretary UDALL. The Indians are included in the poverty program in some ways, Senator, because of our specific responsibility for Indians. Many of the programs, new programs, that are being carried out by the poverty program, we already are performing such services or functions.

The interesting things about our Indian communities, where the Indian communities are separate from the other communities is that there is no local government, there is no State government, there usually are no local voluntary organizations. The Federal Government is the whole show. So we do have a Federal responsibility. Under the community action phase of the poverty program, Indian communities are eligible and are applying in many instances for specific projects to care for a specific program.

PROCESSES OF INDIAN PROGRAMS DEVELOPMENT

Senator YOUNG. One of my complaints is that the only time I find out about these programs is when they are announced through political channels in my State. I had not expected it to be this way. I have been serving on this committee for years and I can't find out when new programs are developing.

The only time I find out about them is when training programs, work projects, and various other operations are announced in North Dakota. Who develops these programs?

Secretary UDALL. They are developed, initially, by the particular tribes working with the Indian Bureau. In the Indian Bureau we go to the window in the poverty program and argue the case for them and work it out. Maybe we need a better liaison with you, Senator.

Senator YOUNG. I would like to know a little more about what you are doing.

INDIAN TRIBAL RESERVATIONS AND REQUESTED ACTION AND YOUTH PROPOSALS

Senator MUNDT. Along that line it would be a help if you would also stipulate for the record the 31 Indian tribal groups and the kind of action proposals they have requested. Also list the 20 youth programs.

Secretary UDALL. We will try to give you a special report on that.

(The report referred to follows:)

BUREAU OF INDIAN AFFAIRS

JOB CORPS COMMUNITY ACTION PROGRAMS

Arizona:
- Ak-Chin Maricopa County
- Gila River
- Navajo
- Papago

Minnesota:
- Fond du Lac
- Grand Portage
- Leech Lake
- Mille Lac
- Red Lake
- White Earth

Mississippi: Choctaw

Montana:
- Crow
- Rocky Boys

New Mexico:
- Acoma
- Santa Clara
- Santa Domingo

New Mexico—Continued
- Tesuque
- Zuni

Nevada: Walker River

North Dakota:
- Fort Berthold
- Fort Totten

Oklahoma:
- Cherokee (eastern Oklahoma)
- Osage (Pawhuska)

Oregon: Warm Springs

South Dakota:
- Crow Creek
- Pine Ridge

Utah: Uintah and Ouray

Washington:
- Quinault
- Swinomish
- Tulalip

Wisconsin: Lac du Flambeau

JOB CORPS NEIGHBORHOOD YOUTH PROGRAMS

Arizona: San Carlos

Kansas: Haskell Institute

Mississippi: Choctaw

Montana:
- Blackfeet
- Northern Cheyenne

Nebraska: Omaha Tribe

New Mexico:
- Fort Wingate (School)
- Laguna

North Dakota: Fort Yates (Standing Rock)

Oklahoma:
- Anadarks (High School)
- Cherokee (Eastern Oklahoma)
- Chilocco (School)
- Creek Tribe (Tulsa)
- Fort Sill (Lawton)
- Osage (Pawhuska)

South Dakota:
- Cheyenne River
- Flandreau
- Pine Ridge
- Sisseton
- Todd County (Mission High School)

EDUCATION AND VOCATIONAL TRAINING REQUIREMENT

Secretary UDALL. Education, of course, is basic in all this effort. It opens the way for the individual, wherever he may choose to live, to find a satisfying way of life. But I must, in candor, acknowledge that many Indian people require more than education to solve their problems.

We, therefore, must devise programs that will equip Indian people to make their way in either place they may choose to live—either off the reservation, in the occupations the rest of us engage in, or on the reservation in occupations that provide a living in health, decency, and self-respect.

The net increase of funds requested will enable us to push forward with programs in operation or in process of development. To keep

abreast of the increasing school-age population on Indian reservations, the Federal Indian high school system must be enlarged by 8,000 seats between 1965 and 1970.

We have caught up with the backlog. Now we have to stay abreast. Adult vocational training has been steadily on the increase in response to demand by the Indian people. During fiscal year 1964, 3,886 single persons or heads of families were furnished either institution or on-the-job training. Funds requested for fiscal year 1966 will provide such training for 5,421 single persons and heads of families.

Reservation Industrial Plants

In other words, we are asking for an increase in this program in the hope that some of it will go to your Wyoming problem, Senator. Twenty-five industrial plants were established on Indian reservations during fiscal year 1964. When fully operating, these plants will employ more than 1,500 Indians.

Senator Hayden called to my attention, recently, where one of the large clothing manufacturers proposed to locate one plant on the Navajo Reservation that would employ 800 people. That one plant, if that goes through, will be more than half the total that we achieved last year.

Community Action and Youth Program

The Economic Opportunity Act of 1964 offers Indian people an opportunity to benefit from each of the programs authorized. Our efforts to encourage Indian people to participate have had some success. Thirty-one Indian tribal groups, so far, have submitted community action proposals.

About 20 proposals for neighborhood youth programs have been submitted to the Department of Labor and there have been many requests for Volunteers in Service to America.

Public Land Management

Congress took a great step forward last year toward improvements in public land management. Public Law 88–606 authorized establishment of the Public Land Law Review Commission to make a comprehensive review of existing public land laws. That study will provide the basis for legislative proposals designed to modernize and rationalize this complicated body of law.

As interim policy, Congress also decreed that "the public lands of the United States shall be retained and managed or disposed of in a manner to provide the maximum benefit for the general public. Furthermore, Public Law 88–606—pending the implementation of recommendations to be made by the Commission—directs the Secretary of the Interior to classify the public lands in order to provide for their disposal or interim management under principles of multiple use and sustained yield of products and services.

The 1966 budget for the Bureau of Land Management provides for:

Increased investment in resources conservation and development;

Increased direct participation in Public Law 566 watershed rehabilitation projects;

A pilot program of wildlife habitat rehabilitation; and

A program to halt deterioration of marginal lands in the arid West.

These estimates reflect the renewed vigor being devoted to management of the Nation's public lands as a vital resource. In short, this is multiple use in action.

Particular attention will be given to our parks, our lakes and rivers, our seashores, and our forests in preserving them for the enjoyment of present and future generations. Never before in history have we had the opportunity that now exists for enhancing the beauty of America, and, at the same time, providing the recreation resources required to meet the needs of the public.

MEETING RECREATION NEEDS

We have the support of a conservation-minded Congress to assist and encourage this effort. We have the Bureau of Outdoor Recreation to promote coordination of Federal, State, local, and private efforts, we have the land and water conservation fund to facilitate the financing of necessary programs; and we have an aroused and interested public to insure that the job gets done. We shall look to the States and local governments and to private interests to assume an increasingly heavier load in meeting the recreation needs.

Visitations to Federal recreation areas have doubled during the past decade and will surely double again before another 10 years have elapsed. The Federal Government must develop areas of national significance and insure that these be well managed.

We must assess the recreation potential of our river basins—preserving some sectors of our wild rivers in their natural free-flowing state. We must provide scenic roads for that ever-growing company of people who, on vacation and weekends, find leisurely enjoyment of natural beauty preferable to maximum speed in travel by automobile.

National Parks Visitations

Our national parks continue to attract large numbers of people. In the 4 years I have been Secretary of the Interior, annual visitations have increased 42 percent—from 72 million visits in 1960 to 102 million visits in 1964. Visitations in 1966 are expected to reach the 117 million mark. It took 58 years to witness the first billionth national park visit; our second billionth is expected in less than 10 years. By 1970, an estimated 214 million Americans will be pressing for places in the outdoor park lands of this country. Our national park system must be prepared to accommodate its fair share.

The 1966 budget provides additional funding needed to operate and maintain expanded or newly developed areas and facilities, and to accommodate an additional 7 million visitations. Land acquisition funds amounting to $26 million are budgeted for the Park Service from the land and water conservation fund. Of that total, $13.6 million is for acquiring property in park areas recently authorized for establishment by the Congress.

Land, Mineral, and Water Resources

Wise development and use of land, mineral, and water resources is dependent upon adequate resource information. The investigation

work of the Geological Survey provides basic information avidly sought by those responsible for management of these resources.

Alaska Earthquake Disaster

The year 1964 will long be remembered for the Alaska earthquake disaster. Nearly half of the increase requested for the Geological Survey provides for fundamental research in seismology—to increase our understanding of earthquake phenomena, and thus to develop methods of earthquake prediction. It also will provide information needed to improve the design of earthquake-resistant structures.

Wilderness Act

The Wilderness Act (Public Law 88–577) establishes a National Wilderness Preservation System to insure retention of certain lands in their natural condition for the future use and enjoyment by American people of present and future generations. The act directs that the Secretary of the Interior shall survey such areas in a planned, recurring basis to determine the mineral values that may be present. The act further directs that these surveys be made by the Geological Survey and the Bureau of Mines. Funds for those two bureaus to begin such work are included.

Water-Data Collecting

Central responsibility for coordinating Federal water-data collecting activities has been assigned to the Geological Survey. Work to coordinate the efforts of more than 30 Federal agencies has begun. This will be expanded to include appropriate State and non-Federal organizations.

Junk and Junkyards

Each year approximately 5 million tons of iron and steel in old auto bodies are cast aside by the American public. An increase of funds is requested for the Bureau of Mines to develop means for economic use of this "junk." As such uses are developed, we will obtain a double reward—reuse of materials now being wasted, and removal of eyesore junkyards that now blight the landscape in so many places.

Bureau of Mines

Other increases included for the Bureau of Mines are for experimental "in situ" retorting of oil shale, expansion of research on ground support, stabilization, and control in metal, nonmetal, and coal mines, and on rock disintegration; development of materials-handling system for recovery of underwater deposits on the Continental Shelf of the west coast; and automation of statistical survey data processing.

Helium Conservation

An increase of $12.5 million in contracting authority is requested for helium conservation. By raising the annual authorization to $60 million it will be possible to conserve about 65 billion cubic feet of helium that would otherwise be lost to the atmosphere. This takes account of our helium requirements as of 1985 and beyond.

FISHERY PRODUCTS

The oceans produce fishery products that are important to the welfare of our own Nation and increasingly so to the rest of the world. As land-produced food sources come under heavier pressure to meet the food requirements of the world, even larger demands on fisheries will develop.

American fishermen are feeling the economic impact of the rapid expansion of foreign high seas fisheries. Many areas, previously used exclusively by American fishermen, are now being exploited by foreign fishing vessels. It is essential that we have a commercial fisheries program that will support wise use and development of high seas fisheries resources, and protect the interests of the American fishermen in those resources.

Commercial Fisheries Research and Development Act

The Commercial Fisheries Research and Development Act of 1964 (Public Law 88–309) authorizes cooperation with the States in projects designed for research and development of the commercial fisheries resources of the Nation. Two million dollars of Federal funds are included in this budget to supplement State funds that will be made available.

Projects approved under this legislation must be designed to promote the economic health of the domestic commercial fishing industry. Such projects should improve the productivity of fishermen and of fishery-products processors, expedite diversification of the industry, and lead to increased consumption of domestic fishery products.

U.S. Fishing Fleet Improvement Act

Another significant item is the funding authorized last year by the U.S. Fishing Fleet Improvement Act (Public Law 88–498) to provide a Federal subsidy for the construction of fishing vessels in U.S. shipyards. A supplemental appropriation of $2.5 million has already been provided for fiscal year 1965. It is proposed that the program be increased to $5 million for fiscal year 1966 to assure the competitive position of American fishermen—now confronted with strong foreign competitors. This will provide for the construction of about 50 advance-design vessels. The domestic industry is otherwise at a disadvantage in world competition—due to the fact that it is required by law to utilize domestically built vessels which cost substantially more than those constructed elsewhere.

Fish Protein Concentrate

The Bureau of Commercial Fisheries laboratory has successfully developed a chemical extraction process for the commercial production of fish protein concentrate. Technical and economic information concerning that development will be made public within the next several months. Based upon the evident interest in this development, we are confident that one or more companies will soon be applying these findings on a commercial scale. The impact of such applications will be twofold:

A highly nutritious low-cost protein food supplement will be available, and

The domestic fishing industry will have a new and expanded outlet for presently underutilized and nonutilized fish.

Fish and Wildlife Resources

The fish and wildlife resources of our country represent a great natural heritage. However, the encroachment of civilization on natural habitat has had its impact on these resources and in some instances extinction has resulted. While this continent was being explored and developed, man's major impact was the taking of fish and game for food. The supply was exceedingly abundant for some time but depletion of one species after another was becoming evident a hundred years ago. Fish and wildlife still represent a considerable source of food but, even more important, they afford the highly valued pleasures of hunting and fishing and of observing wildlife and fish in their natural habitat.

The programs of the Bureau of Sport Fisheries and Wildlife are designed to assure preservation of sufficient fish and wildlife resources to meet future public need.

Migrating Waterfowl

Funds requested will provide for acquisition of approximately 232,500 acres of land for use by migrating waterfowl. Some $5 million will be available from the sale of duck stamps along with an advance of $7.5 million to the migratory bird conservation account.

American Samoa

Provision has been made in these budget estimates for continued improvement of the American Samoa education system, medical services, essential public works, communications, and economic development.

Guam

The Guam rehabilitation program will be continued. Funds are included for expanded educational and juvenile care facilities, for village development and urban renewal, for sewer, water, power, and telephone facilities, and for the initial increment in the development of a commercial port facility.

Trust Territory of the Pacific Islands

The Trust Territory of the Pacific Islands is administered in accordance with terms of a trusteeship agreement with the United Nations. We have provided for continuation of effort to promote viable economic and political development, improve community facilities and services, and to improve the health and well-being of the Micronesian people.

Alaska Railroad

The Alaska Railroad suffered heavy damage in the earthquake and seismic wave disaster of last March 27. The cost of replacing the minimum facilities required for efficient rail service was placed at $27 million—an estimate which has proved remarkably accurate. In the

Deficiency Appropriation Act of 1964, an appropriation of $20 million was made. The present budget proposes an additional $3 million for this purpose. Thus, it is contemplated that the balance of rehabilitation costs, some $4 million, will be absorbed out of past earnings which had been retained in the railroad's revolving fund for operating cash and equipment replacement purposes.

As the budget document indicates, the post-earthquake revenue prospects for the railroad are highly uncertain and, on the basis of experience to date, quite unfavorable. Although the railroad has requested no appropriations to cover operating deficits for more than a quarter of a century, it seems apparent that we will have to revisit the whole question of its financial stability in the very near future.

Effect of Economic Opportunity Funds

Chairman Hayden. Thank you, sir.

I presume that the funds available to you for operation under the Economic Opportunity Act are contained in a separate budget. However, will you please outline for the committee the effect that availability of these funds and the necessity to perform the operations under the act has had on the regular activities of your Department?

Secretary Udall. Yes. Let me give you a special report on that, Senator.

Chairman Hayden. All right, will you please do that?

(The report referred to follows:)

Economic Opportunity

Office of Economic Opportunity Department of the [Interior Job Corps conservation Centers:

PROGRAM PLANS

Present plans of the Office of Economic Opportunity provide for the establishment of 44 Job Corps conservation centers by the Department of the Interior in fiscal year 1965. In addition, 12 camps will be under construction to bring the total to 56 operating units in fiscal year 1966. Approximately 5,900 enrollees are planned to be in training in Interior camps by June 30, 1965. This will be increased to 7,500 in fiscal year 1966. Approximately $39 million will be allocated to the Department of the Interior for fiscal year 1965.

Tentative program distribution

	Number of camps	
	Fiscal year 1965	Fiscal year 1966
Bureau of Indian Affairs	11	14
National Park Service	9	12
Bureau of Land Management	8	10
Bureau of Reclamation	9	11
Bureau of Sport Fisheries and Wildlife	7	9
Total	44	56

DISTRIBUTION BY STATES

The Office of Economic Opportunity has limited camp distribution to not more than two or three camps per State to assure the best possible geographic spread.

ENROLLEE PRODUCTIVITY

Approximately 50 percent of the enrollee's time will be devoted to education and training. In addition, camp custodial duties, sickness, leave, etc., will account for an estimated 10 percent leaving approximately 40 percent of his time for application to conservation work. However, since we will be dealing with young, untrained individuals who are to be given as wide a work training exposure as possible, actually productivity probably will be about one-third of a man-year per enrollee. This will amount to the equivalent of about 2,000 man-years of conservation effort during fiscal year 1966.

CONSIDERATION IN 1966 BUDGET

It was recognized that some conservation benefits would be realized from the Job Corps operations. Although it was given general consideration in the makeup of the budget, specific identification could not be made since the scope and location of the work was not fully known at the time.

APPROVED CONSERVATION CENTERS (AS OF FEB. 8, 1965)

State	Name	Design size	Bureau
Arizona	Winslow	200	Indian Affairs.
	San Carlos	200	Do.
California	Lewiston	200	Reclamation.
	Toyon	200	Do.
Colorado	Collbran	100	Do.
Idaho	Mountain Home	200	Land Management.
Illinois	Crab Orchard	100	Sport Fisheries.
Kentucky	Cumberland Gap	100	Park Service.
	Great Onyx	200	Do.
Maryland	Catoctin	100	Do.
Massachusetts	Wellfleet	100	Do.
Minnesota	Chippewa Ranch	100	Indian Affairs.
Missouri	Mingo	100	Sport Fisheries.
New Mexico	Mexican Springs	200	Indian Affairs.
	Eight Canyon	200	Do.
New York	Iroquois	100	Sport Fisheries.
North Carolina	Oconaluftee	100	Park Service.
Oklahoma	Treasure Lake	100	Sport Fisheries.
Oregon	Tilamook	200	Land Management.
	Malheur	200	Sport Fisheries.
	Fort Vannoy	200	Land Management.
Utah	Price	100	Do.
Washington	Fort Simcoe	200	Indian Affairs.
	Neah Bay	100	Do.
West Virginia	Bolivar Heights	100	Park Service.
Wyoming	Casper	100	Reclamation.
Total (26)		3,800	

CONSOLIDATION AND CLOSING OF NATURAL RESOURCES FACILITIES

Chairman HAYDEN. In the analysis of "The Federal Program by Function," provided to the Congress in support of the President's budget, the following statement appears in the section entitled "Natural Resources":

> Savings in operating and personnel costs will be effected in 1966 by the Department of the Interior through closing of some facilities and consolidation of others and through disconcontinuing some less urgent activities.

Will you please explain to the committee in some detail the action which you propose to take to implement this statement?

Secretary UDALL. All right. I should like to have a special statement for you on that.

Chairman HAYDEN. Will you put that in the record?

Secretary UDALL. Yes.

(The statement referred to follows:)

Actions Taken To Effect Cost Reductions

I should like to advise the committee that we have made available an information sheet to each Senator and House Member most concerned with the actions that were proposed to be taken. Copies have also been made available to your staff of the same material since they had a direct bearing on the budget now before you. I will briefly highlight the actions taken and should you have any detailed questions the bureaus will be prepared to discuss them with you. The actions by bureaus are as follows:

Bureau of Land Management

Reduce State offices by June 30, 1966, for a reduction in employment of 88 positions and a savings of $853,000 in fiscal year 1966—ultimate savings of $1,065,000.

Bureau of Indian Affairs

Reduction in area offices and other organizational changes for a reduction of 483 positions and savings of $1,268,000 in fiscal year 1966—ultimate savings of $3,418,000.

National Park Service

Reduction in regional offices and consolidation of financial operations resulting in a reduction of 200 positions and savings of $480,000 in fiscal year 1966—ultimate savings of $1,430,000.

Office of Territories

Acceleration of termination of Virgin Islands Corporation by June 30, 1965, for a reduction of 90 positions and $300,000 savings annually. Installation of educational television in American Samoa for a savings of 55 positions and $389,000 annually.

Geological Survey

Curtailment—Connally Hot Oil activities, transfer Office of Minerals Exploration to the Geological Survey, program reorganizations, and closures for a reduction in employment of 66 positions with savings of $373,000 in 1966—ultimate savings of $611,000.

Bureau of Mines

Modification and closures of field installations for a reduction of 121 positions and savings of $640,000 in fiscal year 1966—ultimate savings of $1,195,000.

Bureau of Commercial Fisheries

Modification and closure of field installations for a reduction of nine positions and savings of $172,000 annually.

Bureau of Sport Fisheries and Wildlife

Closure of 9 hatcheries and some refuges and other program changes for a reduction of 94 positions and annual savings of $856,000.

Office of the Solicitor

Field office closures and reduction of six employees and a savings of $85,000 annually which is partially offset by the establishment of an eastern office for an increase of three employees at a cost of $33,000 annually.

Summary

To summarize the effect of these actions would mean a reduction of 1,209 number of positions at a savings of $5,383,000 fiscal year 1966, with an ultimate savings of $9,488,000.

Job Corps Conservation Center Sites

Chairman Hayden. I have seen a copy of a letter you sent last fall to our mutual friend, Senator Giss, of Yuma. In it you indicated that you were studying sites which might be suitable for conservation camps in connection with the lower Colorado River land use plan. Have these studies been completed; and, if so, what are the results?

Secretary Udall. Senator, let me explain that to you. We have been looking at and are still studying the possibility of a site to do

conservation work in the Yuma County area where there are very many problems.

The Office of Economic Opportunity people, however, have made one basic decision which probably is correct in terms of the overall program and that is in order to spread the work out countrywide among the States it is their feeling that wherever possible that we should establish these Job Corps conservation centers in as many different areas of the country as possible and that there is a built-in limitation for each State and, as far as my Department is concerned, that we will have no more than two camps.

We have two already earmarked for Arizona, in fact one of them is the second one at this installation near Winslow. It will be an Indian Bureau camp, and it may be that we are not going to be able to do things like the problem you have identified here unless the program is expanded further.

We are going ahead. We have about 33 or 34 of these Job Corps conservation camps which have already been approved and are ready for action; we are working on some of them.

We expect to have 56 that will be in operation probably before I testify here again. It may be that Congress, the administration, in reviewing the program will decide to expand it a year from now; I don't know. But unless it is expanded we are not going to be able to have more than two or three camps in any one State.

Fish Hatcheries Proposed for Closing

Chairman Hayden. On February 2, I wrote a letter to you asking your assurance that none of the nine hatcheries proposed for closing would actually be closed prior to the time this bill is reported to the Senate. I have not yet received a reply to my letter. Can you give me the assurance that I seek?

Secretary Udall. Senator, this is of course a problem that I knew this committee was interested in. Let me simply say this to the committee. We want to consult with and work with the committee on this problem. We are not proposing to move immediately.

We would like to have you review the actions that we propose to take. The significant thing about this is the interest that conservation groups and conservation centers and Congressmen have always taken in fish hatcheries. The approach we took on this is that I asked the Assistant Secretary in this area and the Sport Fisheries and Wildlife people to review their programs just as we are reviewing all our other programs, to determine whether there were any facilities that were obsolete or where conditions had changed which made these no longer economical to operate.

Justifications for Proposed Closures

We did single out some. We would propose to act on these and we would certainly expect this committee to want to review them. But I wanted to just give the committee some idea of what the reasons are for actions of this kind, to summarize some of the specific reasons why some of these hatcheries we think should be closed on economic grounds.

I might say also to the committee that one of these was for all practical purposes closed by the President, himself. One day when

I was with him last November; he went to give a speech at his alma mater, Southwest Texas College in San Marcos, Tex.

There was an old fish hatchery that was there. It is right next to the campus. The facilities are very run down and actually the campus needs the 12 or 15 acres to expand the campus. The President said it looked to him like this fish hatchery with which he was very familiar, ought to be closed.

On inquiring I found from the president of the university that they were most anxious to have the land and that we could fulfill the purpose of providing the fish at another installation, reasonably nearby. And here is an example of how we have gone about this.

But let me read to you just a summary of what has been given to me as a report on some of these facilities. This is under the heading, "Reason for the Action Taken."

Closure of the station is being effected because of inadequate water supply and associated problem of undesirable water temperature.

Conditions have changed. Many of these fish hatcheries were located 30 or 40 years ago. You no longer have the ideal conditions that you had. Here is another example:

Closure being effected because of increasingly serious problems resulting from inadequate water supply.

Generally poor conditions of rearing ponds and impracticability of rehabilitating facilities.

Closure of station is being effected because of small and diminishing water supply. Facilities are old and deteriorated. Due to the water supply situation rehabilitation is impractical.

Consolidation in this instance of national fish hatchery operations which are presently conducted at three locations within the particular State. There is one in New Mexico.

Closure of station being effected because of inadequate water supply both as to quantity and quality.

In most of these instances we think we can, with the more modern facilities that are available, some of which this committee has authorized and we have built in the last few years, supply the fish that are needed through these other facilities and therefore we are proposing in most instances to accomplish economies by closing without actual detriment to our own going program to carry out the point.

Chairman HAYDEN. You understand that individual Senators are very interested in hatcheries in their States?

Secretary UDALL. I can, indeed.

SENATORIAL REVIEW OF PROPOSALS PRIOR TO CLOSING OF HATCHERY FACILITIES

Chairman HAYDEN. It would be proper, I think, if you could assure me that you would not actually close these facilities until we know something about it.

Secretary UDALL. Certainly, Senator, I think you ought to have every opportunity to review it. We will not take action until the committee has reviewed it and we have consulted with you on it. I naturally would not want to have my hands tied completely on this because I have a responsibility to the President to carry out my own duties.

Chairman HAYDEN. I understand that. I think you will find the Senators very reasonable when the reasons are shown. There are questions raised of course by their constituents.

Secretary UDALL. We want to give you every opportunity to review it. I hope we can justify the action we propose to take.

Chairman HAYDEN. Thank you. Are there any further questions.

Senator MUNDT. I am glad to hear the Secretary say what he has said. I think it is a more constructive attitude than we have had in the go-around on proposed closures in other departments.

In the main these installations were created by congressional action in the first instance and I think it is proper that the Congress should be consulted when they are closed. Unquestionably, changing conditions do require closing some installations. It seems that this should be a partnership approach, as you have indicated it will be, instead of members reading in the paper an installation has been closed without an opportunity to pass on it.

Secretary UDALL. I think, Senator, you are quite right. This committee has in many instances over the years taken the initiative in these matters and I am very familiar with these cases.

Our new Director, John S. Gottschalk, a very able young man, you can put on the hot seat and have him justify his actions.

DEPARTMENTAL PERSONNEL STRENGTH

Senator MUNDT. On your employment figures—I have been going over them. It seems that there is a difference between what you show and what the budget shows. I am just wondering if maybe you are using a different yardstick from the Budget Bureau. If my analysis is correct, you said that you had 69,712 employees as of June 30, 1964.

The budget on page 47 shows 69,867. It is not a very material difference.

Secretary UDALL. I will have to call on my experts on that if I may.

Mr. LARSON. The difference of 155 are Fish and Wildlife agents that were excluded from the employment ceiling at that time.

OFFICE OF COAL RESEARCH PROGRESS

Senator MUNDT. It is not very material. I was curious why both would not have the same figure in that regard. On page 14 of your statement which I did not read, Mr. Secretary, you get into a matter I want to discuss a little bit. In this connection I would like to say that we lots of times criticized or have been unhappy about what we call slow bureaucratic action. I would like to point out that in the Office of Coal Research we have some very gratifying evidence of fast work. I quote from the Department of the Interior and related agencies appropriations bill report for fiscal 1964 where on page 14 we point out that $375,000 was appropriated for planning and engineering a pilot plant in South Dakota for the production of gas from lignite and $1 million for development of a plant necessary to a gasification project, Office of Coal Research.

I just received this morning a letter from Mr. Larson, Chief of the contract section of the Office of Coal Research, in which he has some

very encouraging information. New as that project is, they have been able to come up with some very constructive and very encouraging information. Last year you will recall we added $500,000 additional to continue this work. It certainly has exceeded my fondest expectations. Nobody can call it bureaucratic lethargy because this is not very long since we started the project.

One paragraph of Mr. Larson's letter says:

> The project developed in the feasibility study estimate that pipeline gas from lignite could be delivered for about 2 cents per million B.t.u.'s less than competitive natural gas if the project is brought to a successful conclusion.

I think this is gratifying progress. I want to congratulate the Department on its study.

Secretary UDALL. It certainly indicates that your own hunch on this was a good one.

I am glad to say there is nothing like secretarial interest to cure lethargy.

Senator MUNDT. This is one we kind of forced down your throat by congressional action but you went to work with good speed and we appreciate it.

Secretary UDALL. Thank you.

Senator MUNDT. That is all, Mr. Chairman.

CORPS OF ENGINEERS AND BUREAU OF RECLAMATION RECEIPTS COMPARED

Chairman HAYDEN. Mr. Secretary, you mentioned the fact that the total receipts of the Bureau of Reclamation were very satisfactory and now we have spent a great deal of money on the Corps of Engineers. How, percentagewise and in total, would the receipts of the Corps of Engineers compare with the receipts of the Bureau of Reclamation?

Secretary UDALL. I would have to ask one of my experts here to give a very concise reply on that. I do know, and this is too seldom remarked, Senator, that of course under very strict scheduling on contracts for repayment the big bulk of Reclamation's projects repayment is made. Taking Corps projects generally, far more of them are nonreimbursable. Naturally a large dam which has a hydroelectric installation is repaid in accordance with the usual practice. But there is a far larger component of nonreimbursable under the Corps program.

Chairman HAYDEN. One of the reasons why the cost of Bureau of Reclamation projects was required to be reimbursable was that we did not have votes enough in the U.S. House of Representatives to make it conform to the process followed by the Corps of Engineers. There were too few of us in the West who were interested in reclamation, and we were forced to make it a reimbursable program. There is, as you say, no reimbursement in a great many instances for projects constructed by the Corps of Engineers.

I shall appreciate it if you will furnish information to me showing the total payments and the total receipts by these two agencies.

Secretary UDALL. I would be very much interested myself, and I will be glad to get them for you.

INTERIOR DEPARTMENT SHARE IN ALASKA EARTHQUAKE REHABILITATION FUNDS

Senator MUNDT. Regarding the request for $3 million for the Alaska Railroad, it seems to me we have appropriated all together about $100 million for this earthquake rehabilitation in different congressional bills. What is the status of the railroad repairs?

Secretary UDALL. I would like to give you a special report on this, Senator. In the beginning one of the main items we had did concern the Alaska Railroad. This is the lifeline of the State connecting Fairbanks and Anchorage. I think it has been a very successful operation over the years.

But they tell me our overall program cost has been $25 million. I would like to say too that it has been our observation, I think, the Alaska earthquake rehabilitation has been a model of action by the Federal Government working with the State people to restore a disaster.

Senator MUNDT. Is it your feeling that this $3 million you are now asking will finish this rehabilitation program?

Secretary UDALL. Yes, sir; I think this is the last component.

SUBCOMMITTEE ADJOURNMENT

Chairman HAYDEN. Are there any further questions? If not, the subcommittee will stand adjourned until 10 a.m., tomorrow, to hear the Bureau of Land Management.

Secretary UDALL. Thank you, Mr. Chairman.

(Whereupon, at 11:10 a.m., Monday, February 15, 1965, the subcommittee adjourned, to reconvene pursuant to call, at 10 a.m., Tuesday, February 16, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

TUESDAY, FEBRUARY 16, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Chairman Hayden, Senators Byrd, Mundt, and Young.

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

STATEMENTS OF CHARLES H. STODDARD, DIRECTOR, BUREAU OF LAND MANAGEMENT; ROBERT E. WOLF, ASSISTANT TO THE DIRECTOR; JAMES P. BEIRNE, ASSISTANT DIRECTOR, ADMINISTRATION; MARK B. WELT, CHIEF, DIVISION OF FINANCIAL MANAGEMENT; EDWIN ZAIDLICZ, CHIEF, DIVISION OF RESOURCE PROGRAM MANAGEMENT; CHARLES E. REMINGTON, CHIEF, DIVISION OF ENGINEERING; AND JOHN E. DAWSON, BUDGET OFFICER

1966 BUDGET ESTIMATES

Chairman HAYDEN. The subcommittee will come to order.

For consideration this morning the committee has before it the budget estimates of the Bureau of Land Management for fiscal year 1966.

I will include in the record a table showing receipts to the Bureau of Land Management by sources, and another table showing the distribution of these receipts to the various States during fiscal year 1965.

In addition, I will include in the record the highlight statement submitted with the budget estimates.

(The information referred to follows:)

Receipts by Sources

The following table shows actual receipts of the Bureau of Land Management for fiscal years 1962, 1963, and 1964, and the estimated receipts for 1965 and 1966:

	1962	1963	1964	1965	1966
Sales, public lands and materials	$3,581,482	$3,382,561	$3,169,208	$3,400,000	$3,450,000
Fees and commissions	2,849,944	3,004,406	3,748,197	3,500,000	3,300,000
Mineral leasing	117,062,197	118,562,815	122,245,697	128,850,000	132,579,000
Mineral leasing, Outer Continental Shelf	11,612,151	366,814,447	16,491,410	108,000,000	286,350,000
Grazing fees	2,780,252	4,027,587	4,405,975	4,615,000	5,012,000
Right-of-way leases	203,575	256,598	378,057	370,000	375,000
Timber sales	34,735,480	33,628,924	47,154,505	43,950,000	38,080,000
Miscellaneous receipts	692,421	1,015,322	1,458,537	1,500,000	1,500,000
Total	173,517,502	530,692,660	199,051,586	294,185,000	470,646,000

Allocation of Bureau of Land Management Receipts to States, 1964

State	Sales of public land and timber	Mineral leases and permits	Taylor grazing leases	Taylor grazing districts	Other	Total
Alabama	$138	$810				$948
Alaska	10,646	8,992,395				9,003,041
Arizona	9,901	244,570	$33,143	$17,416		305,030
Arkansas	45	88,023				88,068
California	65,640	3,041,904	54,338	7,574		3,169,456
Colorado	6,673	3,486,097	10,765	17,133		3,520,668
Florida	53	116				169
Idaho	14,304	429,659	9,978	31,524		485,465
Ohio	8					8
Kansas		149,418	36			149,454
Louisiana	759	190,348				191,107
Michigan	56	2,987				3,043
Minnesota	137					137
Mississippi	174	8,694				8,868
Missouri	14					14
Montana	11,074	2,027,560	28,778	21,644	[1] 54,864	2,143,920
Nebraska		2,497	161			2,658
Nevada	26,123	309,476	8,804	56,200		400,603
New Mexico	18,594	9,763,262	8,441	47,630	[1] 2,111	9,840,038
North Dakota	68	187,275	2,145			189,488
Oklahoma	2,271	76,764	335			79,370
Oregon	51,553	2,852	17,261	24,771	[2] 21,324,907	21,421,344
South Dakota	198	148,904	13,778			162,880
Utah	2,416	3,637,662		39,131	[1] 401	3,679,610
Washington	1,360	3,904	5,362			10,626
Wisconsin	49					49
Wyoming	7,223	14,697,596	72,281	39,878		14,816,978
Total	229,477	47,492,773	265,606	302,901	21,382,283	69,673,040

[1] Executive Orders 10787, Nov. 6, 1958, and 10890, Oct. 27, 1960, from grazing.
[2] From O. & C. lands, $21,136,029; Coos Bay Wagon Road lands, $188,878.

Highlight Statement

Management of the public lands has passed a turning point of major significance in the last few months. Traditionally a kind of custodial management of the public lands pending future determination of their disposition or possible retention was all that was expected of the Federal land manager. Increasingly Congress and the public have recognized that this attitude was not consistent with the full use of these lands and their resources for national benefit. A program for positive conservation and management of much of the land, combined with orderly, selective disposal of tracts to meet modern-day needs, has been emphasized. Now with passage of major new legislation management of the public lands is on its new course.

The Congress has declared it to be its policy "that the public lands of the United States shall be (*a*) retained and managed or (*b*) disposed of, all in a manner to provide the maximum benefit for the general public." It has recognized the uncorrelated and inadequate nature of the body of existing public land laws and

the necessity to have a comprehensive review of those laws and the rules and regulations promulgated thereunder to determine revisions that are necessary. For this purpose it has established a Public Land Law Review Commission (Public Law 88–606). Furthermore the Congress has directed the Secretary of the Interior to classify the public lands in order to provide for their disposal or interim management under principles of multiple use and to produce a sustained yield of products and services pending implementation of recommendations to be made by the Public Land Law Review Commission (Public Law 88–607). Congress has provided temporary authority for the sale of certain public lands required for orderly growth and development of a community or that are chiefly valuable for residential, commercial, agricultural (exclusive of lands chiefly valuable for grazing and raising forage crops), industrial or public uses or development (Public Law 88–608). These three acts signed on September 19, 1964, are among the reasons why the 88th Congress will be remembered for its contribution to the conservation of the Nation's natural resources.

While these important new legislative measures were in process, an intensive effort has been underway within the Bureau of Land Management to prepare for the implementation of this legislation and to evaluate and to reorient its organization, management policies, systems, and methods to provide a strong and efficient vehicle for carrying out these new directions regarding the public lands.

To gain a better understanding of what the eventual arrangements for public land administration might be and to thereby provide a guide for current organization and planning efforts, an initial analysis has been completed, except for Alaska, which identified four major types of areas:

(1) Areas around communities, required for industrial, residential or recreational growth of the communities. In the areas of rapid population expansion this can be of primary importance. This type also includes areas having a widely scattered tract land pattern which is impossible for BLM to manage efficiently and which should be transferred to local public, other Federal agency, or private ownership;

(2) Areas where BLM shares management responsibilities with other Federal agencies, such as National Park Service on national recreation areas;

(3) Areas having a highly fragmented land pattern which, if retained and managed by BLM, will require intensive coordination with and reliance on institutions such as soil conservation districts, counties, fire control districts, to achieve multiple-use management;

(4) Areas where the Bureau is by far the dominant land manager and which can be managed directly for multiple use and sustained yield of the resources involved.

The clear voice of Congress in support of positive management and conservation, and the present efforts by the Bureau to ready itself, should open a new era in Federal public land management and restore these lands to their proper role of importance among the Nation's natural resources.

The new legislation opens the door to modern classification and management of the public lands. Major impact on program operations will be—

1. An active disposal effort for lands classified for transfer;
2. A stronger management program for areas classified for retention; and
3. Coordination of management with adjacent public and private ownership.

This approach also should be of assistance to the Public Land Law Review Commission in its work.

At the same time, much has been accomplished quietly that promotes progress. With outstanding local cooperation among agencies and the timber industry the huge task of selling and cutting salvage timber from the disastrous windstorms of 1962 and 1963 has been completed in western Oregon. A reasonably stable market has been maintained. And while speed has been paramount in clearing the salvage, enduring conservation and sustained yield requirements have been recognized and performed.

The Bureau participated actively in recovery measures following the Good Friday earthquake in Alaska. After immediate community needs to protect life and property were met, the Bureau moved quickly to get back into business. Within 2 weeks the land office was reopened. Bureau aircraft were made available where needed to assist in the recovery program. Plans for the Anchorage fire facilities were revised providing the Bureau with a more advantageous location, while making available the previous construction site to meet other recovery needs.

Many other measures set in motion in previous years were continued or advanced. The advisory boards with their broadened membership for the considera-

tion of multiple use were strengthened. Through consistent attention and continuous procedural revisions land office operations have continued to improve since the moratorium, with continued reductions in outstanding caseloads enabling the Bureau to assign personnel and funds to newer programs.

The fiscal year 1966 budget estimates incorporate the broad change in public land management outlined above. Decision upon this budget will strategically determine to a great extent the rate at which the new approaches can be implemented. Under the various appropriations and activities, certain central themes run throughout:

1. Accelerating disposition of lands for community needs consistent with sound local land planning;
2. Halting deterioration and damage to resources;
3. Augmenting direct on-the-ground management and use supervision in the field; and
4. Constructing and maintaining needed roads, buildings, and sanitation and protection facilities.

It is for these purposes primarily that increases are sought.

At the same time the fiscal year 1966 estimates reflect a thorough scrutiny of existing programs, procedures, and organizational arrangements, which has resulted in projected program savings of approximately $1.1 million. These savings involve consolidation of field offices, reductions in field supervisory staffing, and simplification of procedures. Program increases amount to approximately $3 million in appropriations Management of Lands and Resources, Construction, and Public Land Development Roads and Trails. The savings indicated above will finance one-third of the increases requested. Due to the nonrecurring $1 million supplemental for fire rehabilitation included in the fiscal year 1965 appropriations, the total increase in 1966 over 1965 in these three appropriations amounts to a little over $1 million.

The estimates of the Bureau are summarized below by major program in thousands of dollars:

	1965	1966	Increase (+) or decrease (−)
Management of lands and minerals	$10,647	$10,503	−$144
Resource management	11,591	11,672	+81
Resource conservation and development	11,561	12,586	+1,025
Fire protection, suppression and rehabilitation[1]	5,314	4,379	−935
Cadastral surveys	5,006	4,967	−39
General administration	1,865	1,961	+96
Construction and maintenance	4,212	5,162	+950
Total	50,196	51,230	+1,034

[1] The 1965 amount includes the $1,000,000 supplemental appropriation for fire rehabilitation primarily in Nevada. Consequently there is an overall decrease between 1965 and 1966. Fire suppression is estimated in both years at $400,000 the amount normally included in the regular budget.

The program savings discussed above also have resulted in saving 113 existing permanent positions. These savings in manpower have been reapplied to the staffing requirements of the program increases that are requested. Consequently the permanent positions requested for the Bureau for its regular programs are reduced by eight in 1966. In summary, these estimates request increases in the most essential programs which will contribute to the conservation of the public lands, offset to the greatest extent possible through the implementation of organizational and procedural changes where feasible economies in funds and manpower can be made. It is evident that the preponderance of the increase requested is for resource conservation and development through performance of the soil and moisture conservation program. The Bureau is under obligation to act in the public interest—to manage the publicly owned lands and resources in the public interest. One of the important public responsibilities is that of conservation which can now be defined as an investment (1) in maintaining productive potential, (2) in decreasing the productivity deterioration, or (3) in enhancing the productivity potential (value either monetary or nonmonetary).

One of our fundamental conservation philosophies is that this Nation has been endowed with a complex natural resource plant which should be viewed as a capital plant. Some parts of it (minerals for example) are "stock" capital which is depleted as it is used; others produce "flows" that, under proper management, can be used without depleting the capital base. We have not always managed

wisely; there has been and is some depletion of our flow resources as well as of our stock resources.

The prudent businessman who has acquired a valuable capital plant makes sure that the plant is maintained by means of a "depletion account" which provides for reinvestment of a portion of current receipts. As the agency responsible for prudent management of an important part of the Nation's resource capital, the Bureau recognizes that some of the Government revenues and private receipts generated by use of natural resources really are costs (capital depletion) rather than income. Similarly BLM views an important part of its appropriations and expenditures as reinvestments necessary to maintain society's resource capital.

In fiscal year 1966 the Bureau of Land Management will realize receipts estimated at $471 million. Of this amount $73 million will be paid to States and counties (by permanent appropriations); $65 million will be deposited in the reclamation fund; $1.5 will be deposited for range improvements; and the balance of $331.5 million will be deposited in the Treasury. The amount deposited with the Treasury, paid to States and counties, and deposited in the reclamation fund, in each instance exceeds the fiscal year 1966 request for Bureau operation and investment funds.

1966 Program

Chairman Hayden. The Director of the Bureau of Land Management, Mr. Stoddard, is here this morning with his assistants to present the proposed program for the fiscal year 1966.

Mr. Stoddard, you may submit your statement for the record.

(The statement referred to follows:)

Statement of Director Stoddard

Mr. Chairman and members of the committee, we are pleased to be here today to discuss the budget request for fiscal year 1966 needed to support sound land management of over 464 million acres of public lands. This statement will touch upon only briefly the more important current developments in public land management and necessary financial requirements. A more extensive summary of these developments and of the budget estimates appears in the highlight statement contained in the justifications.

The last session of Congress enacted three new and significant laws regarding the public lands, authorizing the establishment of a Public Land Law Review Commission, authorizing the sale of certain public lands, and authorizing classification in order to provide for disposal or interim management under principles of multiple use.

Consistent with this legislation and the requirements of modern public land management, an initial analysis has been completed, except for Alaska, which has identified four major types of areas:

1. Areas around communities required for industrial, residential, or recreational growth of the communities where land should be transferred to appropriate ownership;
2. Areas where BLM shares management responsibilities with other Federal agencies;
3. Areas having a highly fragmented land pattern which if retained and managed by BLM will require intensive coordination with and reliance on institutions such as soil conservation districts, counties, and fire control districts to achieve multiple use management;
4. Areas where the Bureau is by far the dominant land manager and which can be managed directly for multiple use and sustained yield of the resources involved.

NEW ERA IN LAND MANAGEMENT

The support Congress has given to positive management and conservation and the present efforts by the Bureau to ready itself should open a new era in Federal public land management and restore these lands to their proper role of importance among the Nation's natural resources. The new legislation opens the door to modern classification and management of the public lands. Major impact on program operations will be—

1. An active disposal effort for lands classified for transfer;
2. A stronger management program for areas classified for retention;
3. Coordination of management with adjacent public and private ownership.

This approach also should be of assistance to the Public Land Law Review Commission in its work.

While new directions for public land management have been in formulation, the established programs of the Bureau have been performed during a period afflicted with natural disasters. As a result of outstanding local cooperation among agencies and the timber industry, the huge task of selling and cutting salvage timber from the windstorms of 1962 and 1963 has been completed in western Oregon. A reasonably stable market has been maintained. And while speed has been paramount in clearing the salvage, enduring conservation and sustained yield requirements have been recognized and performed.

ALASKAN EARTHQUAKE

The Bureau participated actively in recovery measures following the Good Friday earthquake in Alaska. After immediate community needs to protect life and property were met, the Bureau moved quickly to get back into business. Within 2 weeks the land office was reopened. Bureau aircraft were made available where needed to assist in the recovery program. Plans for the Anchorage fire facilities were revised providing the Bureau with a more advantageous location, while making available the previous construction site to meet other recovery needs.

PACIFIC NORTHWEST FLOODS

Now the Pacific Northwest is again in difficulty due to the floods of Christmas week, early January, and the last week. Unusually heavy snowfall following the first storms has made it impossible for us to fully assess the damage done or the full scope of recovery measures that may be necessary. Consequently the programs for these areas, especially for forest management and road construction, are subject to substantial change. We expect to advise you in the near future of the situation and what needs to be done to meet it.

PURPOSES OF PROPOSED INCREASES

The fiscal year 1966 budget estimates incorporate the broad change in public land management outlined above. Decision upon this budget will strategically determine to a great extent the rate at which the new approaches can be implemented. Under the various appropriations and activities, certain central themes run throughout—

1. Accelerating disposition of lands for community needs consistent with sound local land planning;
2. Halting deterioration and damage to resources;
3. Augmenting direct on-the-ground management and use supervision in the field;
4. Constructing and maintaining needed roads, buildings, and sanitation and protection facilities.

It is for these purposes primarily that increases are sought.

At the same time, the 1966 estimates reflect a thorough scrutiny of existing programs, procedures, and organizational arrangements, which has resulted in projected program savings of approximately $1.1 million. These savings involve consolidation of field offices, reductions in field supervisory staffing, and simplification of procedures.

The preponderance of the increases sought in these fiscal year 1966 estimates represent an investment in the public lands through the soil and moisture conservation program and construction and maintenance of roads, buildings, and sanitation and protection facilities. As these investments in the public lands are considered, it is significant that these lands and their resources produce substantial revenues for the Treasury and for States and counties. In fiscal year 1966, the Bureau of Land Management will realize receipts estimated at $471 million. Of this, $73 million will be paid to States and counties (by permanent appropriations); $65 million will be deposited in the reclamation fund; $1.5 million will be deposited for range improvements; and the balance of $331.5 million will be deposited in the Treasury. The amounts deposited with the Treasury, paid to States and counties, and deposited in the reclamation fund, in each instance exceed the fiscal year 1966 request for Bureau operation and investment funds.

PUBLIC LAND MANAGEMENT

Mr. STODDARD. I would like to highlight my statement, Mr. Chairman.

In the last year, the Congress has made it possible to reach a turning point in the management of the public lands. As you know, over the years, the whole question of whether the public land should be retained or disposed of had never been resolved. With the passage of the classification and multiple-use bill and the public sale bill, we have authority to go ahead and classify the lands now according to a number of categories and what their probable best future use and management-ownership would be.

This legislation, these two bills which are now acts, is temporary during the period of the Public Land Law Review Commission, which was set up jointly by the House and Senate to study the whole question of the 175 million acres of public lands in the Western States and 289 million acres in Alaska, for their long-term use and management.

CLASSIFICATION OF LANDS

The classification program and the general management program of the lands which is authorized by the new legislation is resulting in an immediate effort by the Bureau to classify lands according to three major categories: The lands around communities that are needed for use in the growth and expansion of the communities; another classification, which are the large blocks for direct management in the more remote areas; and then in intermingled areas, which are the fragmented and scattered lands in between.

This classification is having a direct influence on the programs in the management of these lands. We will have an active disposal program of the lands classified for disposal. We will have a direct management program for lands which we classify for multiple-use management. Then we are planning on an intermediate program of cooperative management for the intermingled lands where it is not clear just what their long-term probable use will be.

ACTION IN EMERGENCIES, OREGON AND ALASKA

During the last several years, the Bureau has been faced with a series of emergencies, the cleanup of the very heavy blowdown that took place in the Northwest, particularly in Oregon, which is now nearing completion. Then the Alaskan earthquake caused considerable problems to us on not only our buildings, but also our surveying work. More recently, and we have not evaluated the costs at this point, we have had quite a bit of flood damage to the roads systems in our timberlands in the Northwest.

ACCELERATED DISPOSITION PROGRAMS

The program that we see ahead, that will come about as a result of our closer analysis and inventory of the public lands, is the accelerated disposition programs of lands classified for disposition. On lands which are classified for multiple-use management, we have a major need for accelerating our soil conservation and range improvement work and revegetation on these lands where some deterioration has taken place over the years.

SANITATION AND PROTECTION FACILITIES

In addition, as you know, last year the Congress granted us a small amount of money to take care of immediate problems for recreational use of the public lands so we could provide construction of basic sanitation and protection facilities, where use is actually taking place, and so on.

Chairman HAYDEN. You are not doing advanced planning—just taking care of the present situation.

Mr. STODDARD. That is right. We have an inventory in many of these areas where uses are being made, but we are concentrating the limited funds in the areas where heavy use is already taking place and no facilities are provided. The usual beer cans, broken bottles, old cars, and all this sort of thing are piling up on the public lands in many areas and we are trying to take care of this situation. Then we do, of course, have roads and buildings that are necessary as part of the land management program.

INCREASES DIMINISHED BY MANAGEMENT SAVINGS

We have made every effort to scrutinize existing programs and procedures and organizational structure in order to get as great a saving as possible. This has resulted in a saving of $1.1 million, coming about through some consolidations and some reductions of supervisory staffing, and simplification of many of our recordkeeping procedures.

Chairman HAYDEN. I do not quite understand. Do you want to do more work with less men?

Mr. STODDARD. By revising our organizational structure at the intermediate level and some of the processes we have used. What we want to do is release this manpower for more management and on-the-ground work. We figure that these savings will finance about one-third of the increases that we request.

INCREASES FOR SOIL AND MOISTURE CONSERVATION

The preponderance of the increase requested is for resource conservation and development, particularly in the soil and moisture conservation program.

We feel that this is an investment rather than just a current expenditure. It is a capital investment that enhances the property value of the people and deters continued deterioration that is taking place.

Senator YOUNG. Mr. Chairman, maybe this program can be explained a little further.

WATERSHED LANDS

Mr. STODDARD. Surely. I don't know if we have a map with us which would show primarily the watershed lands of the West. But the way the watershed is managed influences the amount of water yield, whether you have silt and whether you cause reservoir siltation and pollution as a result of silt, or whether you have a steadier flow, and no floods.

Over the years, while the Congress has been considering what we do about these lands, whether they be retained or disposed of, there has

been some abuse, particularly in the fragile soil areas. Now we have a reasonably clear charter with respect to multiple-use management and application of conservation practices.

We are planning to carry on and increase our program for watershed improvement. This means applying contouring, vegetation, gully plugs, many of the standard soil conservation practices.

Senator YOUNG. How are you having this work done?

Mr. STODDARD. It is largely done by contract, sir.

LANDS ADMINISTERED BY BLM

Senator YOUNG. What lands do you handle, and which lands are taken care of by the Forest Service?

Mr. STODDARD. These are the residual lands from all the various treaties and acquisitions during the course of our history, the Louisiana Purchase, the Northwest Treaty, the treaty with Mexico, and so on, which are left after the national parks, the national forests, the national game ranges, the reclamation withdrawals, and all the private sales and the State selections have taken place. We have the lands which are left.

Over the years there has never been a really clear-cut policy about retention or disposal of these lands. This Bureau is the lineal successor of the General Land Office, which is probably one of the oldest bureaus of the Government with 150 years behind it. Our responsibilities include primarily the management of these lands and now the disposal of certain ones that are classified for disposal.

Senator YOUNG. I never did quite understand the yardstick. In my State most of the Government-owned lands are managed by the Forest Service, and we don't have any forests in North Dakota.

Mr. STODDARD. The national forests were withdrawn in the West largely in the early era of the Teddy Roosevelt administration and prior to that. They were withdrawn from the public lands and reserved, set up as forest reserves. The lands around those, which are more arid lands, and have sometimes very little forests, are the ones that remain in our custodianship.

NATIONAL GRASSLANDS

Senator YOUNG. My statement refers to those lands out of production in the 1930's and put under grazing. The Soil Conservation Service handled them for awhile, and now the Forest Service has this jurisdiction.

Mr. STODDARD. Those are what they call national grasslands. Those were reacquired lands which have been largely homesteaded and the homesteaders were droughted out during the 1930's, and the Bankhead-Jones Act set up a program for acquiring these lands and putting them into more or less a permanent soil bank of Government ownership.

Senator YOUNG. The Bureau of Land Management does have some lands of this type; don't they?

Mr. STODDARD. We have some, yes; but where they were in reasonably well blocked units they were kept in the Forest Service. We have scattered lands. In Montana and Wyoming we have quite a bit of them.

Senator YOUNG. Thank you, Mr. Chairman. This was never quite clear in my mind.

Mr. STODDARD. These went into private ownership and then back to Government ownership, because they were in dry areas that suffered seriously during the 1930's.

INVESTMENT IN WATERSHED CONSERVATION

We feel that part of this investment that we have identified as being needed on the residual public lands is quite essential in order to maintain continued flow of the resources, that is, the forage, water, such timber as is present, and also wildlife habitat, and that it is not a current Government expenditure in the normal sense, but is a long-term investment.

This is in line with what many businesses do. For instance, we do sell a good deal of minerals from the public lands, the receipts go into the Federal Treasury and a portion is allocated to the States. But under an ordinary business situation, these would be reinvested in the resource in order to continue the productivity. We feel that the relationship here is one that we might establish from an accounting standpoint, and it does provide a sound basis for our maintaining a renewable resource which is possible to do by plowing back enough money to keep the productivity up to date.

PROPOSED GROUPING OF ACTIVITIES

Speaking of the accounting aspects, during the House hearings, a discussion took place regarding the simplifying of our activities, our structure, our account heads. It is proposed to group the activities by the offices performing them. This would be more directly related to programs.

The land office functions would be in activity 1, and the district office functions in another. The service functions of the cadastral survey and general administration are shown separately as are costs of firefighting and rehabilitation of burned over areas. We believe this would be more meaningful to the committee and simplify our operations. It means that some of the account headings and activity headings are not as directly and closely related to our activities as they once were. There has been a shift over time. We are trying to update them.

I think that concludes my statement, Mr. Chairman.

MANAGEMENT OF LANDS AND RESOURCES

Chairman HAYDEN. For "Management of lands and resources," in fiscal year 1966, the Bureau's proposed budget is $47,630,000, an increase of $534,332 over the amount appropriated to the Bureau in fiscal year 1965.

The justification presented in connection with this request will appear at this point.

(The justification referred to follows:)

JUSTIFICATION

Appropriation, 1964	$44,152,500
Supplemental appropriation, 1964	2,500,000
Total appropriation, 1964	46,652,500
Transferred to "Operating Expenses, Public Buildings Service," General Services Administration	−35,773
Total available, 1964	46,616,727
Appropriation, 1965	45,372,000
Supplemental appropriation, 1965	1,000,000
Pay cost supplemental	750,000
Total appropriation, 1965	47,122,000
Transferred to "Operating Expenses, Public Buildings Service," General Services Administration	−26,332
Total available, 1965	47,095,668

SUMMARY OF INCREASES AND DECREASES, 1966

Lease and disposal of land and mineral resources:	
Increase will provide for land tenure analysis and for recreation inventory of BLM-administered lands	443,000
Program savings (nonrecurring)	−587,300
Management of grazing lands:	
To provide for more adequate management of grazing lands	367,000
Program savings (nonrecurring)	−133,670
Forestry:	
Increase will meet higher contract costs of forest protection on public domain lands and to perform additional fire hazard reduction work to prevent fires	65,000
Program savings (nonrecurring)	−152,100
Cadastral survey: Program savings (nonrecurring)	−38,598
Soil and moisture conservation:	
Increase in program to halt further deterioration of public lands	600,000
Additional funds for resource conservation development and State cooperative projects for wildlife habitat improvement	490,000
Increase to provide for Public Law 566 project work	150,000
Decrease in fire rehabilitation program	−1,000,000
Decrease due to program savings (nonrecurring)	−215,000
Maintenance of physical facilities: To provide for increased maintenance costs including sanitation and protection facilities	150,000
Maintenance of access roads: Additional funds will provide for more adequate maintenance of Bureau access roads	300,000
General administration:	
To provide necessary expanded services in support of resource management and development programs; to develop new administrative systems and improve manpower and fund utilization	96,000
Net increase, fiscal year 1966	534,332
Budget estimate, fiscal year 1966	47,630,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers [1]	Amount available
1. Lease and disposal of land and mineral resources	$10,244,427	$10,400,000	$249,000	−$1,700	$10,647,300
2. Management of grazing lands	5,937,476	6,172,000	113,000	−330	6,284,670
3. Forestry	8,835,972	8,685,000	152,000	−10,900	8,826,100
4. Cadastral surveys	4,782,163	4,950,000	69,000	−13,402	5,005,598
5. Soil and moisture conservation	11,051,766	12,851,000	104,000		12,955,000
6. Fire suppression	2,492,251	400,000			400,000
7. Maintenance of physical facilities	192,748	400,000	4,000		404,000
8. Maintenance of access roads	251,037	700,000	8,000		708,000
9. General administration	1,780,567	1,814,000	51,000		1,865,000
Unobligated balance lapsing	1,048,320				
Total	46,616,727	46,372,000	750,000	−26,332	47,095,668

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 amount estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Lease and disposal of land and mineral resources	$10,244,427	$10,647,300	$10,503,000	−$144,300
2. Management of grazing lands	5,937,476	6,284,670	6,518,000	+233,330
3. Forestry	8,835,972	8,826,100	8,739,000	−87,100
4. Cadastral survey	4,782,163	5,005,598	4,967,000	−38,598
5. Soil and moisture conservation	11,051,766	12,955,000	12,980,000	+25,000
6. Fire suppression	2,492,251	400,000	400,000	
7. Maintenance of physical facilities	192,748	404,000	554,000	+150,000
8. Maintenance of access roads	251,037	708,000	1,008,000	+300,000
9. General administration	1,780,567	1,865,000	1,961,000	+96,000
Unobligated balance lapsing	1,048,320			
Total	46,616,727	47,095,668	47,630,000	+534,332

[1] Represents transfers to General Services Administration.

1. Lease and disposal of lands and mineral resources

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
(a) Title, lease, and records service	$5,554,534	$5,588,000	$5,124,000	−$464,000
(b) Land tenure analysis and classification	4,083,334	4,303,300	4,623,000	+319,700
(c) Records improvement	606,559	756,000	756,000	
Total	10,244,427	10,647,300	10,503,000	−144,300

(a) *Title, lease, and records service*

The estimate of $5,124,000 is a decrease of $464,000 representing improved procedures and projected program savings to be achieved through improved operations.

Plan of work.—The program for fiscal year 1966 will emphasize two major trends: continued economies in traditional operations; and initiation of new services in support of multiple-use management of the public lands. Improvements in operations and economies effectuated by certain consolidations and eliminations of certain offices are expected to be sufficient to generate the overall reduction of $464,000 planned in the coming year.

Many of the new services being initiated are vital to the reductions in regular work that are being effected. They form essential portions of Bureau efforts to

make lands available for transfer, clarify ownerships, and perform authentic realty services. Through these efforts needless and futile public applications, like those that created huge backlogs in the land offices during the 1950's will be avoided and unproductive workloads can be eliminated.

The broad classification of public lands, as authorized by the Multiple Use Act of 1964, is basic to the new role of comprehensive realty services. These classifications will require the preparation and maintenance of records, in both land offices and district offices, showing classification decisions reached, areas closed to specified types of entry and applications, specifically needed land adjustments, such as preferred sales of scattered tracts, lands suited for exchange, in order to better consolidate permanent management areas, lands suitable for satisfaction of scrip or selection rights, lands suited for urban expansion, management areas which should be managed by non-Federal authorities, etc. Since local governments are essential partners to our programs affecting their jurisdictions, these records will emerge as principal focal points of liaison among participating groups.

As these records become available, it is expected that land tenure actions, especially disposals, will increase. Through the use of rational and simplified procedures, these actions can be accommodated at reasonable costs. Land and mineral patents will be issued locally on a fully decentralized basis.

The net effect will be increased emphasis on concentrated, efficient realty services, able to handle an increased volume of Bureau-motion transactions at less cost, unencumbered by the previous heavy burden of uncontrolled individual applications, and able to maintain continuing essential casework programs (such as mineral leasing) through improved procedures. Paperwork processing and related services will be kept to the minimum necessary to efficiently accomplish land tenure adjustments.

This transformation in operations will be possible within an overall reduction in funds through continued savings from changes already made and further changes, including consolidations and eliminations of certain offices, which are in process. For example, new regulations have been adopted to streamline oil and gas simultaneous filing procedures. These filings currently are averaging over 25,000 per month, involving over $250,000 in filing fees. The new drawing card procedure eliminates the requirements to serialize any but the successful offers. Unsuccessful offers are returned promptly. This innovation, together with other steps to streamline procedures for handling such filings, is causing significant economies in land office costs and manpower.

Similarly, real advances have been made in the handling of adjudicative workloads. When the moratorium on certain types of land applications was declared in 1961, land and mineral cases pending numbered over 100,000. By the end of 1963 the total had been reduced to 53,512. A year ago, cases pending were projected at 46,517 and 41,000 for fiscal years 1964 and 1965, respectively. On June 30, 1964, cases pending actually were down to 44,409 and are estimated at 35,000 by the end of 1965. Further reductions are anticipated and the present estimate of cases pending at the end of 1966 is 26,000, which may approximate an optimum level. These reductions in pending workloads generate numerous direct and indirect savings in work, formerly necessary to simply "service" the backlogs—filing, reexamination because of outdated information, and responses to inquiries regarding delays in processing.

Actions are being taken to continue the drive for efficiency and economy. An example was the closing of unclassified lands in Nevada to agricultural applications after exhaustive studies. This measure, which will permit well planned utilization of Nevada's remaining available water supplies, was the result of Federal-State cooperation and will help the Bureau and users alike by halting a heavy influx of petition applications, most of which eventually would have been rejected after much wasted time, effort, and expense. Similar closing in other States may prove necessary to effectively manage the public land and control filings.

In summary, fiscal year 1966 will be an important year of transition as a variety of actions are taken to initiate realty services in support of multiple-use management of the public lands.

(*b*) *Land tenure analysis and classification*

The estimate of $4,623,000 is an increase of $319,700 over 1965 consisting of—

(1) An increase of $258,000 for fieldwork to support the broad classification of the public lands which will stimulate land tenure adjustments and support multiple-use management.

(2) An increase of $185,000 for completion of the recreation inventory on BLM-administered lands.

(3) A decrease of $123,300 representing projected program savings to be achieved through improved operations.

Need for increase.—An increase of $258,000 is requested to begin a classification of the public lands in such a manner that it will stimulate beneficial land tenure adjustments and support multiple-use management objectives. The classification of public lands for management and transfer is fundamental to the development of multiple-use management of the public lands. The process of classification will draw upon information gathered in the last few years through the land analysis and minerals inventories which have been made. However, the classification of the lands, the auxiliary records systems previously described, and subsequent unit management plans will require intensive field work to insure the use of valid data, the planning of tenure adjustments of benefit to all concerned, and the full recognition of resource values which previously received only limited attention. In this regard the identification, preservation, and protection of archeological, historical, and unique natural areas is especially important and must be appropriately provided for in the development of land classifications aimed at multiple use.

The thrust of this new approach, insofar as beneficial tenure adjustments are involved, heavily depends upon sufficient contact and negotiation with local agencies and groups having a role in planning, zoning, or other phases of local land development. In this connection the new Public Sale Act greatly increases the capability of the Bureau to work constructively toward needed land tenure adjustments. It grants authority to sell public lands provided that certain conditions are met. Among these conditions are the adoption of classification criteria and, very importantly, the existence of enforcible zoning regulations. The basic idea is that zoning should be consistent with standards for each situation, with the local governmental bodies participating in the determination of their adequacy. Thus, local governments are an essential partner in this program and are expected to be of great assistance in the identification of needed land tenure adjustments and the working out of actual transfers. There are an estimated 10 million acres adjacent to communities and in scattered unmanageable tracts presently administered by the Bureau which need to be considered, cooperatively, for potential transfer.

The effectiveness of this new legislation in bringing about adjustments in land ownership that will benefit local communities and the management responsibilities of the Bureau is dependent upon sufficient capability to work directly with local people as both broad plans and specific details of land transactions are worked out. The savings which the Bureau is striving to make by eliminating fruitless work can only come about and be sustained as momentum is gained in the constructive efforts of the Bureau to classify lands, bring information regarding areas of potential transfer to the attention of local government and interested members of the public, and follow through with the negotiations and the detailed work involved in consummating favorable land tenure adjustments.

An increase of $185,000 is requested in order to complete the recreation inventory on BLM administered lands in fiscal year 1966.

In recent years considerable progress has been made in the identification and evaluation of significant existing and potential outdoor recreation values on public lands in the Western States and Alaska. An intense effort to complete this inventory now is required so that information concerning the BLM administered lands will be available for use by the Bureau of Outdoor Recreation in its national inventory which also is to be completed in 1966. In addition, prompt identification of potential recreation areas will be very helpful in the overall land classification program just discussed.

Plan of work.—The program for fiscal year 1966 is a combination of evolution from prior programs, together with response to new legislation. Significant procedural, conceptual, and operational improvements have been accomplished which have paved the way for more productive land management. In one sense, existing programs have become interim programs pending full development of comprehensive unit plans through the total program approach. By 1966 we will be able to put into effect the land tenure adjustment programs derived from the broad classification program now underway.

The accomplishment of multiple-use objectives will add new dimensions to existing functions. For example, mineral revenues from public lands are large and often important to State finances, as demonstrated by recently developed potash deposits on public lands in Utah. Such instances, however, we may be

rapidly entering into action programs for the protective management of scenic, recreational, scientific, historical, archeological, and wildlife values on the same lands. Full evaluation of all resources potential is needed to coordinate extractive and protective resources activities in optimum long-range programs.

Specific local plans developed from long-range programs will be exposed to constructive participation and suggestion from county and other local groups of interest, including the general public, on a more formal, scheduled basis than heretofore. We expect the extra expense of preliminary local coordination and cooperation to more than "pay off" in greater public acceptance, ease of implementation, and suitability to all levels of public need.

The detailed phase of the minerals inventory program will be broadened in 1966, with special emphasis on economic analyses of the data obtained.

Special mining claim investigation projects which have been in the planning stage will be underway in 1966. These involve oil shale mining claims in the States of Colorado, Utah, and Wyoming; resolution of uranium ore trespass cases in Colorado; and validity determinations for claims in Death Valley National Monument, Calif.

Public demand casework requirements will continue to be met promptly. Field investigation and reporting on all casework will be kept current. Where appropriate, over-the-counter sales of tracts classified for disposal will be used to satisfy periodic peak public demands which in the past have been a source of uncertainty in establishing stable programs of land classification and disposal.

Detailed resource analysis studies will be accelerated. Land adjustment studies with the Forest Service and other agencies will be reviewed and accelerated. The withdrawal review program has been merged into a broader program of land use planning, but will be the subject of further close attention in order to make the best possible adjustments consistent with the new Multiple Use Act.

Completion of the inventory of recreational resources, an essential component of the national outdoor recreation plan to be completed by the Bureau of Outdoor Recreation during fiscal year 1966, is a top-priority goal. Cooperative arrangements with Federal, State, and private agencies and organizations concerned with recreational use of the public lands, including leases and sales under the Recreation and Public Purposes Act and cooperative agreements to utilize the maximum recreational values of the public lands, are specific program objectives for fiscal years 1965 and 1966. Increased emphasis will be placed on protecting from vandalism and abuse sites possessing scenic, scientific, archeological, historic, and recreational values.

(*c*) *Records improvement*

The estimate of $756,000 is the same amount as is available in fiscal year 1965.

Plan of work.—The new records for Wyoming and for portions of Kansas and Nebraska will be completed in fiscal year 1965. Preliminary work for new records for Colorado has been initiated in fiscal year 1965 and construction of the records will be completed in fiscal year 1966. Preliminary work for Oregon will be completed in fiscal year 1966.

2. Management of grazing lands

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
(*a*) Administration of grazing lands	$4,837,050	$5,166,670	$5,400,000	+$233,330
(*b*) Fire presuppression	1,100,426	1,118,000	1,118,000	
Total	5,937,476	6,284,670	6,518,000	+233,330

(*a*) *Administration of grazing lands*

The estimate of $5,400,000 is an increase of $233,330 consisting of—

(1) An increase of $367,000 to move forward toward full management of the public lands in a manner that will prevent further deterioration, protect investments in conservation, and foster livestock and wildlife use on a basis that is compatible with other needs of multiple-use management;

(2) A decrease of $133,670 representing projected program savings to be achieved through improved operations.

Need for increase.—Management of the public lands is going through an important transition. As the significance of the vast areas of public lands grows, more intensive management is required. As the potential of these lands to meet future needs for grazing and water resources, recreation, wildlife habitat, and simply open space becomes increasingly recognized, their present condition, resulting from past and in some instances current use, becomes more critical. The progress that the times demand makes the management of these lands a formidable task.

The need to curb deterioration and injury to public rangelands resulting from uncontrolled use motivated enactment of the Taylor Grazing Act of 1934. The necessity to expedite conservation of these lands and arrange for their use for a number of purposes on a compatible basis has led to enactment of the Multiple Use Act of 1964.

The betterment of these lands to increase their present and future usefulness to the Nation will require a whole series of actions from classification and tenure adjustment to investment in conservation practices to halt deterioration. However, the central theme must be more adequate management.

Man's use of the lands can actively promote severe deterioration unless skillfully managed. Decades of overuse of range forage by livestock and wildlife (in terms of intensity, season, and/or duration) have activated a spiraling process of deterioration in some areas. Plant size has been reduced with a corresponding reduction in root systems. Decreasing plant vigor has weakened resistance to invasion by less desirable species, including poisonous weeds. Losses in foliage have resulted in decreased plant litter. The soil has compacted, the surface has become bare, organic matter in the soil has decreased, and the percolation quality of the soil has been reduced. Under such conditions much needed rainfall has often become an enemy, running off rapidly into expanding gullies, carrying silt and debris downstream to do further damage. The damage done adds to the eventual costs of conservation or is sufficiently severe to create conditions that are physically or economically irreparable.

The significance of management to the overall conservation of the public lands cannot be overemphasized. One example of benefits from an increased range management program coupled with the accelerated rehabilitation program is in the Vale district where several large seedings already have been completed. The seedings are now being used to accommodate nearly all of the early spring use in specific allotments. This is giving the outside range a substantial rest during the early spring period. As a result of this arrangement, there are now rather large acreages that originally were planned for seeding that are improving naturally and will not require such intensive treatment. The outside areas have responded very surprisingly to the improved management and the rest they have received through the early spring period. It is apparent in several of the allotments that the total capital investment will be quite a bit less than originally planned. Expenditures for management now are resulting in immediate benefits while avoiding later high expenditures for restorative measures. More intensive management is essential to the conservation of the public lands.

Intensive management coupled with an accelerated rehabilitation program is needed to prevent further injury and to restore damaged lands. The increase of $367,000 will permit an expansion of management efforts within the framework, and toward the objectives, of multiple use management. Specifically, the increase will be used in four major programs.

(1) Following the progress made under the range adjudication program, management of the public rangeland will be intensified and refined to aid in curbing the declining condition of the land and to accelerate natural range rehabilitation. Where the grazing use has been adjusted to the established grazing capacity of the land, the adjudicated range users expect the Bureau to proceed cooperatively with management plans, expanded studies, and improved grazing systems, coupled with accelerated range rehabilitation to halt deterioration.

(2) Measures will be taken to give added protection and management to lands recently treated under the rehabilitation program to insure proper use. Necessary adjustments and modification of grazing use and the establishment of rotation or other types of grazing systems must be carried out simultaneously with this program to protect and perpetuate the investment. As an added benefit, full use of the revegetated areas under improved grazing systems, will reduce the grazing demand on the native range, thus allowing some areas to improve through natural rehabilitation.

(3) Intensive studies, scientific inventories, and cooperative research will be accelerated to develop new techniques and procedures and to obtain information applicable to more varied and intensive resource uses. Cooperative research on

problems peculiar to semiarid and frail lands will be increased to provide technical information and range measurement techniques and standards which will improve management procedures. Basic facts and data will be gathered to precede economic analysis and to permit more accurate evaluation of various resource use possibilities. Economic analyses will be expanded to help determine peripheral benefits of rehabilitation and management and the economic values of various land uses. Studies also will be continued to determine appropriate levels of user charges and relationships between dependent ranch properties and the public lands.

(4) The management of wildlife habitat will be intensified. Wildlife use areas with serious range problems will be identified and plans formulated for their improvement. The studies and inventories on critical big game winter ranges will obtain information on the trend of range condition. Wildlife habitat management work in cooperation with State wildlife agencies, Federal agencies, and private wildlife conservation groups such as the National Wildlife Federation, Izaak Walton League, Wildlife Management Institute, Audubon Society, etc., will be expanded.

Plan of work.—The long-range goal of the administration of grazing lands program continues to be the halting of deterioration and injury to the public lands and obtaining of maximum sustained use of the range resource consistent with an integrated management program. The attainment of the goal demands that the grazing use of the public lands be managed in consonance with the total Bureau program. Effective range management is essential to obtaining the multiple-use aspects of the public land. To assure this balance between resources available and uses to be made, adequate studies, inventories, information on interaction or reaction from competing demands, etc., must be available as a basis upon which to formulate a comprehensive program.

The data collection, the actions taken, and the management plans being prepared are to be included in the planning unit system. Land use management will follow the guidelines of the multiple-use plan and will be conducted through more intensive management on defined management areas.

During fiscal year 1966 the adjudication program which will bring the grazing demand in line with the grazing capacity of the land will continue to be emphasized toward the objective of completion by July 1, 1967. Over 1,700 grazing cases will be adjudicated. Also, as a prerequisite to adjudication, 1,250 dependent property surveys and 16.3 million acres of range survey will be completed.

After the equitable apportionment of available forage between the competing qualified applicants through the adjudication process, followup supervision will be undertaken to assure that terms of the adjudication are being followed and to reduce trespass. Increased range use supervison on the remaining unadjudicated areas can lessen further range deterioration and decrease future rehabilitation requirements.

Management plans are scheduled for completion on 625 range use allotments. Increased attention will be given to accelerating and intensifying range studies, including condition and trend, actual use, utilization, range readiness, and allotment analysis. Range studies which appraise the current situation, evaluate the present and potential characteristics of the range resource, and prepare for intensified management and proper development are basic to comprehensive management.

Intensified management will be coordinated with the rehabilitation program to assure protection of the capital investment in the land, and to prevent further deterioration. Areas needing rehabilitation and development work will be identified and measures taken to assure proper use of the area before, during, and after the development period.

Certain areas, because of climatic or geographic limitations, cannot be artificially rehabilitated or developed but must rely on proper resource use for the restoration or maintenance of natural vegetative cover. Such natural recovery can be assured only through adequate range use supervision.

Increased attention will be given to the management of the public lands lying outside grazing districts. Approximately 2,200 grazing leases will be reviewed and processed, and range resource inventories will be completed on 1.5 million acres in the Western States and Alaska.

The wildlife habitat management program will be expanded, especially in critical big game winter areas. Because of the migratory nature of many of the game animals, a fragmented land ownership pattern in certain areas and the increased demand placed upon the public lands by the various users, a workable integrated wildlife management program can be accomplished only through co-

operative efforts with State wildlife agencies, other Federal agencies, and private wildlife conservation organizations. Studies for habitat information will be started on lands used largely by reindeer and other big game in Alaska.

Proper use of the public lands is difficult to obtain without corresponding management and improvement of the intermingled private lands. Much effort will be placed in improving and intensifying cooperative programs with the private landowners and other Federal agencies.

In addition, the regular duties essential to the operation of field offices will be performed. These include, but are not limited to, holding of district and State advisory board meetings, annual review, and issuing of over 29,000 grazing permits, leases, and licenses, arbitrating of disputes between range users, supervision of use on designated livestock trails, trespass investigations, etc.

(*b*) *Fire presuppression*

The estimate of $1,118,000 is at the same level as fiscal year 1965.

Plan of work.—Hazard reduction consisting principally of snag felling and flash fuel disposal will be accomplished on 2,800 acres. Some 2,000 miles of firebreaks and truck trails will be developed and maintained to reduce fire hazards in areas of heavily concentrated public use and along roadways. Decentralization of seasonal fire control personnel, mobilized equipment, and fire tools during the critical fire season will be accomplished to provide faster initial action, especially in the high-hazard flash fuel areas. Detection methods will be upgraded in an orderly manner. Aerial patrols will be increased through the use of contract aircraft. High incidence of man-caused fire requires good detection and fast access for men and equipment in order to take prompt and effective control measures.

Special emphasis will be continued in training regular fire control personnel and fire suppression crews, and Spanish-American laborers and Indians, in the modern techniques of fighting forest and range fires. The Bureau is continuing to take a leading role in the development and operation of departmentwide fire training schools covering fire weather, supervision, and air suppression methods. The programs providing fire information and education to the public, investigation of all man-caused fires, and fire law enforcement will be continued. Changes in electronics technology together with the need to meet minimum FCC requirements will require the orderly replacement of obsolete communications equipment. Other fire equipment including vehicles obtained through war equipment surplus will be replaced as required in order to maintain an efficient, safe fire organization force.

The Bureau presently is conducting a study to provide additional information for use in the development of long-term needs and goals of the fire protection program as they relate to integrated resource management. The findings of the study may require some adjustments in the pace and direction of future fire control requirements.

3. Forestry

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
(*a*) Western Oregon	$4,534,995	$4,297,000	$4,221,000	−$76,000
(*b*) Public domain	4,300,977	4,529,100	4,518,000	−11,100
Total	8,835,972	8,826,100	8,739,000	−87,100

(*a*) *Western Oregon*

The estimate of $4,221,000 is a decrease of $76,000 representing projected program savings to be achieved through improved operations.

Plan of work.—All forest management work on Bureau lands west of R. 8 E., W.M., in western Oregon, is financed under this activity. Forest development and protection are financed entirely under the receipt limitation appropriation "O. & C. grant lands."

Although the bulk of the timber salvage volume and all of the concentration of forest blowdown resulting from the severe windstorms of 1962 and 1963 have been harvested, the problem of removal of scattered patches of windthrow still remains. Much of this scattered salvage lies in remote and undeveloped areas. Recent reports from entomologists show that Douglas fir bark beetle increases have reached light epidemic proportions in parts of western Oregon. The scattered

damaged trees continue to attract beetles, and surrounding tracts of green timber have been attacked. Continued effort to salvage the scattered damaged trees will be made to avert the possibility of major epidemic outbreaks. The many small partial cut sales which must be made to accomplish this salvage harvest demand disproportionate expenditures of manpower in sale administration, access acquisition, and related activity due to their remoteness, scattered nature and small size.

In late December 1964 major floods struck the Pacific Northwest. It is premature to assess the impact of these floods upon performance of forest management in western Oregon. However, some modifications probably will have to be made to existing timber sale contracts and other phases of the program. Consequently the explanation of the plan of work which follows may have to be modified subsequently when the full effect of the floods is known.

Timber sale offerings will be 1,221 million board feet. Of this volume, approximately 1,100 million board feet will be chargeable to the allowable cut of 1,127 million board feet, and 121 million board feet of salvage and thinning material which will not be chargeable to the allowable cut. The sales of chargeable timber are below the allowable cut in order to continue adjustments to compensate for overcutting in previous years which was necessary to the windstorm salvage program.

The following table shows volume, sales price, and receipts for O. & C. and CBWR timber sold in 1962, for O. & C., CBWR, and PD in 1963 and 1964, and estimated sale and receipts for O. & C., CBWR, and PD for 1965 and 1966:

Fiscal year	Bureau of Land Management sales		Receipts	
	Volume sold, thousand board feet	Sales price	Bureau of Land Management	Forest Service
1962 [1]	917,706	$22,691,695	$27,995,977	$4,074,580
1963 [2]	1,567,267	35,979,838	28,141,849	4,051,005
1964 [2]	1,569,337	41,466,178	41,564,537	4,237,021
1965 [2]	1,200,000	30,000,000	38,000,000	4,500,000
1966 [2]	1,221,000	30,500,000	32,580,000	4,000,000

[1] O. & C. and CBWR only.
[2] O. & C., CBWR, and PD west of R. 8 E., W.M.

The 2,176,538 acres of commercial forest lands in western Oregon under management by the BLM represent approximately 8.5 percent of the total commercial forest lands in the Douglas fir region. The volume of timber harvested from BLM lands in western Oregon in 1966 will provide about 64,000 man-years of employment. Contribution to the gross national product will be an estimated $763 million.

Special emphasis will be required to update management plans which must be altered due to the results of the disastrous windstorms of previous years. Because of the drastically changed cutting patterns and changed forest composition brought on by the windstorms and resulting salvage efforts, plans which had been developed over many years must be reevaluated and revised to assure that future harvests will provide a continuous orderly flow of forest products.

In western Oregon, intermingled public and private ownership of valuable timber resources requires cooperation in providing access, and necessarily an active trespass program.

It is anticipated that in fiscal year 1966 the Bureau will require 260 easements and agreements covering approximately 260 miles of timber access roads. The Federal Government also grants rights to cross its lands and to use its roads. It is estimated that approximately 210 access permits covering more than 390 miles of road will be granted to persons whose land intermingle that of the Federal Government.

Prosecution and abatement of trespass continue to require substantial attention. A goal has been established to eliminate the backlog of trespass cases in western Oregon by the end of fiscal year 1967. In order to make satisfactory progress toward meeting this deadline, 195 trespass cases must be processed during 1966. Values involved in these cases approximate $200,000. Equally important, a strong trespass program helps to prevent its occurrence.

(b) *Public domain (excluding western Oregon)*

The estimate of $4,518,000 is a decrease of $11,100 from the amount available for fiscal year 1965, composed of the following:

(1) An increase of $40,000 to provide for increased cost of fire contracts in Western States;

(2) An increase of $25,000 to intensify firebreak construction and hazard reduction;

(3) A decrease of $76,100 in forest management representing projected program savings to be achieved through improved operations.

Need for increase.—The increases requested are to meet higher contractual costs of forest protection and to perform additional fire hazard reduction work to prevent fires and to facilitate firefighting.

(1) Forest management: The estimate of $2,051,900 is a decrease of $76,100 representing projected program savings to be achieved through improved operations.

Forest management and development programs currently are being performed at levels that are inadequate to support sustained-yield forestry on the public lands. However, basic inventory work and reforestation surveys are underway and are scheduled for completion in fiscal year 1965. With this data available, a sound and factually based program for the forestry resources of the public lands will be developed in fiscal year 1966. Requests for funds for these programs in future years will be geared accordingly.

Completion of the forest inventory on public domain in 1965 will provide the basic information for the development of forest management plans in fiscal year 1966. With the completion of these management plans, a sound program for the management, sale, and conservation of these forest resources will be possible for the first time.

While the allowable cut under sustained-yield principles will not be definitively established until inventories are completed, planned offerings of 155 million board feet will be below present estimates of the allowable cut. Actual and estimated volumes and receipts for timber sold from public domain lands, excluding those of western Oregon for fiscal years 1962 through 1966, are as follows:

Fiscal year	Volume sold (thousand board feet)	Sale price	Receipts
1962 [1]	147,484	$2,037,695	$2,664,923
1963	100,260	1,083,564	1,436,070
1964	100,491	1,331,808	1,352,947
1965	155,000	1,700,000	1,450,000
1966	155,000	1,700,000	1,500,000

[1] 1962 includes western Oregon public domain; subsequent years exclude western Oregon public domain.

The 155 million board feet to be offered in fiscal year 1966 will contribute an estimated $40 million to the gross national product and provide over 8,000 man-years of work. In addition to improved resource conservation, sale of the full allowable cut in future years should stimulate additional employment in the timber products industry.

The 1966 program is designed to provide for the acquisition of 240 permits and easements involving approximately 310 miles of road. Granting of rights to use existing roads or to construct roads across Federal lands administered by the BLM will involve 170 permits and 190 miles of road. Continued effort at trespass control is a prime requisite to proper forest management. The requested funds provide for the processing of 252 cases during the fiscal year.

(2) Forest development: The estimate of $456,000 is the same amount as provided in fiscal year 1965.

With the completion of reforestation surveys in 1965, the 1966 program can be devoted largely to reforestation work, increasing the acreage to be planted from approximately 3,400 acres in 1965 to 4,000 acres in 1966.

This program is designed so that only denuded forest sites having the highest potential productive capacity will be treated. On these favorable sites, the early establishment of tree reproduction is mandatory if they are to be kept at optimum producing capacity. In many instances where tree reproduction is not immediately established after denudation, undesirable brush species take over the sites. Such brush invasion often complicates watershed protection, delays the establish-

ment of subsequent tree crops, and involves additional costs to remove brush to prepare commercial forest sites for reforestation.

In addition to the actual planting and seeding of 4,000 acres, the program includes the necessary site preparation to provide for proper planting or seedbed, and purchase of seed and planting stock (approximately 3 million seedlings). Stand improvement work designed to promote quality tree growth also is planned for 750 acres.

(3) Forest protection, Western States: The estimate of $904,000 is an increase of $65,000 consisting of—

(1) An increase of $40,000 in contract costs;

(2) An increase of $25,000 in hazard reduction and construction of firebreaks and trails.

This activity provides for the fire protection of approximately 3.5 million acres of primarily forested public domain land in six States through the negotiation of contracts with fire control organizations which have the best access and facilities to provide such protection. Fire risk continues to increase on these lands due to the intensified public use of recreationists, hunters, and fishermen. Substantial progress has been made through better supervision of contracts, improved access for suppression crews, and the reduction of snags and slash in many areas.

Contracts for fire protection are negotiated on a rate per acre that is generally based on the average of 5 prior years experience. The negotiations of some contracts may involve amounts in excess of the average due to the severity of the fire season immediately prior to the contract year. Twenty protection contracts will be negotiated in six States and subsequent inspection will be made for compliance to the contracts. In view of fire experience, higher costs must be anticipated.

Hazard reduction work, including snag felling and removal, and construction of firebreaks, will be increased slightly to keep pace with the increased needs in concentrated public use areas. Hazard reduction consisting principally of snag felling and flash fuel disposal will be accomplished on 650 acres. Approximately 20 miles of firebreaks and truck trails will be constructed and maintained to reduce fire hazards along roadways and in areas of heavily concentrated public use.

The acreage and estimated costs for fiscal year 1966 are:

State	Acres	Cost
California	2,056,000	$540,000
Idaho	542,500	112,000
Minnesota	40,700	3,000
Montana	246,000	31,000
Oregon	430,000	58,000
Washington	154,000	30,000
Subtotal	3,469,200	774,000
Supervision		65,000
Hazard reduction		65,000
Total		904,000

(4) Forest protection, Alaska: The estimate of $1,106,100 is the same amount as provided in fiscal year 1965.

This activity provides for a fire control organization to carry out essential force account programs of prevention, detection, and suppression of fires on about 220 million acres of public domain land in Alaska.

Alaska is one of the major nesting grounds of North America and contributes migratory waterfowl to all major flyways. Expanding recreational use of the lands and resources in Alaska increases danger from fires and creates a need for higher protection standards. Higher values are being placed on Alaska's forest resources as a result of increased interest in wood fiber. State and National interest requires more intense protection of wildlife and their habitats. Consequently more emphasis is planned in the fire prevention program of fire information and education to the public, investigation of all man-caused fires, and fire law enforcement. Through cooperation with other agencies, the aerial detection has been improved, and intensive training courses have been developed and used for fire control personnel.

Significant progress has been made in the program since 1957. The average annual acreage burned has been reduced from about 1 million to less than 150,000 acres. Naturally fire weather is a critical factor in establishing a high or low average figure.

4. Cadastral surveys

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
(*a*) Public land States, except Alaska	$2,930,267	$3,021,598	$3,000,000	−$21,598
(*b*) Alaska	1,851,896	1,984,000	1,967,000	−17,000
Total	4,782,163	5,005,598	4,967,000	−38,598

(*a*) *Public land States, except Alaska*

The estimate of $3 million is a decrease of $21,598 representing projected program savings to be achieved through improved operations.

Plan of work.—The 1966 program will emphasize surveys, resurveys, and special surveys needed (1) in support of the resource management programs of this Bureau, (2) the official survey needs of other bureaus administering the public land, and (3) in cooperation with the boundary identification, marking, and posting program of the Forest Service. Progress by that agency in the identification and marking of its boundaries is dependent upon the amount of assistance BLM can provide as the only official cadastral surveying service of the Federal Government.

A summary of the 1966 program is presented below:

Purpose of survey	Approximate area in acres [1]	Approximate miles of line [2]	Approximate monuments to set [3]	Field party days [4]
1. BLM land:				
(*a*) Forest and range management	1,200,000	1,400	600	3,173
(*b*) Lands and minerals program	624,000	510	----------	3,040
2. Work mainly for other bureaus:				
(*a*) Miscellaneous surveys for other Federal bureaus (and financed from BLM funds)	181,000	----------	7,400	920
Total	2,005,000	1,910	8,000	7,133

[1] Acres resulting from closed traverse as shown on plats of survey.
[2] Miles of line run and monumented which did not result in a closed figure.
[3] Monuments set on the basis of remaining evidence of the original corner without running line.
[4] For purpose of definition, a field party normally consists of a chief of party and 5 subordinate survey aids.

This justification for the first time lists the accomplishments in the above units of measurement. Each term is independent of the others. While line is run and monuments set in obtaining a closed traverse, the miles run and monuments set are not reported under "Miles" and "Monuments."

Examination of technological advances that may be of benefit to this program will continue in fiscal year 1966. At present a thorough test of photogrammetric methods as applicable to resurveys is in progress in the execution of actual resurveys in New Mexico and Idaho. At the present time tests indicate that, from the standpoint of economy, most surveys, especially resurveys, must be accomplished by established ground methods. The results of the two photogrammetric projects underway may be suggestive of procedures which might bring photogrammetric cadastral surveys into a competitive range with ground methods.

(*b*) *Alaska*

The estimate of $1,967,000 is a decrease of $17,000 representing projected program savings to be achieved through improved operations.

Plan of work.—A summary of the 1966 program follows:

1966 cadastral survey program, Alaska

Purpose of surveys	Approximate area in acres	Approximate miles of survey line	Approximate monuments to be set	Field party days
1. State selections	2,500,000	500	100	5,580
2. Smaller areas	50,000	(1)		295

[1] Not measurable in miles.

NOTE.—Units of measurement have been revised consistent with the system described on p. 72.

The State of Alaska is permitted by the Alaskan Statehood Act to select 103 million acres during the first 25 years of statehood. Selections to date by the State total 15.6 million acres. It is anticipated that the Bureau will complete cadastral survey fieldwork on approximately 4.5 million acres of the current selections by the end of fiscal year 1965 and have an additional 6.2 million acres surveyed with the field notes in varying stages of completion. Field survey of an additional 2.5 million acres is planned in fiscal year 1966 which would complete fieldwork on approximately 85 percent of all selections to date.

An essential element of the State selection survey program is the survey of small parcels of land falling within the selected areas to which rights have attached. Before the State can obtain patents to selected areas, such small areas must be segregated from the selection. In addition, the survey of homesteads, small tracts, and other settlement and entry claims peculiar to Alaska, not falling in selection areas, is essential to the patenting of such tracts to Alaska citizens under the various settlement laws. In fiscal year 1966 approximately 50,000 acres of such surveys will be accomplished.

The State selection program in Alaska is particularly susceptible to the use of advanced methods because large areas of land are normally contained in each selection. The Hoversight technique, used with electronic measuring devices, combined with radio communication to Anchorage, computer processing of data, and relay by radio of results back to the field is assisting greatly the performance of this program. This approach makes it possible to survey almost twice the area as with electronic equipment alone and probably more than five to six times the area that would be possible with customary ground methods at the same cost.

5. Soil and moisture conservation

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
Soil and moisture conservation	$11,051,766	$12,955,000	$12,980,000	+$25,000

The estimate of $12,980,000 is an increase of $25,000 composed of the following:

(1) An increase of $600,000 to accelerate the program of protective measures needed to halt further deterioration of the public lands.

(2) An increase of $490,000 to respond to requests for planning and resource conservation work in connection with resource conservation and development projects and for cooperative work, primarily of wildlife benefit, with State agencies.

(3) An increase of $150,000 for Public Law 566 project work.

(4) A decrease of $1 million, the amount of the supplemental appropriation in fiscal year 1965 for fire rehabilitation, restoring that program to a total of $850,000 which should meet the needs of a normal year.

(5) A decrease of $215,000 representing projected program savings to be achieved through improved operations.

Need for increase.—An increase of $600,000 is required to prevent further deterioration of the public land resources. Soil and moisture conservation is basically a watershed management program. It is a capital investment program with investments in the rehabilitation, protection, and increased multiple-use capability of the land.

Acceleration of this program is necessary to halt damage to the public lands in areas where it can be controlled. This is essential if further losses and even

greater future rehabilitation costs are to be avoided. Current estimates indicate that 44 million acres of public domain land are in poor condition and that nearly 125 million acres either continue to deteriorate or are stabilized in low condition. As a result, erosion by wind and water, already extensive, continues to spread.

Vegetation plays a most important role in the prevention of excessive runoff and erosion. Good vegetative conditions and resulting plant roots and litter accumulation hold the soil in place and promote infiltration of water into the soil to produce a dependable source of underground water for irrigation and domestic uses. As the condition of the vegetal cover deteriorates, more soil is exposed to permit rainfall to wash over the surface resulting in erosion and exessive runoff.

An increase of $490,000 is required to be responsive to developing requests for planning and resource conservation work in connection with resource conservation and development (R.C. & D.) projects and State wildlife agencies.

The Food and Agriculture Act of 1962, Public Law 87–703, authorized local resource conservation and development areas (R.C. & D.) to receive Federal assistance. To date, three R.C. & D.'s involve the Bureau's responsibilities in New Mexico, Oregon, and Idaho. For example, in the northern Rio Grande R.C. & D. area in New Mexico, the Bureau, four soil and water conservation districts, New Mexico State agencies, and four other Federal agencies are all actively developing cooperative projects for this 2.8-million-acre watershed. Similar cooperative efforts are being planned with the local county and State groups and other Department of the Interior bureaus and other Federal agencies and State wildlife agencies. The recently enacted Multiple Use Act will broaden further the Bureau's need for cooperative resource management.

The checkerboarding of land ownership, which is common to many public land areas, requires that land rehabilitation and protection programs be undertaken jointly. Coordinated efforts and investments on public and intermingled State and private lands will provide the most effective and the most economic development of all lands within each individual watershed. The BLM must be able to respond to local requests for assistance in conservation planning and development and to keep pace with the programs of other participants on intermingled land ownership.

Conservation work in cooperation with State wildlife agencies is planned on critical big game ranges in the States of Oregon, Utah, Idaho, New Mexico, and California.

An increase of $150,000 is required to fulfill BLM responsibilities in cooperative planning and conservation practices on public land areas within Public Law 566 (Watershed and Flood Prevention Act) areas. This increased effort is necessary to properly coordinate public land programs with the plans and treatment measures being conducted by other agencies under Public Law 566. This is a change in programing procedures brought about by the House Agricultural Committee's policy requiring each Federal land management agency to finance planning and treatment measures from their respective appropriated funds.

A total of $850,000 will be made available for the emergency rehabilitation of burned areas. Without conservation treatment, public lands suffer as a result of wildfires which not only destroy the vegetal cover, but also leave the soil vulnerable to accelerated erosion, seriously impair watersheds, and subject them to the encroachment of undesirable and poisonous plants. In addition to protecting the soil mantle by seeding deep-rooting perennial grasses, the revegetation of burnedover areas reduces future fire hazards in the area by preventing the encroachment of flash-type annual weeds and grasses. This program level should provide an adequate program for a typical year; however, more extensive damage in a critical fire year might require supplemental funds as was the case in Nevada in 1964.

In 1966, $93,433 is required to repay the Bureau of Employees' Compensation for increased benefit payments which have been made to injured BLM employees. Billings to the Bureau reflect actual cost paid; the increase in this amount will be absorbed.

Plan of work.—The 1966 program highlights the application of several major conservation practices which are compared in the following table with major accomplishments in 1964 and planned for accomplishment for 1965. A substantial portion of these efforts will be directed toward defined management areas where public lands are concentrated and in other areas having high public interests.

Soil and moisture conservation program by major practices

Conservation practice	Unit	Fiscal year 1964 accomplishments	Fiscal year 1965 planned accomplishments	Fiscal year 1966 program
Water-control structures	Cubic yard	1,567,000	1,719,400	2,805,700
Other conservation practices [1]	Acre	212,300	240,000	285,000
Protective fencing	Mile	1,667	1,777	1,651
Undesirable plant control	Acre	253,500	234,500	247,300
Revegetation	do	250,200	326,700	224,900
Water developments	Number	1,121	911	884

[1] Includes contouring, pitting, furrowing, water spreading, dune control, and deep tillage.

The program of conservation measures set forth above emphasizes revegetation, the construction of water control structures, and such treatments as contouring and water spreading shown under "Other conservation practices." These measures are directed at halting deterioration, preventing erosion and excessive runoff, and conserving frail land areas. While estimates of the expected accomplishments are shown, the program will be conducted necessarily with considerable flexibility to take advantage of opportunities for cooperative conservation efforts and to further multiple use of the public lands. In addition, much of the program properly is committed to continued work in areas where investments already have been made and further work in accordance with developed watershed plans is in order.

In the management of the soil and moisture conservation program, it is of increasing importance that the Bureau have available an analysis of the benefits to be derived from the investments that are made. Comprehensive management studies including biotic (including man), climatic, edaphic, and topographic influence on multiple resource characteristics of typical small watersheds are a necessity for this purpose. There is a general lack of knowledge, based on BLM lands as the source, concerning how these resources can be integrated into a balanced ecologic unit by use and management.

If optimum multiple resources benefit from watershed lands is a realistic goal, certain interrelationships of the various resources (timber, forage, water production, minerals, wildlife, and recreation) will require management oriented studies, data collection, and economic evaluation of uses and conservation practices. However, conservation efforts must be relatively concentrated and intensive in areas that are studied to provide a basis for economic analysis. During 1964, 91 representative resource conservation areas were identified. These relatively small areas, along with existing larger project areas where investments have been started, are located throughout the public lands. They have been selected to represent the full scope of problems faced by this Bureau in reducing further resource deterioration. By concentrating conservation efforts in these areas and by consciously arranging for the development of data necessary to their study and analysis, the work being done in certain selected areas will contribute to our knowledge of the complex resource management and development possibilities and problems involved in multiple-use management of the public lands.

The following table illustrates proposed allocations by States for the fiscal year 1966 program.

Soil and moisture conservation program by States for fiscal year 1966

	Total
Arizona	$575,000
California	575,000
Colorado	855,000
Idaho	1,190,000
Montana	935,000
Nevada	1,350,000
New Mexico	1,430,000
Oregon	1,860,000
Utah	1,290,000
Wyoming	1,125,000
Program direction, employees' compensation, other expenses	795,000
Fire rehabilitation	850,000
Public Law 566	150,000
Total	12,980,000

Conservation accomplishments and needs on lands under jurisdiction of the Bureau of Land Management

Practice	Unit	Accomplishments 1935-64	Inventory of total needs [1]	Planned, 1965	Planned, 1966	Remaining work
Water-control structures	Cubic yard	20,087,045	242,602,293	1,719,400	2,805,700	217,990,148
Other conservation practices	Acre	2,779,285	19,125,872	240,000	285,000	15,821,587
Protective fencing	Mile	46,771	121,897	1,777	1,651	71,698
Undesirable plant control	Acre	1,052,188	16,498,780	234,500	247,300	14,964,792
Revegetation	do	2,095,280	14,797,957	326,700	224,900	12,151,077
Water developments	Number	35,679	85,215	911	884	47,741

[1] Estimate of conservation needs inventory was completed by the Bureau during 1964. This reflects the total needs of the public lands. It includes accomplishments to date as well as future needs.

6. Fire suppression

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
Fire suppression	$2,492,251	$400,000	$400,000	----------

This estimate is for the same amount as in 1965 and represents a continuation of the practice of requesting a token appropriation to be followed with a supplemental request to cover the actual cost of fire suppression.

Plan of work.—Under this activity the Bureau will continue to suppress fires on or threatening lands under its jurisdiction except those protected under contract with States or other Federal agencies (see items "Forest Protection, Western Oregon" under the O. & C. grant lands appropriation and "Forest Protection, Western States" under the activity "Forestry"). The Bureau cooperates closely with States and other Federal agencies in its effort to reduce heavy losses from fires. Modern firefighting techniques, equipment and materials are used where possible. The fire danger rating system, air-drop chemical fire retardants, improved radio communications, and smokejumpers are among measures developed to improve firefighting effectiveness. Regular salaries of permanent employees used on an emergency basis during regular duty hours for fire suppression are not included in this estimate.

7. Maintenance of physical facilities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 amount estimate	Increase (+) or decrease (−)
Maintenance of physical facilities	$192,748	$404,000	$554,000	+$150,000

The estimate of $554,000 is an increase of $150,000 over the amount available for fiscal year 1965 consisting of—

(1) An increase of $50,000 to more adequately meet the annual maintenance requirement of the Bureau structures;

(2) An increase of $100,000 to maintain and operate sanitation and protection facilities.

Need for increase.—Annual maintenance needs of offices, warehouses, and fire-control buildings increase in direct proportion to the age of the structures. Until such time as the old buildings, many built for the CCC program, are replaced, heavy maintenance must be performed to adequately protect the stores and supplies being warehoused and to insure safe and healthful working conditions for employees. The requested increase is required to meet additional maintenance requirements to keep the structures reasonably safe and useful.

The increase requested for operation and maintenance of sanitation and protection facilities is primarily to meet operating requirements of facilities constructed in fiscal year 1965. Although the sanitation and protection facilities are of the most simple design they must be adequately maintained if they are to serve the intended purpose of concentrating use into supervised and controlled

areas, thereby reducing potential fire hazards and the health and sanitation problems. Adequate operation of these facilities is essential especially in areas of very intensive use, such as the Owens Valley in California. Unmaintained facilities will contribute to, rather than diminish, sanitation problems.

Plan of work.—Maintenance of office, employee housing, warehouse, garage, gas and oil storage, lookout, and radio repeater installations will consist of general structural frame repairs, reroofing, exterior and interior painting, and repair or replacement of electrical, water, heating, and plumbing systems. Included also is the maintenance of grounds and yards surrounding the structures, resurfacing of yard areas, and repairs to entrance roads. During fiscal year 1966 individual building maintenance schedules will be completed, and then will be used to govern performance of annual and periodic maintenance work on a regular basis.

Maintenance and operation of sanitation and protection facilities will consist of upkeep of a safe water supply, refuse and waste disposal, general area cleanup and upkeep, painting and repair of facilities, replacement of broken or damaged tables and grills, repair of interior parking roads, parking areas and trails, upkeep of protective fences, road barriers and signs, and insect abatement.

8. Maintenance of access roads

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
Maintenance of access roads	$251,037	$708,000	$1,008,000	+$300,000

The estimate of $1,008,000 is an increase of $300,000 over the amount available for fiscal year 1965 to provide for more adequate maintenance of Bureau access roads.

Need for increase.—The increase requested is needed to further reduce the backlog of deferred maintenance while moving toward the performance of an adequate regular preventive maintenance program.

The Bureau's network of roads, totaling some 18,000 miles, must be maintained to provide access to the public lands for resource development, conservation, and protection programs and the rapidly increasing use of the lands by the general public. Exclusive of Bureau use in the performance of its programs, it is estimated that during fiscal year 1966 nearly 20 million visits will be made to Bureau lands for recreation alone and at least an equal number for other purposes, such as mineral exploration, transportation of timber, livestock inspection, etc.

Even with the expanded maintenance program performed in fiscal year 1964 and fiscal year 1965, many roads still remain impassable. A concentrated effort to reduce the huge backlog of deferred maintenance has been initiated with funds made available in fiscal year 1964 and fiscal year 1965. An estimated $2,300,000 still will be necessary after fiscal year 1965 to complete this effort. New roads and those that have been restored to usefulness require periodic preventive maintenance. As additional new mileage is constructed and major maintenance work completed, regular maintenance work expands and requires additional funds.

Plan of work.—The program for fiscal year 1966 is to perform preventive maintenance on 4,010 miles and corrective or deferred maintenance on 1,730 miles of access road. Emphasis will be placed on maintenance required to reopen high priority roads closed by slides, slumps, and washouts that provide access within the larger blocks of public lands. Ditching and repair and replacement of culverts will be accomplished to put unusable roads back into the transportation system. Normal preventive maintenance will be performed on the usable roads to prevent further deterioration. Patching and resurfacing is planned for those roads which have had very little maintenance since construction.

9. General administration

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−)
General administration	$1,780,567	$1,865,000	$1,961,000	+$96,000

The estimate of $1,961,000 is an increase of $96,000 over fiscal year 1965 to provide necessary expanded services to support the growing resource management and development programs and to develop new administrative systems and strengthen existing systems so as to improve manpower and fund utilization.

Need for increase.—Additional funds have not been provided for general administrative expenses since 1958 except to meet all or part of the costs of pay raises that have occurred and a special allowance for additional equipment. In the meantime the Bureau's resource programs have increased dramatically in response to the recognized needs of the resources of the public lands. With growing programs to be serviced, manpower available for general administration has been devoted increasingly to the prodigious task of performing required administrative paperwork in financial management, personnel management, property and procurement, etc. In fact only the advent of automated data processing in the administrative operations of the Bureau has made the maintenance of basic administrative service functions possible.

However, the development and refinement of systems for the handling of administrative work has progressed slowly. Most importantly, systems that would be of particular advantage to management in the improvement of its operations necessarily have been deferred in most instances. Progress that has been made is rapidly approaching the payoff stage if professional management employees can be provided to make use of information and data in the improvement of Bureau operations. For example, the property records of the Bureau presently are being converted to automatic data processing to help meet growing property workloads with available personnel. The automated records also provide opportunities for in-depth analysis of equipment use, condition and replacement plans to determine whether new requirements can be met, in some cases, partially or totally by redeployment or better scheduling of present equipment.

The financial management system developed in the past few years on a cost basis is approaching the point where cost trend analysis can point up potential areas for improvement in the utilization of manpower and funds. However, the financial analysis program will remain severely limited without additional personnel.

The situation in personnel management is critical. As the volume of personnel actions has increased without additional help, processing of actions has diverted attention from needed improvements, systems, and information for the conduct of a positive personnel management program. A career advancement system is needed urgently. Training efforts must be reoriented and expanded consistent with a career advancement system. A skills inventory system is under development. The potentialities of new classification series, revisions in qualification standards, and standard job descriptions need to be explored so that classification of jobs can strengthen Bureau efforts toward optimum utilization of personnel. Without additional professional assistance in personnel management these improvements will have to come over a period of several years despite the fact that lack of improvement in these management tools currently hinders the Bureau.

The internal audit program now is prepared to undertake more searching inquiries into the condition of Bureau activities, as well as review of the financial implications. The initial steps that have been taken indicate that substantial benefits can accrue from augmenting the audit program both in scope and intensity.

The analysis of problems in management and organization should be receiving considerable attention throughout the Bureau. However, efforts in this regard which can be assisted by organization and management analysts are very limited as the whole Bureau staff for real organization and management work is limited to five professional positions in Washington. The establishment of organization and management analysts in the field to work with the heads of various field offices in the improvement of management and operations is needed immediately.

In summary, funds are requested to strengthen the professional capability of all the administrative functions, to design new systems of management, revise and refine and make greater use of existing systems, and provide more extensive and direct participation in the improvement of Bureau management and operation at all levels so as to improve Bureau performance through better manpower and fund utilization.

Plan of work.—With the increase requested for fiscal year 1966, staffing for performance of administrative operations in the field should be almost adequate to meet regular financial, procurement and personnel management workloads. In addition, initial strengthening of professional staffs will be made including

the assignment of organization and management analysts to the field and assignment of personnel to financial analysis involving exploration of possible areas of cost reduction through use of information gained from the revised financial management system. The internal audit staff will be restored to full strength (auditors have been reassigned to meet accounting workloads and their positions left vacant) so that more frequent and comprehensive audits of operations can be made. Personnel will be assigned full time to the development of new systems of personnel management for the Bureau which are urgently needed. With regular administrative functions staffed on an almost adequate basis for the first time, attention will be placed on initiating the development of systems for greater professional management through the entire operations of the Bureau.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$45,568,407	$47,095,668	$47,630,000	+$534,332
Transferred to "Operating expenses, Public Buildings Service" (77 Stat. 436 and 78 Stat. 655)	35,773	26,332	----------	−26,332
Transferred from "Operation and maintenance," Bureau of Reclamation	−303,000	----------	----------	----------
Unobligated balance lapsing	1,048,320	----------	----------	----------
Appropriation	46,349,500	47,122,000	47,630,000	+508,000
Obligations by objects:				
11.0 Personnel compensation	26,946,069	27,675,000	27,325,000	−350,000
12.0 Personnel benefits	1,970,020	2,125,000	2,095,000	−30,000
21.0 Travel and transportation of persons	2,566,281	2,700,000	2,700,000	----------
22.0 Transportation of things	1,073,432	1,100,000	1,100,000	----------
23.0 Rent, communications, and utilities	850,467	873,668	850,000	−23,668
24.0 Printing and reproduction	294,608	330,000	330,000	----------
25.1 Other services	6,899,563	7,164,000	8,233,000	+1,069,000
25.2 Services of other agencies	113,000	116,000	140,000	+24,000
26.0 Supplies and materials	3,272,738	3,400,000	3,300,000	−100,000
31.0 Equipment	1,598,918	1,655,000	1,600,000	−55,000
32.0 Lands and structures	34,576	----------	----------	----------
Subtotal	45,619,672	47,138,668	47,673,000	+534,332
Quarters and subsistence charges	−51,265	−43,000	−43,000	----------
Total obligations	45,568,407	47,095,668	47,630,000	+534,332

TERMINATIONS, TRANSFERS, AND CONSOLIDATIONS

Chairman HAYDEN. Several days ago I asked you to prepare and supply information to the committee with regard to each action of termination, transfer, or consolidation of activities, stations, or facilities of your Bureau referred to in fiscal year 1966 justifications or otherwise announced. These are fairly detailed, I understand, so will you insert them into the record.

Mr. STODDARD. Yes, sir. We have them prepared and we will provide them for the record.

(The information referred to follows:)

SAVINGS FROM TERMINATION, TRANSFER, OR CONSOLIDATION

Attached are tables containing the specific information requested by the Senate Appropriations Committee. Table I indicates planned land office and district office mergers and table II indicates planned land office mergers with lands and minerals divisions of State offices.

The total savings expected in fiscal year 1966 amount to $393,000. All actions are scheduled for completion by the beginning of fiscal year 1966 and, consequently, further savings will not be generated by these actions in the subsequent year.

These actions will eliminate 38 positions, of which 26 presently are occupied and 12 are vacant. All personnel made available by these actions can be transferred into existing vacancies. They will not be terminated except by their own volition. Retirement of eligible personnel also will be given consideration. Even though we presently can transfer all affected personnel into existing vacancies, specific locations are not indicated at this time. We intend to identify positions for which each individual involved can best qualify and where he expresses an interest in locating.

The reason for taking these actions is to obtain better utilization of manpower and to effect financial savings. These actions will cost an estimated $72,000 in fiscal year 1965 and $18,000 in fiscal year 1966. When costs of both fiscal years 1965 and 1966 are considered, the net savings through fiscal year 1966 amount to $303,000.

TABLE I.—PROGRAM SAVINGS INDICATED IN FISCAL YEAR 1966 BUDGET ESTIMATES

LAND OFFICE AND DISTRICT OFFICE MERGERS

Geographic location	Number of personnel involved at each location	Amount of savings for fiscal year 1966	Effect on personnel at each location	Cost involved for—	
				Fiscal year 1965	Fiscal year 1966
Land office merger, States of Oregon and Washington:					
Spokane land office	6	$39,000	6 to be transferred from Spokane to Portland. This will eliminate need to recruit for 4 vacant positions at Portland.	$9,000	$600
with					
Portland land office	17				
District office merger, States of Idaho and Washington:					
Coeur d'Alene district office (to suboffice)	15	33,000	2 transfer to Spokane from Coeur d'Alene; 2 transfer to vacancies at other locations; 1 vacant position in Coeur d'Alene abolished.	3,000	400
with					
Spokane district office	15				
Merger and new district office at Tooele, Utah:					
Brigham City district office.	14	37,400	15 transfers to Tooele district office; 3 transfers to Grouse Court suboffice; 3 transfers to Randolph suboffice; 3 transfers to vacancies at other locations.	15,800	9,100
Murray district office	10				
Boundary adjustment of districts, State of Utah:					
St. George district office	14	22,100	2 transfers to vacancies at other locations.	1,800	----------
and					
Cedar City district office	12				
District office merger, State of New Mexico:					
Farmington district office (to suboffice).	22	50,740	1 transfer to vacancy at other location; 2 vacant positions in Farmington to be abolished; 1 vacant position in Albuquerque to be abolished.	11,200	4,800
with					
Albuquerque district office	24				
District office merger, State of Colorado:					
Durango district office (to suboffice).	16	29,840	1 transfer to vacancy at other location; 1 vacant position in Durango to be abolished.	7,500	2,900
with					
Montrose district office	20				
Savings and costs	----------	212,080	----------	48,300	17,800
Relocated personnel	----------	----------	29	----------	----------
Positions eliminated	----------	----------	18	----------	----------

TABLE II.—PROGRAM SAVINGS INDICATED IN FISCAL YEAR 1966 BUDGET ESTIMATES

LAND OFFICE MERGERS WITH LANDS AND MINERALS DIVISIONS OF STATE OFFICES

Geographic location	Number of personnel involved at each location	Amount of savings for fiscal year 1966	Effect on personnel at each location	Cost involved for fiscal year 1965
Salt Lake City, State of Utah:				
Land office	38	$49,065	5 to be moved to other locations; 2 vacant positions to be abolished in division of lands and minerals.	$9,800
Division of lands and minerals	18			
Santa Fe, State of New Mexico:				
Land office	44	31,290	2 vacant positions to be abolished in land office.	1,400
Division of lands and minerals	9			
Billings, State of Montana:				
Land office	31	31,000	2 to be moved to other locations; 1 vacant position to be abolished in land office.	2,500
Division of lands and minerals	6			
Portland, State of Oregon:				
Land office	19	23,000	3 to be moved to other locations	3,300
Division of lands and minerals	15			
Denver, State of Colorado:				
Land office	35	46,645	5 to be moved to other locations	7,100
Division of lands and minerals	15			
Savings and costs		181,000		24,100
Positions eliminated			20	

PENDING LAND APPLICATIONS

Chairman HAYDEN. What is your situation with regard to the backlog of land applications on which there is still action to be taken?

Mr. STODDARD. We have those on a current basis now as a result of the moratorium several years ago, plus the closing off of desert land entries in Nevada. We have been able to bring our workload up to a maintenance level now and we look forward to reducing the numbers of new applications coming in, which has been a tremendous source of wasted work, really, on the part of our people.

The old land laws made no provision for acquiring land, or adequate provision for acquiring land, for growth of cities and towns, and people have used the desert land law or the Homestead Act, or tried to get land under mining claims, and this sort of thing. Now we have the Public Sale Act and we will be able to classify these lands for direct sale at appraised value and avoid all of this circuitous process.

MULTIPLE-USE AND CLASSIFICATION ACT

Chairman HAYDEN. There was a world of that circuitous process.

Explain briefly the land classification for which you request an increase of $258,000 for the fiscal year 1966. Also indicate the result expected to be obtained as a result of this classification system.

Mr. STODDARD. The classification is authorized under the Multiple-Use and Classification Act. It will make it possible for us now to cut the Gordian knot of disposal versus retention, to classify lands that logically should go over to the private sector, needed for city growth or scattered in the areas where a ranch owner would acquire them, or needed for city or county parks, for an active transfer program.

On the other hand, the lands that are well blocked in remote areas, we can classify those for retention and develop a long-range management plan for those along the lines we are talking about.

Grazing Lands, Vale District of Oregon

Chairman Hayden. In connection with your request for funds for management of grazing lands, the committee would be interested in knowing the present status of a project initiated a couple of years ago in the Vale district of Oregon, with an indication of the work done thus far and the estimated values derived from this program.

Mr. Stoddard. Would you like to have me supply that for the record?

Chairman Hayden. I wish you would.

Mr. Stoddard. We will be glad to.

Chairman Hayden. We had considerable discussion about it at the time.

Mr. Stoddard. I will give you a detailed report for the record.

(The report referred to follows:)

Vale Project

The Vale project started in fiscal year 1963 and was scheduled for completion in 1969. Except for the planned soil and conservation measures, the original schedule has been maintained. Major conservation accomplishments completed since the start of the project through July 1, 1964, included:

Brush control	acres	104, 400
Revegetation	do	105, 500
Fencing	miles	308
Water developments	each	174
Pipeline for distribution of livestock water	miles	40
Gulley plugs	each	1, 090
Road constructed	miles	31
Program facilities (cattleguards and study plots)	each	74
Fire lookout	do	1
Fireguard station	do	1
Firebreaks	miles	354
Dependent property surveys	each	122
Range adjudications	cases	118
Range resource inventories	acres	1, 734 719

The benefits derived from the Vale project are numerous and varied. The Vale project has provided the Bureau with its first full-scale project on which the total multiple-use resources of the public lands are planned for development within a relatively short period of time. It serves to demonstrate what can be done when funds, knowledge, and cooperation are combined into a united effort to develop the potential of the national resources.

After only 3 years, studies indicate a marked decrease in rates of accelerated erosion and an improvement in the condition of the vegetative resource. Not only have intensive management and the range resource improvement program helped to halt active erosion, but they have contributed to the stabilization of the level economy which is primarily dependent upon the livestock industry. Through seeding of more fire-resistant grass species and by providing improved access, the potential fire danger of the area has been significantly reduced. It also is evident that the improvements have contributed greatly toward deterring the encroachment of noxious and poisonous plants.

The project has provided the Bureau with an opportunity to put research results on resource development methods into practical application on a large scale. The results, which will have benefit not only to the Bureau but also public land agencies and private landowners, have in many cases exceeded expectations. In some cases the natural recovery of untreated areas has been remarkable and the treatment originally planned will not be necessary.

Cadastral Surveys

Chairman Hayden. I note that, in connection with the cadastral surveys both in the public lands States and in Alaska, there are small decreases in your budget estimate. I assume this indicates that the

program savings to be achieved will not reduce the amount of surveys to be accomplished.

Mr. STODDARD. That is right, Senator Hayden. We are developing some new techniques which make it possible to apply our surveying activities over larger areas. Furthermore, for instance we are using some of our Alaskan survey people down here in the "Lower 48," as they say up there, during the winter, and with savings of this kind we will be able to, I think, actually accelerate our work with the present setup.

Chairman HAYDEN. In the oldtime land surveys there were many errors. The townships didn't fit, and so on. Do you have that trouble any more?

Mr. STODDARD. Do you mean of our new surveys that we are making?

Chairman HAYDEN. Yes.

Mr. STODDARD. They attribute a lot of past trouble to contract surveys and I think a contractor would tend to do some horseback "guesstimating". Where our fellows do it and their professional integrity is involved, there is much more careful work done. This has generally been determined to be the case.

HALTING DETERIORATION OF THE PUBLIC LANDS

Chairman HAYDEN. You have requested an increase of $600,000 to accelerate the program of protective measures needed to halt further deterioration of public lands. Would you please enlarge on this a bit for the committee?

Mr. STODDARD. Yes, sir. We have identified some nearly 6 million acres of so-called fragile watershed lands in the West where there is active erosion going on, largely man- and livestock-induced. For the rehabilitation of these lands we would like to get a program moving more rapidly for checking the erosion that is taking place and increasing the infiltration of water into the subsoil for better growth of vegetation and reduction of floods, and so on. This would be a beginning of a program for this particular purpose.

RESOURCE CONSERVATION AND DEVELOPMENT PROJECTS

Chairman HAYDEN. Also, comment on the increase of $490,000 which you have requested for resource conservation and development projects.

Mr. STODDARD. These are projects that are jointly worked out with the Department of Agriculture. The situation has been that the Department of Agriculture, through its Soil Conservation Service, and other agencies, has taken fairly large areas, developed work plans for them, which include public lands. They would get money to go ahead and work on the private lands, but we did not have any funds identified for the work on the public lands, so that the programs could go forward together.

This is an effort to try to correlate the programs of the two Departments with respect to these specific, planned areas.

Chairman HAYDEN. That is cooperation.

Mr. STODDARD. We had to bury some axes and hatchets to do this and face up to it, Senator; yes.

CONSERVATION PROJECTS UNDER PUBLIC LAW 566

Chairman HAYDEN. What is the total amount which will be available for cooperative planning of conservation practices under Public Law 566, and why do you need an increase of $150,000 over the amount available for fiscal year 1965?

Mr. STODDARD. There are some active projects which are underway, I think one in Nevada and one in Utah. We can supply that specifically for the record. But where there are commitments of this kind that are required of us in the watershed protection work that is planned on public lands as part of this total job. This is another of the same kind of cooperative programs.

(The information referred to follows:)

The Bureau presently is participating in Public Law 566 projects in Wyoming, California, Colorado, and Nevada.

1965 SUPPLEMENTAL FOR FIRE PROTECTION AND SUPPRESSION

Chairman HAYDEN. I know there is to be a supplemental estimate for fire protection and suppression inasmuch as last year, as usual, only $400,000 was provided. What is your estimate of the total supplemental amount you will need for fiscal year 1965?

Mr. STODDARD. $3.2 million is our estimate.

Mr. BEIRNE. This is a little higher than it has been in some years. The total cost is $3.6 million with $400,000 being appropriated means a supplemental of $3.2 million. This is largely because of the fires involved in Nevada.

GENERAL ADMINISTRATION

Chairman HAYDEN. For "General administration" you are asking $1,961,000, $96,000 more than provided in the last fiscal year. Please indicate to the committee the need for this additional amount and the additional number of permanent positions estimated for the coming year.

Mr. STODDARD. I will let Mr. Beirne handle that, Mr. Chairman. This is his area of responsibility.

Mr. BEIRNE. In the last 8 years the Bureau has had program increases which have doubled the size of its activity. During this period, there has been no program increase in general administration. This is necessary if we are to even attempt to service the increased programs. We have done it in the past by consolidations of our functions. We can't do this any longer. We have reduced the numbers of our auditors and we do not do the job we should be doing in personnel management. The request provides 11 additional positions.

CONSTRUCTION

Chairman HAYDEN. For "Construction" the Bureau of Land Management requests $1,600,000 in fiscal year 1966, divided equally between buildings and sanitation and protection facilities. The justification for this will be placed in the record.

(The justification referred to follows:)

BUREAU OF LAND MANAGEMENT

CONSTRUCTION

Appropriation, 1965	$1,100,000
Unobligated balance from prior years	350,403
Total available for obligation	1,450,403
Decreases:	
Access roads on public domain lands	146,434
Buildings	603,969
Sanitation and protection facilities	700,000
Subtotal	1,450,403
Increases:	
Buildings	800,000
Sanitation and protection facilities	800,000
Total	1,600,000
Total estimate for 1966	1,600,000

Analysis by activities

Activity	Amount available 1965	Fiscal year 1966			
		Unobligated balance from prior years	Budget estimate	Estimated total available	Total available 1966 compared to total 1965
1. Access roads	$146,434				−$146,434
2. Buildings	603,969		$800,000	$800,000	+196,031
3. Sanitation and protection facilities	700,000		800,000	800,000	+100,000
Total	1,450,403		1,600,000	1,600,000	+149,597

1. Access roads, 0

No estimate is furnished for access roads in fiscal year 1966 under this title in view of the authorization by the 87th Congress of a new section of the Federal Aid Highway Act entitled "Public Land Development, Roads and Trails." Small amounts that were unobligated and unexpended as of June 30, 1964, are being utilized under this appropriation during fiscal year 1965 to complete authorized roads and building projects.

2. Buildings, $800,000

The estimate of $800,000 is an increase of $400,000 over funds appropriated in 1965 exclusive of $203,969 in carryover funds which also are available in that year.

The amount of $500,000 included in this estimate is for continuation of the second phase of the Anchorage fire control facilities. This project was approved for initial construction in fiscal year 1965 and scheduled for completion in fiscal year 1967 at a total estimated cost of $1,100,000. Subsequent to passage of the appropriation, a modification of the initial plan was necessitated by the Alaska earthquake and the city of Anchorage post-earthquake reconstruction program which involved the proposed site.

The Bureau now plans construction at a new site location adjacent to the Campbell airstrip on Fort Richardson Military Reservation. This new site is highly desirable for Bureau operations. Because of the necessity of providing acceptable access and gas, water, and sewage disposal facilities not required at the original location, the total project cost will be increased an estimated $200,000 to a total of $1,300,000. Approval of this program change has been received from both the House and Senate Appropriations Committees. The Bureau is proceeding with site plans and minor alterations of the building plans to conform to the new location and with negotiations with the Department of Defense for

release of the site to the Bureau. The $400,000 already available and this request for $500,000 will permit orderly development of this facility to be completed in fiscal year 1967.

In addition $300,000 is requested to provide new or more adequate facilities for Bureau operations at several locations in the Western States. These projects will provide buildings consistent with Bureau needs and are located in areas where adequate rental facilities are not available. Descriptions of projects follow:

Miles City, Mont., office and warehouse	$145,000
Vale, Oreg., yard and oil house	25,000
Price, Utah, district yard surfacing and fencing	19,000
Rawlings, Wyo., shop and yard facilities	80,000
Survey and design	31,000

The amount of $31,000 will be used for advance engineering services on buildings scheduled for construction in future years. Such services will provide information upon which to base more accurate construction estimates at the time building projects are proposed. Advanced engineering examination will permit an upgrading in the professional quality of the final construction plans, and permit selection of building sites most advantageous to Bureau operations.

3. Sanitation and protection facilities, $800,000

The estimate of $800,000 is an increase of $100,000 over funds appropriated in fiscal year 1965.

Public lands by law are open to the general public, and annually millions of Americans are using these public lands for camping, picnicking, pack trips, hunting, fishing, water sports, and many other kinds of recreation. It is estimated that nearly 20 million visits will be made for recreation purposes to the public lands during 1966. For the most part these people will find no recreation facilities available. As a result, the land itself will be abused, streams will be polluted, trash left over the grounds, and in many instances devastating fires will result from unattended or unextinguished campfires.

At areas now receiving use, minimum facilities such as tables, fireplaces, and campsites, will be constructed thereby reducing the potential man-caused fire hazard and the health and sanitation problem. Pollution, while not visibly as devastating as fire, is equally as damaging to the resources and to the using public. State and local health officials in several areas have expressed concern about the public menace caused by pollution of the watershed and streams on public lands which furnish water for domestic uses.

The Bureau of Land Management encourages States and local governments to purchase or lease public lands under various land laws for recreation purposes and to accept the responsibility for their development. However, in many cases due to the low tax base and other reasons, a substantial number of the heavily used areas cannot be developed by State or local governments and, therefore, the task of furnishing sanitation and protection facilities must be borne by the Bureau of Land Management.

Recreation is an important facet in the multiple-purpose program being conducted by the Bureau. It is recognized that extensive public use of the vast areas of public land presents a tremendous challenge to land management. However, at least one major step is clear. Provision must be made for construction of minimum sanitation and protection facilities in the areas of heaviest use to reduce fire and pollution danger to the resources and the using public. The proposed construction will provide minimum facilities such as safe drinking water, safe places to build fires, tables, toilet facilities, and garbage and litter receptacles.

Details of the sanitation and protection construction program are set forth as follows:

State	Location	Cost
California	Owens Valley	$135,000
Colorado	Mud Spring	35,000
	Lake Fork	10,000
	Miracle Rock	15,000
	Southwest Colorado archeological areas	7,000
Idaho	Salmon River	17,000
	Rabbit Springs	14,000
Montana	Madison River	100,000
Nevada	Red Rock Canyon	40,000
	Wildhorse Reservoir	114,000
New Mexico	Santa Cruz Reservoir	30,000
Oregon	Snake River	13,000
	Prineville Reservoir	39,000
	Jordan Crater	18,000
	Twin Springs	7,000
Utah	Canyon Rims	37,000
	Grand Gulch	41,000
	Henry Mountains	25,000
Wyoming	Five Springs	30,000
	Green Mountain	26,000
Survey and design of facilities		47,000
Total		800,000

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$415,583	$1,450,403	$1,600,000	+$149,597
Unobligated balance available, start of year	−465,986	−350,403		+350,403
Unobligated balance available, end of year	350,403			
Appropriation	300,000	1,100,000	1,600,000	+500,000
Obligations by objects:				
11.0 Personnel compensation	62,225	159,000	283,000	+124,000
12.0 Personnel benefits	4,085	8,000	13,000	+5,000
21.0 Travel and transportation of persons	12,462	20,000	25,000	+5,000
22.0 Transportation of things	4,063	7,000	10,000	+3,000
23.0 Rent, communications, and utilities	13,243	3,000	3,000	
24.0 Printing and reproduction	884	1,000	1,000	
25.1 Other services	24,805	201,403	200,000	−1,403
25.2 Services of other agencies	2,000	2,000		−2,000
26.0 Supplies and materials	23,807	55,000	60,000	+5,000
31.0 Equipment		3,000	5,000	+2,000
32.0 Lands and structures	268,009	991,000	1,000,000	+9,000
Total obligations	415,583	1,450,403	1,600,000	+149,597

ANCHORAGE FIRE CONTROL FACILITIES

Chairman HAYDEN. With regard to the proposed new fire control facilities at Anchorage, has the Department of Defense yet transferred administrative control of the area to the Bureau of Land Management? If not, when do you expect this will be accomplished?

Mr. STODDARD. I believe it has been. Mr. Remington?

Mr. REMINGTON. The transfer is in process. The Department of Defense locally in Alaska has agreed to the transfer. It is just a question of getting the paperwork done.

Chairman HAYDEN. When do you think it will be consummated?

Mr. REMINGTON. Almost any date it can be finalized. Just any time.

CONSTRUCTION

Chairman HAYDEN. In addition to the $500,000 requested for the Anchorage construction, $300,000 is asked for construction in other places. A summary of these buildings has been included in the record. Would you please comment briefly on each of the specific projects?

Mr. REMINGTON. You have the Alaska. The Miles City warehouse is a new installation for management of that area. It consists of an office, a warehouse, and related facilities. The present facilities are rental facilities which are not adequate to take care of the work.

The Vale yard and oil house work is simply a continuation of the development of that facility at Vale.

The Price yard and warehouse is to finish up the installation at Price. In other words, there is a new office and warehouse facility there. This is just to pave the yard and finish up the facility, to build a security fence around it.

The Rawlins shop is one of the central facilities within Wyoming, and this is a continuation of facilities there to build an equipment storage shed and a shop for repair of equipment, things of that nature, at Rawlins.

SANITATION AND PROTECTION FACILITIES

Chairman HAYDEN. For construction of "Sanitation and protection facilities" you estimate $800,000. Would you please place in the record the locations of the projects for which funds were provided in fiscal year 1965 and for which funds are requested in fiscal year 1966, the total cost expected at each location, and the amount of the 1965 funds expended at each of the locations, as well as the status of construction work in each of the locations?

Mr. STODDARD. Yes, sir.

(The information referred to follows:)

Sanitation and Protection Facilities Program Fiscal Year 1965 and Fiscal Year 1966

Location	Total project cost	Obligational authority		Obligations to Jan. 31, 1965	Status of 1965 projects
		Fiscal year 1965	Fiscal year 1966		
Arizona: Hualpai Mountain	$36,000	$36,000		$11,503	Contract awarded. Construction to begin within 60 days, dependent on weather.
California: Owens Valley	850,000	157,000	$135,000	7,726	Site plans completed. Contract to be awarded by Apr. 1, 1965.
Colorado:					
Gypsum	33,000	33,000		1,635	Plans completed. Contract will be awarded in March.
Five Points Placer	28,000	15,000			Fieldwork complete. Contract will be awarded in May.
Drowsy Waters	82,000	10,000			Do.
Mud Springs	35,000		35,000		
Lake Fork	10,000		10,000		
Miracle Rock	27,000		27,000		
Southwest Arches area	7,000		7,000		
Idaho:					
Salmon River	101,000	47,000		6,286	Plans will be completed in early March. Contract to be awarded in April.
Rabbit Spring	14,000		14,000		
Montana: Madison River	314,000	80,000	100,000	13,695	Plans complete. Contract to be awarded May 15.
Nevada:					
Red Rock Canyon	80,000	40,000	40,000	2,321	Final review of plans in process. Contract to be awarded June 1, 1965.
Wild Horse Reservoir	289,000	80,000	114,000	9,526	Do.
New Mexico:					
3-river pictograph	20,000	14,000		3,720	Project in advertisement. Bids to be opened Feb. 26, 1965.
Santa Cruze Reservoir	44,000		30,000		
Oregon:					
Lower Deschutes River	420,000	50,000		4,221	Plans 90 percent completed. Delay caused by access problems.
Steens Mountain	132,000	20,000		1,868	Plans all complete. Delay due to washout of 2 bridges.
Snake River	55,000		13,000		
Prineville Reservoir	160,000		39,000		
Jordan Craters	18,000		18,000		
Twin Springs	7,000		7,000		
Utah:					
East Canyon rims	246,000	30,000	37,000	4,495	Site plans completed. Sanitary facilities are in place. Areas are fenced. Trails have been constructed. Contracts are ready for additional fencing and parking lot barriers. All work will be completed this fiscal year.
Grand Gulch	76,000		41,000		
Henry Mountains	37,000		25,000		
Wyoming:					
Five Springs	78,000	48,000	30,000	2,982	Site plans have been completed. All contracts to be awarded in March with construction completed by July 1965.
Green Mountain	64,000		26,000		
Survey and design, all States		40,000	47,000	2,253	
Total	3,263,000	700,000	800,000	72,231	

LAND AND WATER CONSERVATION LAW

Chairman HAYDEN. Are any of these projects included within the programs recommended by the Bureau of Outdoor Recreation which would be eligible for funds under the land and water conservation fund?

Mr. STODDARD. No, sir; they don't fit under that. That program does not make funds available for facilities on Federal lands.

PUBLIC LANDS DEVELOPMENT ROADS AND TRAILS

(Liquidation of Contract Authorization)

Chairman HAYDEN. Next is the request relating to public lands development roads and trails. There will be placed in the record the justification for an estimate of $2 million. This is the same amount appropriated for fiscal year 1965.

(The justification referred to follows:)

JUSTIFICATION

Appropriation, 1965	$2,000,000
Decrease in construction of public domain roads and trails	2,000,000
Subtotal	
Increase in construction of public domain roads and trails	2,000,000
Total estimate, fiscal year 1966	2,000,000

Analysis by activities

	Actual, 1964	Estimate, 1965	Decreases	Increases	Estimate, 1966
Public lands development roads and trails	$760,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000

Status of cash authorization for liquidation of contract authorization

	1964	1965	1966
Appropriation	$760,000	$2,000,000	$2,000,000
Unexpended balance brought forward		49,768	
Total available	760,000	2,049,768	2,000,000
Less expenditures	710,232	2,049,768	2,000,000
Unexpended balance	49,768		

Need for funds.—The Federal Aid Highway Acts of 1962 and 1964 have authorized obligational authority for this program. During fiscal year 1964, the first year of this program, the Bureau had $2 million in obligational authority and $760,000 in liquidating cash appropriations. As a consequence $1,015,379 was obligated and $710,232 expended. The amount of available liquidating cash precluded obligation of the field program as many of the Bureau's projects are of such size that construction can be completed within the same fiscal year in which contract authorization is made available. In fiscal year 1965 the appropriation for liquidating cash of $2 million provides full financing for the new contractual authority available in that year. The same amount is requested in fiscal year 1966 to continue this program. On this basis, $4,760,000 in liquidating cash will be provided cumulatively through fiscal year 1966 to support $6 million in cumulative contractual authority. This approach provides cash to the extent of 79

percent of available contractual authority, consistent with the Bureau's experience in operating this program. A lesser amount would hinder performance of authorized projects.

An explanation of planned use of new contractual authority available in fiscal year 1966 follows:

CONTRACTUAL AUTHORIZATION PROGRAM (OBLIGATIONS)

Section 2 of the Federal Aid Highway Act of 1964 authorized $2 million in contractual authority for public lands development roads and trails for the fiscal year ending June 30, 1966, and $2 million for the fiscal year ending June 30, 1967.

The $2 million authorized in fiscal year 1966 will permit construction of 120 miles of grading and 22 miles of surfacing on 16 projects. Construction scheduled is based upon requirements in all phases of the resource management, grazing, forestry, protection, rehabilitation, minerals, recreation, and wildlife programs in the promotion of multiple use of the public lands. The close association of adequate access and the execution of the Bureau's responsibilities of management, utilization, and protection of the public lands is illustrated in the following examples:

King Range Road, Humboldt County, Calif. ($150,000): A 4-mile segment of a 46-mile continuing road project which when completed will provide access to approximately 53,000 acres of public lands in the scenic King Range area and the Honeydew Creek Resource Conservation Area. Limited access now precludes full utilization of the area for timber production, camping, picnicking, hunting, fishing, and curtails adequate fire protection and resource administration. The completed road will furnish access for the annual sale of 5 to 6 million board feet of timber; consequently since logging trucks, recreationists and normal through traffic will be using the road concurrently, a two-lane road will be constructed in the interest of safety.

Centennial Range Road, Beaverhead County, Mont. ($220,000): A 7-mile segment of a 22-mile continuing road project located in the Centennial Range. Not only is the road needed for management, development, and protection of the area but it will also provide access for hunters, fishermen, trappers, prospectors, and recreationists. It will also serve as a scenic route for motorists crossing the Continental Divide into Yellowstone National Park. This first segment will provide access to approximately 40 million board feet of merchantable timber that is being severely damaged by an infestation of the spruce budworm. Failure to harvest this infected timber will create a potential fire hazard and cause a loss of receipts to the Government as well as increase fire protection and suppression costs and allow a wanton waste of the available resource.

A summary of the road program by State follows:

Arizona	$64,000	South Dakota	$50,000
California	377,000	Utah	135,000
Colorado	93,000	Wyoming	139,000
Idaho	141,000	Location, survey, design and easement acquisition	245,000
Montana	291,000		
Nevada	62,000		
New Mexico	69,000	Total	2,000,000
Oregon	334,000		

Contract authorization and liquidation program

	Contract authority available	Obligations	Unliquidated obligations, prior year	Total obligations	Expenditures	Unliquidated obligations carried forward
Fiscal year 1964: Public lands development roads and trails (total)	$6,000,000	$1,015,379	----------	$1,015,379	$710,232	$305,147
Fiscal year 1965: Public lands development roads and trails (total)	6,985,000	2,984,621	$305,147	3,289,768	2,049,768	1,240,000
Fiscal year 1966: Public lands development roads and trails (total)	6,000,000	2,000,000	1,240,000	3,240,000	2,000,000	1,240,000

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$1,015,379	$2,984,621	$2,000,000	−$984,621
Unobligated balance available start of year (contract authorization)	−2,000,000	−4,984,621	−4,000,000	+984,621
Unobligated balance available end of year (contract authorization)	4,984,621	4,000,000	4,000,000	
Unfunded balance, start of year	2,000,000	5,240,000	5,240,000	
Unfunded balance carried forward	−5,240,000	−5,240,000	−5,240,000	
Appropriation to liquidate contract authorization	760,000	2,000,000	2,000,000	
Obligations by objects:				
11.0 Personnel compensation	505,533	580,000	609,000	+29,000
12.0 Personnel benefits	31,323	34,621	36,000	+1,379
21.0 Travel and transportation of persons	44,572	55,000	55,000	
22.0 Transportatioh of things	17,921	20,000	20,000	
23.0 Rent, communications, and utilities	3,409	6,000	6,000	
24.0 Printing and reproduction	1,342	4,000	4,000	
25.1 Other services	69,234	175,000	145,000	−30,000
26.0 Supplies and materials	16,126	65,000	67,000	+2,000
31.0 Equipment	20,875	55,000	60,000	+5,000
32.0 Lands and structures	305,044	1,990,000	998,000	−992,000
Total obligations	1,015,379	2,984,621	2,000,000	−984,621

PROPOSED ROAD PROGRAM

Chairman HAYDEN. You can comment for the record on your proposed road program.

Mr. STODDARD. Mr. Remington also has this in his area.

Mr. REMINGTON. The road program is $2 million in total. We have a list of projects that are all a part of our general transportation system which we have established for the development and management of the lands.

Chairman HAYDEN. I assume this is just a step in road construction. You will still nave a program every year, will you not?

Mr. REMINGTON. We hope to. At this rate, it will be for a good many years. Our estimated cost of the eventual completion of the program is about $1.6 billion, and at this rate we will be at it for quite a while.

Mr. STODDARD. As you know, Mr. Chairman, there is considerable use of the public lands, people driving over them, where we don't have a road system, and sometimes this is resulting in some serious misuse. We would like to gradually expand or extend our road system so that we can channel this use of vehicles on the public lands.

Chairman HAYDEN. I am aware of that. There are more and more people traveling by cars to see the country, and they go everywhere.

Mr. STODDARD. They drive right on over the plains and deserts.

OREGON AND CALIFORNIA GRANT LANDS

Chairman HAYDEN. For fiscal year 1966 you propose an appropriation of $8,545,000 for the Oregon-California grant lands. The justification will be placed in the record.

(The justification referred to follows:)

JUSTIFICATION

Appropriation, 1965		$10,125,000
Unobligated balance from prior years		4,418,918
Total available for obligation		14,543,918
Decreases:		
Construction and acquisition of access roads	$11,799,484	
Forest development and protection	1,905,050	
Operation and maintenance	839,384	
		14,543,918
Subtotal		
Increases:		
Construction and acquisition of access roads	$6,145,000	
Forest development and protection	1,600,000	
Operation and maintenance	800,000	
		8,545,000
Budget estimate, 1966		8,545,000

Analysis by activities

Activity	Amount available 1965	Fiscal year 1966			
		Unobligated balance from prior years	Budget estimate	Estimated total available	Total available 1966 compared to total 1965
1. Construction and acquisition	$11,799,484		$6,145,000	$6,145,000	−$5,654,484
2. Forest development and protection	1,905,050		1,600,000	1,600,000	−305,050
3. Operation and maintenance	839,384		800,000	800,000	−39,384
Total	14,543,918		8,545,000	8,545,000	−5,998,918

Under this title, 25 percent of the gross receipts from sales of timber and other products on the revested Oregon & California Railroad grant lands is appropriated, bringing together under one appropriation all reimbursable charges against the Oregon and California grant lands fund.

It provides for the construction, acquisition, operation, and maintenance of access roads and improvements and for reforestation and protection on the revested Oregon & California Railroad grant lands and on other Federal lands in the Oregon and California grant lands counties of Oregon.

Existing legislation provides that the O. & C. counties shall receive, in lieu of taxpayments, up to 75 percent of the gross revenues from these lands. The Association of O. & C. Counties has recommended that one-third of the amount due from receipts, or 25 percent of the total gross receipts, be appropriated for access road construction and maintenance, reforestation, and improvements and be reimbursed to the Treasury from funds otherwise payable to the counties.

The estimate for fiscal year 1966 for this appropriation totals $8,545,000, a decrease of $1,580,000 from the total of $10,125,000 estimated for fiscal year 1965. Receipts available to this appropriation include in 1965 the very large volume sales of salvage timber from the 1962 and 1963 windstorms. The 1966 estimate reflects a more normal program.

In late December 1964 major floods struck the Pacific Northwest. Many Bureau access roads in western Oregon have been damaged and the extent and cost of repairs that will be necessary are not known at this time. Consequently it is expected that the details of the road construction programs for fiscal years 1965 and 1966 may be modified extensively in order to give priority to the repair and reconstruction of existing roads. Other aspects of the O. & C. program financed by this appropriation also may be affected.

(1) Construction and acquisition, $6,145,000

The estimate of $6,145,000 is a decrease of $1,480,000 from the amount available for 1965 exclusive of carryover funds in the amount of $4,174,484. The

program is for the construction of access roads and recreation facilities in the valuable timber lands in western Oregon.

(*a*) *Access roads.*—The amount of $5,445,000 is a reduction of $1,930,000 from the amount available for 1965 and is based on anticipated receipts. These funds will be used for the construction, improvement, and acquisition of roads and bridges in support of the management of the O. & C. revested lands in western Oregon, including roads to be constructed by the Forest Service on O. & C. lands administered by that agency. Also included is reconnaissance, survey, and design, rights-of-way agreements, and acquisitions for future construction projects.

The access road system is fundamental to and quite often the controlling factor in the development, protection, and management of forest lands. The continued expansion of this system into undeveloped areas of mature, overmature, decadent, and scattered salvage timber stands is essential to a well-balanced schedule of timber harvest. The failure to provide adequate access often results in prematurely cutting developed drainages of thrifty rotation-age stands, and is disruptive to long-run maximum timber yields. Providing access affords the bidding opportunities and competitive interest to all prospective buyers for timber products.

These roads are used in all management phases of forestry, including protection, rehabilitation, inventories, transportation of both Government and private timber, as well as public access for recreation, and other purposes.

The program for fiscal year 1966 includes surfacing of 51 miles, grading of 21 miles, bridge construction, rock production for road repair and surfacing, and acquisition of 180 easements. At the end of fiscal year 1964, 442 miles of mainline access road have been completed and 83 miles were under construction. Acquisition of easements and rock production for surfacing are kept current to the timber sale program.

(*b*) *Recreation construction.*—The estimate of $700,000 is an increase of $450,000 over the amount available in fiscal year 1965. This program increase is for facilities to be developed by the Forest Service on O. & C. lands administered by that agency. The remaining $250,000 for construction by this Bureau is identical to the amount available in fiscal year 1965.

Through timber sales and the access road program, the Bureau has opened many previously remote areas of high recreational value for general public use. The unregulated use of these areas by an increasing number of the public create fire and pollution hazards which endanger both the resource and the using public. The construction of recreational facilities including provisions for access thereto began in fiscal year 1961 in the O. & C. area. This continuing program minimizes or eliminates the hazards of unregulated use by providing potable water supplies and sanitary, picnic, campfire, and camping facilities in carefully selected areas.

Details of the construction and acquisition program are shown in the following tables:

Fiscal year 1965 program

Availability:		
Unobligated balance as of June 30, 1964, brought forward		$4,174,484
4th quarter fiscal year 1964 receipts warranted in July 1964		3,253,000
Estimated authorization, fiscal year 1965		7,625,000
Less estimated 4th quarter fiscal year 1965 receipts warranted in July 1965		−3,253,000
Available for 1965 program		11,799,484
Utilization:		
Bureau of Land Management:		
Planning, reconnaissance	$485,000	
Acquisition	979,890	
Recreation	44,400	
		1,509,290
Bureau of Public Roads:		
Surveys	300,000	
Recreation	250,000	
Construction	7,932,674	
		8,482,674
Forest Service, roads		1,807,520
Total, 1965 program		11,799,484

Details of road construction program, BLM lands, fiscal year 1965

Continued work on going projects	$1,155,203
Rock Creek, grading 10 miles	1,120,000
Cow Creek, grading 3 miles	760,000
South Nestucca, grading 14 miles, surfacing 7 miles	950,000
Cow Creek, surfacing 19 miles	430,000
South Fork Alsea, grading 6 miles	415,000
Burnt Mountain, surfacing 22 miles	815,000
Middle Creek, surfacing 6 miles	250,000
Tyee, surfacing 11 miles	470,000
Hellsgate Bridge	650,000
Miscellaneous rock production	717,471
Miscellaneous small bridges	200,000
Total, 1965 road construction program, BLM lands	7,932,674

FISCAL YEAR 1966 PROGRAM

Availability:		
Estimated 4th quarter, fiscal year 1965, receipts warranted in July 1965		$3,253,000
Estimated authorization, fiscal year 1966		6,145,000
Less estimated 4th quarter, fiscal year 1966, receipts warranted in July 1966		−3,253,000
Available for 1966 program		6,145,000
Utilization:		
Bureau of Land Management:		
Planning, reconnaissance	$510,000	
Acquisition	460,000	
Recreation	250,000	
		1,220,000
Bureau of Public Roads:		
Surveys	250,000	
Construction	3,675,000	
		3,925,000
Forest Service:		
Roads	550,000	
Recreation	450,000	
		1,000,000
Total 1966 program		6,145,000

Details of road construction program, BLM lands, fiscal year 1966

Twin Sisters, surfacing 16 miles	$620,000
Siuslaw, surfacing 6 miles	190,000
Rock Creek, surfacing 5 miles	165,000
Little Lobster Road, surfacing 5 miles	200,000
Deadman, surfacing 5 miles	260,000
Elk Creek, surfacing 5 miles	200,000
Dovre Creek, surfacing 3 miles	120,000
Soda Creek, grading 6 miles	250,000
Union Creek, surfacing 4 miles	160,000
West Fork Cow Creek, surfacing 2 miles	120,000
Cantrall, segment B, grading 5 miles	200,000
Lost Creek, grading 10 miles	300,000
Miscellaneous rock production	660,000
Miscellaneous small bridges	230,000
Total 1966 road construction program, BLM lands	3,675,000

(2) *Forest development and protection, $1,600,000*

(a) *Forest development.*—The estimate of $850,000 is a decrease of $250,000 from the amount available for 1965, exclusive of carryover funds. This reduction is possible due to the scheduled elimination of the prewindstorm reforestation

backlog on the O. & C. lands in fiscal year 1965. In 1966, as in 1965, forest development will be totally financed from the receipt limitation "O. & C. grant lands" appropriation.

With the increased national demands for timber products, and in support of sustained yield forest management, all potential timber producing lands must be fully utilized. The estimate for this program will provide for the reforestation of 25,000 acres. This will allow for reforestation of areas harvested on O. & C. lands on a current basis; the elimination of reforestation backlog on intermingled public domain lands will be accomplished by the end of fiscal year 1967. This long-term investment will produce an estimated average annual timber growth of 12.5 million board feet, valued at current market prices at over $312,000.

Even under most favorable conditions only one-half of the areas scheduled for reforestation could be expected to regenerate naturally in 10 years. If this course of action were taken, it could result in a growth loss value of over $1.5 million in that decade. In addition to the economic considerations if denuded areas are not reforested, critical topsoil loss may result from erosion with resulting siltation of streams and reservoirs and site deterioration.

The program includes 6,500 acres of site improvement work to prepare areas for planting and seeding. These areas, capable of producing valuable commercial timber, are presently overgrown by brush and grass which precludes natural reforestation. In addition, 1,500 acres of stand improvement to accelerate growth on selected young timber stands is planned.

Although all potential timber producing areas requiring treatment will have been reforested on O. & C. lands by the end of fiscal year 1965, a full appraisal of the results of this increased reforestation effort has not been completed. Items which may affect results of the treatment include animal damage, planting failures and salvage areas which have failed to reforest under natural conditions. Upon further examination and appraisal of findings, it may be necessary to increase this program accordingly.

(*b*) *Forest protection, western Oregon.*—The estimate of $750,000 is an increase of $50,000 consisting of—

(1) An increase of $30,000 to cover increases in contract costs.

(2) An increase of $20,000 for hazard reduction and construction of firebreaks and trails.

Contracts for fire protection on approximately 2.4 million acres of forested O. & C. and public domain lands in western Oregon are negotiated with the State of Oregon and the Forest Service on a rate per acre that is based on their average cost for the last 5 years for fire suppression, maintenance, replacement, additional facility and equipment, and the fire prevention program. The average cost has increased thus necessitating an increased contract price. The Bureau must also contribute to pressuppression and control measures by removal of snags, slash disposal, and development of firebreaks and trails, thus reducing fire incidence.

Work to be performed by the Bureau will consist primarily of hazard reduction (snag felling and flash fuel disposal) on 650 acres. Also, 95 miles of firebreaks and trails will be constructed and/or maintained to reduce fire hazard in specific blowdown areas and in areas of heavily concentrated public use. Closer supervision of contracts for compliance to specifications is planned and, in addition, a more concentrated effort on investigation of man-caused fires and an expanded program of law enforcement is contemplated.

The acreage and estimated costs for fiscal year 1966 are:

	Contract cost
2,385,000 acres protected	$656,000
Snag felling, slash disposal, firebreaks, and trails	68,000
Supervision and inspection	26,000
Total	750,000

(*3*) *Operation and maintenance, $800,000*

The increase of $100,000 over the amount available for fiscal year 1965, exclusive of carryover funds, is to provide adequate protection and maintenance of constructed and acquired access roads and recreation facilities on Bureau lands in western Oregon.

An amount of $50,000 of the requested increase will be used to keep roads constructed in 1965 in a usable condition. During fiscal year 1965 the Bureau will construct with O. & C. appropriation funds, or will acquire under terms of timber sale contracts, over 400 miles of access road which will be retained and

made a part of the transportation system. Until these roadbeds have stabilized, heavy maintenance costs can be expected.

Effective and regular road maintenance is essential in western Oregon to insure the movement of both Government and private timber and to avoid extensive repairs. These roads receive heavy logging use during the rainy season, and if inadequately maintained, are highly susceptible to rapid deterioration. Washouts alone can entail considerable relocation of adjacent undamaged segments of the affected road, often requiring additional easement acquisition as well as increased capital investment. Temporary road closure due to improper maintenance can prevent replenishing depleted mill log inventories during the critical winter and spring months, resulting in hardship to loggers and mill operators.

In addition to maintenance performed with appropriated funds, fees for road maintenance are paid by purchasers of Government timber as a condition of timber sale contracts and by timber haulers using the roads under permits.

An increase of $50,000 is requested to adequately operate and maintain new facilities constructed during fiscal year 1965 and to perform additional maintenance on already constructed facilities. Recreation use by the public has expanded. As the facilities become better known, the public is making more intensive use for a longer period of time. Thus, more operation and maintenance funds are required. Also, many of the recreation sites are within heavy rainfall areas and the interior roads and parking areas, etc., are subject to a high rate of deterioration if not properly cared for. In addition, this heavy rainfall necessitates extensive spring maintenance to get the facility ready for operation before the first visitors arrive. The total amount of $100,000 included in this estimate for maintenance of recreation facilities includes disposing of garbage, maintaining firewood supplies, servicing sanitary facilities, repairing and maintaining equipment, and testing water supplies.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$7,775,305	$14,543,919	$8,545,000	−$5,998,919
Unobligated balance available, start of year	−2,546,524	−4,418,919		+4,418,919
Unobligated balance available, end of year	4,418,919			
Appropriation	9,647,700	10,125,000	8,545,000	−1,580,000
Obligations by object:				
11.0 Personnel compensation	1,689,498	1,852,000	1,848,000	−4,000
12.0 Personnel benefits	114,495	124,000	123,000	−1,000
21.0 Travel and transportation of persons	198,911	204,000	183,000	−21,000
22.0 Transportation of things	53,445	53,000	50,000	−3,000
23.0 Rent, communications, and utilities	31,718	33,000	33,000	
24.0 Printing and reproduction	3,000	6,000	3,000	−3,000
25.1 Other services	624,846	907,867	652,000	−255,867
25.2 Services of other agencies	302,000	302,000	293,000	−9,000
26.0 Supplies and materials	193,019	436,502	475,000	+38,498
31.0 Equipment	48,536	26,550	26,000	−550
32.0 Lands and structures	4,515,837	10,599,000	4,859,000	−5,740,000
Total obligations	7,775,305	14,543,919	8,545,000	−5,998,919

ESSENTIALS OF PROPOSED PROGRAM

Chairman HAYDEN. Please explain to the committee the essentials of the proposed program.

Mr. STODDARD. Mr. Zaidlicz, do you want to discuss this item?

Mr. ZAIDLICZ. This has largely to do with the timberlands of western Oregon as shown in our justification. We have a program of supplying something in the neighborhood of 1.2 billion board feet of timber for the local economy. Coupled with that, we have the problem of recent storms and the resultant road and bridge damage, which have been mentioned. We will have to rebuild many of our established transportation routes. We had the 1962–63 windstorms

where the concentrations of the blowdown timber have been successfully extracted during the last summer. In addition to that problem, we have some new infestations of bugs that we had hoped would not occur. With storm damage, the inaccessibility because of the road losses, and the possible outbreak of our bugs, our biggest problem will be to maintain the even flow of timber into the local dependent mills.

Chairman HAYDEN. As I understand it, the land is divided, and you do not have sole ownership.

CHECKERBOARD LANDOWNERSHIP

Mr. ZAIDLICZ. That is true. It is a huge checkerboard.

Chairman HAYDEN. What kind of cooperation did you get with the other landowners?

Mr. ZAIDLICZ. It varies considerably, sir. In some cases it is excellent and in others it is a very difficult relationship. This poses another problem we have so far as access roads are concerned. In order to get into any Federal timber we must cross private lands, involving a very complicated system of easements, the use of roads, the construction of roads and the amortization of road costs. Coupled with that, we have the expanding problem of granting permits to private landowners to cross the Federal land to remove their timber. This calls for a lot of planning, a lot of detailed work, in order to preclude the building of duplicate road systems and to develop transportation routes that will serve many areas rather than just one. It is very complicated management.

The timber stands are some of the best that we have in the Nation, and warrant the time and effort we must put into their management.

Chairman HAYDEN. It is a very difficult problem because the lumber company is only interested in removing its timber. They then are through with that road, whereas you have continuous need for it.

Mr. STODDARD. That is right. It is part of the management program.

RANGE IMPROVEMENTS

Chairman HAYDEN. I will place in the record your statement of the need for $1,455,000 to be derived from the grazing fee receipts and to be used for range improvements.

(The statement referred to follows:)

JUSTIFICATION

Range improvements, Bureau of Land Management (receipt limitation)

	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Appropriation, 1964: $1,247,730	$1,396,668	$1,455,000	+$58,332

Need for increase.—An increase of $58,000 is estimated based on the anticipation of a small increase in receipts. This is an annual indefinite appropriation derived from grazing fee receipts in accordance with sections 4 and 10 of the Taylor Grazing Act (48 Stat. 1269), as amended. Included also are receipts from Bankhead-Jones Farm Tenant Act lands transferred from the Department of Agriculture by various Executive orders.

Plan of work.—Approximately 177 million acres of public grazing lands which include over 2,500,000 acres of Bankhead-Jones lands will require range improvements to preserve the forage resources. Twenty-five percent of grazing fee receipts from public lands outside grazing districts, all receipts above 20 cents per animal unit month on Bankhead-Jones lands, and 33⅓ percent of receipts from other grazing lands inside grazing districts are designated as a range improvement fund which are applied to improvements on the range. Receipts in fiscal year 1966 are estimated at $5,012,000, which includes the sum of $300,000 from Bankhead-Jones lands. These estimates are based upon a grazing fee of 30 cents per head per month.

The range improvement program involves the development of several major types of range improvement and facilitating projects designed to provide for better use of the public lands and for the maintenance of existing conservation and development projects. This program assists in improving livestock distribution and control and enhances wildlife habitat. The program is conducted to a large extent in cooperation with livestock operators authorized to make grazing use of the public lands. The following table comparing the 1965 and 1966 planned accomplishments indicates the program contemplated.

Range improvement program by major practices

Practice	Units	Fiscal year 1965 planned accomplishments	Fiscal year 1966 program
Water development	Number	329	353
Fencing	Mile	740	578
Revegetation	Acre	6,200	9,000
Undesirable plant control	do	17,100	23,800
Maintenance	Dollar	309,000	314,000

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$1,349,313	$1,485,957	$1,490,150	+$4,193
Unobligated balance available, start of year	−240,687	−139,104	−49,815	+89,289
Unobligated balance available, end of year	139,104	49,815	14,665	−35,150
Appropriation	1,247,730	1,396,668	1,455,000	+58,332
Obligations by object:				
11 Personnel compensation	490,824	613,000	621,000	+8,000
12 Personnel benefits	33,825	36,000	37,000	+1,000
21 Travel and transportation of persons	32,093	50,000	52,000	+2,000
22 Transportation of things	50,467	50,000	58,000	+8,000
23 Rent, communications, and utilities	3,953	11,000	11,000	----------
24 Printing and reproduction	1,903	4,000	4,000	----------
25 Other services	412,342	417,000	421,000	+4,000
26 Supplies and materials	296,330	274,957	256,150	−18,807
31 Equipment	27,576	30,000	30,000	----------
Total obligations	1,349,313	1,485,957	1,490,150	+4,193

Passenger Motor Vehicles

Chairman Hayden. Will you place in the record your statement of the need for six additional passenger motor vehicles for replacement.

(The statement referred to follows:)

ADMINISTRATIVE PROVISIONS

PASSENGER MOTOR VEHICLES

Authorization is requested for purchase of six passenger vehicles for replacement only. All of the vehicles to be replaced will have met the standards as to age or mileage.

These vehicles are for use by field personnel in the administration of public grazing lands, forest management and fire suppression in widely scattered areas, by field examiners and surveyors in the performance of investigations and surveys, and by supervisory personnel.

Two station wagons are included in the request. They will be used principally by cadastral engineers where the job requirements involve extensive driving and the hauling of personnel, scientific instruments, and field equipment.

Vehicles to be purchased:	
Number	6
Gross cost	$9,600
Old vehicles to be exchanged:	
Number	6
Allowance	$2,400
Net cost	$7,200

NORTH DAKOTA MINERAL AND TAYLOR GRAZING LEASES

SENATOR YOUNG. May I ask a question on that subject?

Chairman HAYDEN. Yes.

Senator YOUNG. I note that on page 2 of your justification you show how much money each State will receive from mineral leasing and the Taylor grazing leases, and so on. What land do you have in North Dakota?

Mr. STODDARD. We have some 80,000 acres of land mostly on the very western edge, in the Bad Lands area, and pretty well scattered. It isn't in any really solid blocks, although there is one piece of several thousand acres. Then there are scattered forties, eighties, and quarter sections as far east as the Missouri River.

Senator YOUNG. You have some land intermingled with land taken care of by the Forest Service?

Mr. STODDARD. The Forest Service lands are in pretty well blocked units. They have a boundary around it, and all the land within that is under their jurisdiction, whereas, our lands are scattered here and there. They are lands that were overlooked by settlers when they came in, or just not wanted. Some of them are swampy, when you get over into the good duck country in your State, Senator.

We also have the mineral leasing responsibility on the Federal lands that the Bureau of Reclamation and the Corps of Army Engineers acquired.

Senator YOUNG. And you handle all of that?

Mr. STODDARD. Yes, sir.

Senator YOUNG. Do you have much of a backlog now? I recall that 2 or 3 years ago you had a big backlog on mineral leasing work.

Mr. STODDARD. We don't have it in mineral applications. It is mainly in applications for surface lands, under the old laws. On that backlog we have pretty well trimmed it down now.

LANDS PROGRAMED FOR SALE

Senator YOUNG. You mentioned a while ago that you had some land blocked out for recreational uses and sales to others. About how much land of this kind do you have programed for sale?

Mr. STODDARD. We haven't got it for public sale, the recreational land, except where it may be needed for a city park or a county park around cities and towns. Under the Recreation and Public Purposes Act, we have the authority to make available, to a county or a city or a State, land which they may deem to be more useful for recreation and park purposes.

On the other hand, lands that are away from any community and so on, we are classifying for multiple use, and constructing whatever facilities might be appropriate for the kinds of use that are going on there.

Senator YOUNG. Do you sell or do you have authority to sell these isolated tracts of land?

Mr. STODDARD. Yes, sir; as long as they are not part of big blocks. If they are out by themselves, or intermingled, as in much of North Dakota, those lands we could sell. I think we can sell up to 1,500 or 1,520 acres. That is the largest chunk that we could sell, and it has to be detached from a main, large block.

Senator YOUNG. Thank you, Mr. Chairman.

BEAUTIFYING THE LANDS AND RESTORATION OF WATERSHEDS

Chairman Hayden. I would like to ask this question on behalf of Senators Mansfield and Metcalf: The President has sent up a message on natural beauty. The Bureau of Land Management administers 180 million acres in the West, much of it watersheds. What additional funds could be used effectively, not only to beautify the land, but also to restore and protect vital watersheds and replace muddy water with clean water in the western streams?

Mr. STODDARD. We have about 6 million acres of fragile lands that are rapidly eroding and which are subject to rapid runoff, detrimental to clean water supplies. We have several pictures which indicate what the problem is, Mr. Chairman.

In addition, there are some 45 million acres that have been identified in our surveys as in poor or worse condition. The condition of these lands represents a most urgent need for rehabilitation treatment to correct what we consider, and I think many others have pointed the finger at us, as a major sore spot in America's beauty.

REHABILITATION

If we were to undertake a special program to effectuate rehabilitation, we might do something like this: Special plans would be developed to treat an average of about 10,000 acres per district or about 500,000 acres for all the public lands, per year. This would only represent 1 percent of the problem acreage. But as a special program, in addition to the treatment already scheduled, it would represent a significant attack into the backlog of work on these poor and fragile lands. Such a program we estimate would cost about $5 million a year.

JOB CORPS ASSISTANCE

This would, of course, require additional manpower. We have hopes, of course, of using some Job Corps workers on this. This is the kind of thing they can do. Yet the number of camps, compared with the

amount of work we have, is very small. We feel that we are losing ground each year because we are not making these investments.

Chairman HAYDEN. If we could enlist groups of young men, such as we did years ago, for the camps, they would perform this work?

Mr. STODDARD. They can perform some of it. Of course, the problem we have is that much of it is too remote from the locations where the camps may be. We don't know how many camps we are going to have. We look forward to them doing some of it, but as I indicated, even if we accelerated the program $5 million a year, it would only be 1 percent of our estimated backlog of work.

Chairman HAYDEN. You really have an enormous problem on your hands.

Mr. STODDARD. Yes, we do.

REHABILITATION PROCESS AND COST

Senator BYRD. How would you rehabilitate a piece of land such as is shown in that picture? How much would be the average cost per acre for rehabilitation, and how long a period would be required?

Mr. STODDARD. Probably the first thing we would do would be to put up a fence to exclude livestock. Then we would have to develop an alternate source of feedback up on the level land. The next thing we would have to do would be to put in a terrace above the gully to divert the water away from the gully. Then, if necessary, we would either have to put in a plug or if it was a big gully we would have to put in a small dam. Then we would go in and do revegetation, seeding, putting in grass seed.

The cost varies considerably, but we estimate about on the average—and this, of course, would be much more on those acres shown in the photograph—over extensive acres at about $10 an acre. We feel we could make quite a bit of headway with that amount.

Senator BYRD. Over how long a period would the rehabilitation effort continue?

Mr. STODDARD. The $10 would be once, but after that it would be a question of surpervision and maintenance and see to it that, if there is grazing permitted in the future, it would be under very limited and restricted conditions so we wouldn't have the damage recur.

Senator BYRD. Would it take 5 years to make this useful land again?

Mr. STODDARD. We could actually do the physical work in, say, one season. Then you have the growth of the revegetation which takes several seasons, and the building up of your dying grasses, and so on, so you get sort of a humus built up in the soil. It would take 3 or 4 years before it would be reasonably stable.

Senator BYRD. But your work would take 1 year, and then you would let nature take care of the rest of it?

Mr. STODDARD. Yes. We could get all our work in in 1 year and then it would take a little while for the sore to heal through natural processes.

WATER-SPREADING METHOD

Chairman HAYDEN. I noticed, on Indian reservations in Arizona, where they have been very successful in spreading water.

Instead of allowing the water to come down in a rush, a dam was built so as to spread the water, and let it filter back gradually into the soil. Is that a feasible way of doing it?

Mr. STODDARD. Yes; it is. You see, your water tends to concentrate, and when it concentrates that is when it cuts the gullies. If you can divert it by the spreading process, either through a terrace or contour furrowing, you spread it out over more land and you make it available for plant growth and also infiltration in the ground. Then it will come out later as a clean spring. Otherwise, you have erosion and a flood.

It is this kind of a thing that we are very anxious really to go to work on, because the water in the West is such a critical thing that if we can't apply these practices we are really losing ground.

Chairman HAYDEN. Any questions?

LAND DISPOSITION PROCEDURES

Senator MUNDT. Senator Young asked you before I arrived about whether you could sell land, where you have an isolated tract, and you answered in the affirmative.

Mr. STODDARD. Yes.

Senator MUNDT. May I inquire, what are the procedures by which you dispose of land? Is it put up for public auction? Do you advertise it? Do people come and make a bid? How do you do it?

Mr. STODDARD. When it is classified as being put up for sale, then we have an appraiser go and look at it. He comes back to the land office and the land is listed and advertised and put up for public sale with the appraised value thereon. Then bidders come in and bid on it; yes, sir.

MAKOTAPI PROJECT

Senator MUNDT. Will you tell me a little bit about the present status of our Makotapi project?

Mr. STODDARD. We are continuing it at its present level, which involves a number of specific things. We are in the process of developing a close working relationship with the local soil conservation districts.

We have nearly completed much of our forest insect control work, where the bark beetle has been getting into the Ponderosa pine. Then we have in process six reservoirs which are a combination of soil conservation and stock use in the middle of the Center of the Nation Resource Conservation Area. Since Alaska became a State, it happens that this particular project falls right in the geographical center of the United States. We are working out a number of combination programs in this area and using it as a research area with cooperation of South Dakota State at Brookings.

Senator MUNDT. It is a cooperative program?

Mr. STODDARD. Yes, sir. We have the problem of managing cooperatively intermingled Federal and private lands. We are going to try to develop a management plan where we can do a rotation system of grazing in the plains area which will make possible a better economic base for the rancher and better care of the land.

FORT MEADE RECREATION SITE

Then there is another cooperative project of joint work with the Veterans of Foreign Wars on a recreation site at Fort Meade. Fort Meade has been made available for management by the Bureau, and

there is a lot of very nice forest and open grassland there that has recreation potential.

Senator MUNDT. Would that be primarily for the veterans? That is a psychiatric hospital. Sometimes I am sure those veterans enjoy being outdoors. Is this primarily a place for the patient? Is that what you have in mind?

Mr. STODDARD. Yes, sir; for their rehabilitation.

Senator MUNDT. I wonder if you could have a report sent to my office on both of these projects we have discussed in more detail?

Mr. STODDARD. Certainly, sir.

BARK BEETLE CONTROL

Senator MUNDT. You mentioned the bark beetle. Do you work with other Federal agencies of Government on the bark beetle on all your lands, or is this just the one area?

Mr. STODDARD. We work with the Forest Service. As you know, there is a national forest in the area. We work with them. Our land borders on theirs. We also have the problem of intermingled private lands, where there are mining claims, with most of them patented. We get cooperation from the owners where they have infestation on their lands, and we are going through the soil conservation districts to get the cooperation of private owners.

As you know, they have this agreement with the private owners. When we are treating the area, we try to work this out so the soil conservation district has the agreement and we can go in and do the work with the owner. One of the problems is that some of the owners live as far away as California and we have had a hard time chasing them down.

Senator MUNDT. Do the beetles move pretty fast from one tract to another?

Mr. STODDARD. Not too fast if it is checked, but it will spread. The bugs will fly from one area to another and then they will become endemic there for a while, and then under the right conditions they become epidemic, and they will spread out quite quickly. We have to watch where they hit and then go right in there and hit them. This is pretty much a direct control. They cut the trees down and lop the tops.

Senator MUNDT. Suppose you don't do anything? How long would it take to destroy a ponderosa pine?

Mr. STODDARD. I haven't really seen any extensive areas where this has taken place, but it will grow from just a patch of one-tenth of an acre that you can notice as the trees flare up red and then spread to an acre the next year, in widening circles. I would think if left unchecked, and we haven't been doing it, that left unchecked you could have an explosive situation. This beetle is known to behave that way. One thing that controls it up in our country——

DESTRUCTION PERIOD

Senator MUNDT. Give me an example of what you mean by "explosion."

Mr. STODDARD. The population of the insects becomes so large and their reproduction becomes so fast that they move in all directions at once.

Senator MUNDT. My question is merely directed to the tree itself. What happens to the tree if you just let them run wild and don't do anything?

Mr. STODDARD. It kills it by girdling the cambium layer in the tree. It automatically girdles the tree. That is why they show up red and then die. They bore right in under the bark. I am told in 1 year they would kill the tree.

Senator MUNDT. In 1 year the tree would die?

Mr. STODDARD. Yes, sir.

Senator MUNDT. That is almost sudden death.

Mr. STODDARD. There has been an infestation of these in Honduras in the pines there, where there is no seasonal check. We have a long, hard winter, where the bugs have to go under cover. But down there it has just ravaged like a fire.

ERADICATION METHOD

Senator MUNDT. How do you do this? Do you spray them or paint the trunk of the tree?

Mr. STODDARD. Cut it down and burn the tops.

Senator MUNDT. Then you lose your tree anyhow.

Mr. STODDARD. We are trying to utilize these for fence posts.

Senator MUNDT. But you can't kill the worm or the insect?

Mr. STODDARD. It is under the bark. They drill right in and get into the bark and work right around the cambium layer. We cut them down.

Senator MUNDT. There is no way to prevent the ultimate damage once they get into a tree. The tree is gone. You cut it down or it dies.

Mr. STODDARD. Yes, sir.

Senator MUNDT. And you can't treat the bark in some way?

Mr. STODDARD. I suppose if we were able to work that intensely, it would be possible, but it wouldn't be economical at all. The reproduction of the ponderosa pine is so good in the Black Hills that we get new growth coming in right away.

Senator MUNDT. What do you do to stop the infestation completely? Do you cut down every tree that has beetles in it?

Mr. STODDARD. That is right.

USE OF DDT

Senator MUNDT. There is no way to treat the trees individually?

Mr. STODDARD. There may be, but the only problem is that we get into the use of DDT and there hasn't been any better substitute for the control of insects. The Secretary doesn't want us to use it and a lot of other people don't. We feel that the direct method is better, as long as it can be kept on a small basis.

Senator MUNDT. It is a slow process to save a forest by cutting down the trees.

Mr. STODDARD. It is. Maybe somebody will come along with something new. We hope they do.

Senator MUNDT. With an insect that flies, you need some kind of spray, and for those that don't fly you need some other control.

Mr. STODDARD. Of course, if we catch them in the tree before they hatch out then they don't get a chance to fly somewhere else.

Senator MUNDT. Anyhow, you are doing the best you can with the knowledge you have.

Mr. STODDARD. This is the direct technique, the only one known now.

Senator MUNDT. Thank you.

That is all, Mr. Chairman.

SUBCOMMITTEE ADJOURNMENT

Chairman HAYDEN. Thank you for your appearance.

The subcommittee will adjourn until 10 o'clock tomorrow morning, when we shall hear the Office of the Solicitor, and the Office of Saline Water.

(Whereupon, at 10:55 a.m., Tuesday, February 16, 1965, the subcommittee recessed, to reconvene at 10 a.m., Wednesday, February 17, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

WEDNESDAY, FEBRUARY 17, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Chairman Hayden, Senators Byrd, Proxmire, Mundt, and Young.

DEPARTMENT OF THE INTERIOR

OFFICE OF SALINE WATER

STATEMENTS OF HON. KENNETH HOLUM, ASSISTANT SECRETARY FOR WATER AND POWER DEVELOPMENT, DEPARTMENT OF THE INTERIOR; AND FRANK C. DI LUZIO, DIRECTOR, OFFICE OF SALINE WATER

1966 BUDGET ESTIMATE

Chairman HAYDEN. The subcommittee will come to order.

For fiscal year 1966 the Office of Saline Water estimate is $26,515,000 for salaries and expenses, which includes the costs of research and development both through contracts and grants and at Federal laboratories, and administration and coordination which is estimated to cost $1,130,000. The justification for this estimate will be included in the record.

(The justification referred to follows:)

HIGHLIGHT STATEMENT

RESEARCH AND DEVELOPMENT PROGRAM

The Saline Water Act, as amended (42 U.S.C. 1951–58), directs and authorizes the Secretary of the Interior to conduct a research, development, and demonstration plant program aimed at the development of low-cost means for the large-scale production of water suitable for beneficial and consumptive uses. The act specifies that the Secretary shall (1) conduct, encourage, and promote fundamental scientific research and basic studies; (2) conduct engineering research and technical development work; (3) recommend demonstration plant construction and operations, or participation in such projects having promise; (4) study methods for recovery of valuable byproducts; and (5) undertake studies necessary to determine standard costs of producing water in various areas for comparison with saline water processes.

In accordance with the specific request of the President, the Office of Saline Water is conducting an aggressive program for advancing desalting technology in those areas having definite promise for economic feasibility within the next few years. This program recognizes that four distinct needs currently exist both in our own Nation and in the world community, identified as follows:

(1) Rapidly growing, major population centers which will need additional water to supplement existing sources;

(2) Developing areas in arid or semiarid zones;

(3) Inland and coastal areas where the mining of ground water has resulted in seawater intrusion; and

(4) Areas where the present water supply is adequate but of substandard quality.

The goal of this program is to accelerate improvement of the technology of water desalting so that within the next decade converted water can be a significant factor in meeting municipal and industrial requirements for high-quality water.

Using processes and technology available today, the cheapest water for large coastal communities can be produced by dual-purpose plants, coupling desalters, and electric generators. The program for 1966 contemplates improvement of the desalting methods, but recognizes that the cost of energy will continue to be one of the important factors.

The basic process or processes which will best meet the problems of smaller communities cannot be identified clearly; therefore, an intensive basic research effort will be required to develop new concepts to meet these varied requirements. The membrane processes hold great promise, particularly for brackish and minerally charged waters. Of these, the reverse osmosis process is still in the early stages of development, but is so promising that it will be given special attention aimed at its improvement and perfection.

Necessary economic data which will permit accurate comparisons of alternative water costs and measure the economic impact of water quality on homeowners and industrial users will be accumulated.

This program results from a decision to accelerate the accomplishment of basic and applied research and development of the water conversion technology in time to satisfy the growing demands of our domestic population and the water-short areas of the world and contemplates the following actions:

(1) A proposal for extension of the Anderson-Aspinall Act of 1961 (Public Law 87–295), increasing the authorized limit of expenditures by $200 million and clarifying the Department's authority to build experimental facilities;

(2) When appropriate, requests for specific congressional authority to provide assistance in construction of model and prototype plants to test the economic and operational capabilities of developing processes and techniques;

(3) Acceleration of the development of large multistage flash evaporators with a program of conceptual design studies to explore new approaches, followed by construction and testing of appropriate modules and plant components;

(4) Establishment of a west coast test center in order to adequately test modules and components under sea water conditions applicable to large plants in the Pacific Southwest;

(5) Development of plans for starting construction in 1967 of at least one dual-purpose plant in the range of 50 million gallons per day using the multistage flash process of distillation;

(6) Expansion of the research effort to develop entirely new desalting techniques, to improve tested distillation processes, and to develop the promising reverse osmosis process;

(7) Concentration on improvement of equipment components in all processes under development, followed by recommendations for prototype development when these components or elements have been sufficiently improved to warrant large-scale testing;

(8) An immediate start on a comprehensive study of all phases of comparative water costs and needs; and

(9) Continuation of participation in international organizations and attendance at symposia, as well as bilateral technical exchanges with other nations engaged in similar activities.

Changes are being made in the organization and management structure where it will enable the Office of Saline Water to accomplish current and prospective program objectives for the saline water conversion program. The new organization structure strengthens the two primary program responsibilities: (1) Basic research to promote fuller knowledge and understanding of the physical and chemical phenomena and processes involved in saline water conversion and (2) development and engineering to carry process concepts through, after the basic research stage, to applications to meet a wide range of demands at home and abroad and provide necessary engineering support.

The creation of three process divisions—distillation, membranes, and special projects—permits a focusing of responsibility for all aspects of program develop-

ment and application for these three categories of processes. At the same time, in the interests of economy and greater engineering specialization, provision is made for a common engineering service for these three process divisions to assist in carrying the program into the construction and operation phases.

Provision is made for the creation of a Saline Water Advisory Committee to advise the Secretary and the Office of Saline Water on program levels and direction, establishment of research and development priorities, and evaluation of progress toward program objectives. Outstanding scientists in the field of water research and water resource development have been asked by the Secretary to serve on this Committee.

A program analysis and coordination staff has been created to assist the Director in the development and appraisal of the program, in economic analysis and research, and in the development and utilization of effective management systems and techniques.

In the area of administration, the functions relating to contract administration, financial management, and audit are being strengthened to provide these professional services.

Demonstration Plant Program

The highly successful demonstration plant operations to date have generated interest and proposals for cooperative construction of water production plants in several water shortage areas. The budget estimates for 1966 provide funds with which to study, explore, and report on such future applications, including recommendations as to the processes, size, location, and estimated costs of such proposed plants.

A series of development operations at the Freeport demonstration plant has produced the following results:

1. The initial operating temperature of the plant has been increased to 270° F.

2. An output of 1,140,000 gallons per day was achieved while using only 67.5 percent of the plant's evaporator heat transfer surface. This rate of production, extrapolated to 100 percent of the plant potential, is the equivalent of 1,695,000 gallons per day.

During October gross production was approximately 35 million gallons and actual production costs were $1.05 per 1,000 gallons. During December the plant was on-stream 30 days and produced at an average rate of 1.08 million gallons per day while using only 67.5 percent of the evaporator surfaces. The cost figures for December have not been compiled, but are expected to be well under the dollar-per-1,000-gallon figure.

The electrodialysis demonstration plant at Webster, S. Dak., continues to operate with a high degree of reliability with approximately 90 percent on-stream time. The plant now operates unattended from midnight to 7 a.m. Currently, tests with a new membrane show that the original equipment can be improved or perfected at a reasonable cost.

The brackish water distillation plant at Roswell, N. Mex., has not yet operated with a high degree of reliability because of process problems related to pretreatment of the feed water to avoid scale formation on the heat transfer surfaces of the evaporators. There have also been minor equipment failures. Modifications are being made to the system in an effort to improve performance and lower operating costs.

In the fiscal year 1965 there has been appropriated a total of $12,250,000 which consisted of $10 million for the basic and applied research and development program, with $2,250,000 for operation and maintenance costs related to the water conversion demonstration plants including an amount of $750,000 specifically designated to be applied to the San Diego demonstration plant replacement costs. The estimate for 1966 is $29 million consisting of $26,515,000 for research and development and $2,485,000 for operation and maintenance and process changes of three demonstration plants. This represents increases in the amounts appropriated for research and development of $16,515,000 and $235,000 for demonstration plants. An explanation of the amounts requested for each major activity compared with the amounts available in 1965 appears on the following pages.

Salaries and expenses

Appropriation, 1964	$10,000,000
Unobligated balance, prior year	1,353,052
Total available, 1964	11,353,052
Appropriation, 1965	10,000,000
Unobligated balance, prior year	45,208
Total available, 1965	10,045,208

SUMMARY OF INCREASES AND DECREASES, 1966

To provide for acceleration of research program	16,082,792
Related increase in administration and coordination	387,000
Net increase, 1966	16,469,792
Budget estimate, 1966	26,515,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965		
		Total appropriation	Unobligated balance prior year	Amount available
1. Research and development:				
(a) Contracts and grants	$10,470,987	$9,007,000	$45,208	$9,052,208
(b) Federal laboratories	190,964	250,000		250,000
2. Administration and coordination	645,893	743,000		743,000
Unobligated balance	+45,208			
Total	11,353,052	10,000,000	45,208	10,045,208

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Research and development:				
(a) Contracts and grants	$10,470,987	[1] $9,052,208	$24,985,000	+$15,932,792
Basic research	4,935,085	4,422,000	5,900,000	+1,478,000
Program analysis and coordination	20,000	400,000	605,000	+205,000
Engineering and development	5,515,902	4,130,208	18,480,000	+14,349,792
International conference		100,000		−100,000
(b) Federal laboratories	190,964	250,000	400,000	+150,000
Basic research	70,000	75,000	100,000	+25,000
Engineering and development	120,964	175,000	300,000	+125,000
2. Administration and coordination	645,893	743,000	1,130,000	+387,000
Unobligated balance	45,208			
Total	11,353,052	10,045,208	26,515,000	16,469,792

[1] Includes prior year unobligated balance of $45,208.

JUSTIFICATION

SALARIES AND EXPENSES

1. RESEARCH AND DEVELOPMENT, $25,385,000

(a) *Program analysis and coordination, $605,000*

The estimate of $605,000 is an increase over the amount available for 1965 of $205,000 and will be applied to the economic research program and participation in international and national engineering feasibility studies.

The program analysis and coordination staff provides central program planning and coordination. Individual plans of the various process divisions and service groups will be integrated into an optimum overall work effort toward established goals, including review and coordination of activity budgets and guidance in the most efficient utilization of manpower. The staff performs four assigned functions: Program analysis, program planning and budget policy formulation, program coordination, and economic research.

Program analysis.—There is an immediate need for more precise determination of the research, development, design, construction, test and demonstration programs from the scientific, engineering and economic standpoints. This includes analysis of the research and development portion of the program, preparation of scientific, technological, and operational project classifications, operational objectives, and identification of paths for attainment of such objectives. Evaluation of the existing program from the standpoint of the most effective use of OSW's funds, the optimum balance of emphasis among competing projects, and the most efficient utilization of scientific resources will also be undertaken.

Program planning and budget policy formulation, $205,000.—In the light of quantitative and qualitative national water supply standards and requirements, and on the basis of inputs from the economic research program, together with the results of a number of engineering and economic feasibility studies and advice from industry, we are establishing standards for the economics of demineralizing saline water, developing tactical research and development requirements and adopting program schedules and priorities to meet these requirements. The $205,000 budgeted to this function is for the necessary engineering and economic feasibility studies. It is anticipated that engineering feasibility studies will be performed during 1966 in the following countries: Egypt, Australia, India, and Greece.

Program coordination.—Emphasis is being placed on effective coordination of the research and development effort with related programs of the Federal Government, including international desalination programs and activities involving OSW participation. This entails collaboration with other bureaus within the Department of the Interior, Department of Defense, Atomic Energy Commission, Department of Health, Education, and Welfare, Department of State, and others.

Economic research, $400,000.—A research program must be conducted to develop the economics of desalination in realistic situations of deficient or highly mineralized water supply. The program embraces six principal areas:

Assessment of quantitative water deficiencies.

Assessment of qualitative water deficiencies.

Determination of the potential role of saline water conversion in meeting quantitative and qualitative water deficiencies in the United States.

Evaluation of economic conditions at possible desalting plant sites.

Development of standards and techniques for optimizing desalting plant designs and costs to identify significant economic variables.

Studies of economic factors affecting the number and size of desalination plants needed.

The specific work contemplated is described below:

Assessment of quantitative water deficiencies, $30,000.—Determination of the potential role of saline water conversion in meeting quantitative and qualitative water deficiencies in the United States. Quantitative water deficiency economic research includes:

1. Inventory of imminent water shortages in areas of deficient water supply.
2. Assessment of the economic cost of inadequate water supplies.

Assessment of qualitative water deficiencies, $85,000.—Economic research in qualitative water deficiencies includes:

1. Listing of communities now using highly mineralized water supplies, with the chemical composition of these supplies.
2. Studies of water quality requirements of industry.
3. Studies of the real costs of qualitative water deficiencies.
   (*a*) Experience of water users in Webster and Miller, S. Dak.
   (*b*) Experience of water users in Buckeye, Ariz.
   (*c*) Experience of water users in selected American communities.
4. Studies to determine optimum water quality in terms of costs to consumers.

Determination of the potential role of saline water conversion in meeting water deficiencies, $140,000.—The saline water conversion program is aimed at identifying useful applications within the framework of the economic realities of life. This project will help determine which desalination processes are most likely to be feasible at various locations; what may be the most needed conversion plant sizes; and the probable times when future desalting plants will be required. Once the basic information is at hand, a multiplicity of additional projects, such as closer approximations, refinements, and sequels, will become possible.

Evaluation of economic conditions at selected desalting plant sites, $60,000.—Economic data relative to specific sites for saline water conversion are unavailable today. This work will provide economic information about potential plant locations. In addition, area studies will be initiated for the purpose of determining whether a group of communities, none of which can singly afford desalination, can jointly use a conversion plant. A first group of selected communities will be subjected to economic studies in depth, and an area having an identifiable problem of deficient water quality will be examined.

Development of standards and techniques for optimizing desalting plant designs and costs for significant economic variables, $45,000.

Plant design is being optimized for a number of engineering variables. This project will permit integrating significant economic variables into plant designs for complete optimization and lowest water costs through the following steps:

1. Construction of mathematical models of economic variables pertaining to desalination plants.
2. Translation of economic variables into digital computer language for optimization of desalting plant design and costs.

Studies of economic factors affecting the number and size of desalination plants needed, $40,000.—Present desalting costs impose a limitation on the utilization of America's vast saline water resources. Certain economic factors are capable of expanding the opportunities for utilizing these resources. This project is designed to reveal economic factors capable of increasing the numbers of feasible desalting plants and assess their impact on future water needs.

Certain of the factors may improve the economies of size in conversion plants, so that larger plants can be used. The proposed studies are aimed at identifying such factors and assessing their values.

1. Identification of economic factors which increase the number of opportunities for saline water conversion.
2. Identification of economic factors favoring the use of large desalination plants.

(*b*) *Basic research, $6 million*

The estimate of $6 million is an increase of $1,503,000 over the amount available for 1965.

The objective of the basic research program is to increase knowledge and understanding in scientific fields relevant to the recovery of pure water and valuable byproducts from saline waters through conduct of exploratory research in support of developmental efforts. It includes maintenance of liaison with the scientific community and other agencies to insure that all significant advances are integrated with the Department of the Interior interests and programs.

In the Office of Saline Water research and development program, scientific knowledge is being sought that is generally applicable to any process of saline water conversion, for it is obvious that a number of processes will be needed to meet different circumstances.

The 1966 budget request for this purpose is divided into the following general areas:

Properties of water and solutions	$1,900,000
Separation processes	1,950,000
Vapor: Distillation, evaporation. Liquid: Reverse Osmosis, electrodialysis, solvent extraction, controlled diffusion, membranes. Solid: Freezing, hydrates, ion exchange, adsorption. Biological systems. Energy sources.	
Interactions at boundaries of water systems	1,100,000
Corrosion, scale, transference across phase boundaries, materials.	
Properties of salts, brine, and byproducts	1,050,000
Total	6,000,000

Properties of water and solutions, $1,900,000.—Past research and development activities were largely concerned with known processes. Since it now appears that the inefficiencies associated with existing processes may not be markedly reduced by the use of present basic information, it is becoming apparent that further rapid reduction in costs of desalinated water will require new approaches that are not anticipated in present processes. Thus, research emphasis is being placed on fundamental principles and concepts that are generally applicable to any process of saline water conversion. It is expected that these activities will help to eliminate the serious deficiencies of experimental data and understanding of the properties of multicomponent saline solutions, of ionic hydration and on the fine structure composition of pure water.

Separation processes, $1,950,000.—Basic research can lead to the practical development of really low-cost desalination processes, as nearly all of the present processes require more than 30 times the minimum theoretical energy for completely reversible separation. Past research has dealt with the fundamental mechanisms and phenomena of separation processes. Progress has been made in defining and correcting deficiencies in existing systems and basic research has led to the discovery of an entirely new membrane separation process that is now in the pilot plant stage of development. The funds requested will provide for continuation and growth of the present program as well as new investigations in such promising areas as kinetics of the hydrate process, transport across biological membranes, energy sources, and crystallization and properties of ice.

Interactions at boundaries of water systems, $1,100,000.—Existing desalination processes require quantities of energy far in excess of theoretical requirements. These thermodynamic inefficiencies arise largely from the transport of energy or matter at surfaces or phase boundaries. The Office is giving attention to the theory of the liquid state, and gas, liquid and solid phase transitions. Special emphasis is being given to physical processes on surfaces and interfaces. The funds requested will allow continuation of these projects and additional investigations on the corrosion of materials in sea water at elevated temperatures, transport of water and salts across boundary layers, adsorption of salts, and removal of salts from solids by washing.

Properties of salts, brine, and byproducts, $1,050,000.—There are important opportunities for additional investigations leading to improved separation processes for minerals and byproducts from sea water and brackish water. Specific investigations now in progress involve the removal of specific elements from sea water by ion exchange resins, chemical removal of scale-forming elements, and recovery of fertilizer elements and other minerals from sea water. The funds requested will allow for additional effort in integrated system development to lower the cost of producing desalinated water and investigations of the recovery of potash and other minerals from sea water and brines.

(c) *Engineering and Development, $18,780,000*

The estimate of $18,780,000 is an increase of $14,474,792 over the amount available for 1965 for the applied research and engineering and development program.

The engineering and development staff performs applied research, process development, engineering, and operations through three process divisions—Distillation, membranes, and special projects, with the support of an engineering services and engineering analysis and evaluation staff. Each of the three named

divisions is the focal point of responsibility for all phases of these program areas, including:

(*a*) Program development.

(*b*) Technical aspects of applied research and development contracts.

(*c*) Technical liaison with other Federal agencies such as AEC, Defense, and others and with private industry groups working in these process areas.

(*d*) Supervision of the operation of pilot and demonstration plants and operation of test site facilities.

(*e*) Technical advice relating these processes to foreign and domestic public and private needs.

(*f*) Technical aspects of cooperative programs of research, development, and applications with State and local governments, foreign countries, international organizations, and other groups.

(*g*) Coordination with basic research on program development and applications of research results.

(*h*) Coordination with the administrative staff on contract administration and financial management matters.

The allocation of funds within the three process divisions and the engineering support staffs is as follows:

I. Distillation division, $12,000,000

Detail of estimate:	
Module development	$7,300,000
Advanced concepts of evaporator design	2,200,000
Supporting R. & D. studies	2,000,000
Flash chamber and design studies	500,000
Total	12,000,000

This estimate covers: (1) development, design, construction, and evaluation of results obtained from intermediate prototype distillation plants up to 50 million gallons per day; (2) the development, design, construction, and operation of evaporator module and pilot plants for large advanced design distillation plants leading to 150 to 250 million gallons per day capacities; (3) all other research and development to be conducted in support of, and in relation to, the above projects such as scale control methods, corrosion, materials, heat transfer improvements in distillation, deaeration, etc.; (4) research and development in the areas of solar, humidification, and diffusion still projects; and (5) other cooperative and advisory duties related to the distillation processes. It is necessary to immediately proceed with work in those research and development areas which will make possible the construction of distillation plants up to 50 million gallons per day by about 1970. The program is being instituted in order to exploit the most developed technology on distillation processes.

Conceptual designs contracted for in 1965 will be evaluated and necessary modules will be built to determine the reliability of components to be used in the large plant construction. It is envisioned that these modules will finalize the design of the deaerator, the circulating pumps, evaporator geometry, control devices, and the heat rejection economy including recycle rates and other parameters. Most of these components will be evaluated at the new west coast test site.

The program of "Advanced Concepts of Evaporator Design" in cooperation with AEC will also require the construction and evaluation of development modules to advance that work, as well as models of designs proposed. The proposed concepts will be thoroughly reviewed and developed further only if warranted. Problems in handling high brine flows will be resolved. Modular plants will be constructed to verify and correlate all data. Closely associated with the geometric design studies are problems to be solved in hydraulic flow, heat transfer, mist elimination, corrosion and materials. Specific emphasis is currently being given to the study and development of concrete for evaporation equipment operating at elevated temperatures.

Applied research and engineering development programs were accelerated in fiscal year 1965 and will continue to gain momentum in fiscal year 1966 in order to provide required data for multimillion gallon per day plants. Distillation will continue to be a major area of effort with some support also given to problems relating to the vapor compression distillation method. Concurrent experimental and engineering development work will include those efforts already initiated on scale control by additives, sludge techniques, pH control, and continuing on the production of byproducts specifically relating to multistage flash and combination with multieffect distillation processes. Deaeration experiments will be under-

taken on some of the small pilot plants. Flash chamber design studies and experiments will cover temperature ranges up to 350° F. Projects for the vertical tube distillation processes, used primarily in multiple effect systems, will be continued with work on two-phase flow, feed distribution, heat and mass transfer, double fluted tube designs, and mist elimination.

II. Membrane division, $3,000,000

This estimate covers the development and engineering of all membrane and related processes including reverse osmosis and electrodialysis and any new concepts in membrane technology as they qualify for further development.

Current and future R. & D. will be programed in the following specific activities:

A. Development, design, construction, and operation of a reverse osmosis pilot plant leading to a larger capacity intermediate prototype plant designed as a module for multimillion-gallon-per-day-plants;

B. Applied research effort specifically directed toward the development of large reverse osmosis plants;

C. Development, design, construction, and operation of an optimized intermediate prototype electrodialysis plant or other membrane process designed as a module for multimillon-gallon-per-day-plants.

D. Maintenance, operation, and experimentation associated with the 250,000-gallon-per-day brackish water electrodialysis demonstration plant at Webster, S. Dak.;

E. Supporting research and development programs in ion adsorption, electrodialytic demineralization, and other membrane and related processes; and

F. Other engineering work related to membrane processes.

The program mission is to develop the technology and determine the competitive position of known membrane and related processes and any new advanced concepts in membrane technology that may be developed for the conversion of brackish water or sea water.

Initially, emphasis is being placed on those processes which now show the strongest economic potentials within a reasonable time period, so that they can be used in water production plants. The electrodialysis process will be thoroughly reviewed in a concurrent but somewhat more limited program, with strong supporting R. & D. program to resolve those problem areas which are common to both processes.

The program is a flexible one that will be adjusted to emphasize any new advanced concepts which show strong promise in lowering equipment costs or energy requirements. Processes under development will be continually reviewed as the technology advances and those not deemed suitable for further development will be dropped.

The program for the membrane division for fiscal year 1966 is presented in the following paragraphs. The general areas relate to reverse osmosis, electrodialysis, common supporting R. & D., and other membrane processes.

Reverse osmosis, $1,900,000.—Reverse osmosis is a new process which holds promise of outstanding economy in the conversion of saline water to fresh water. The process is inherently economical since it does not require a phase change. Therefore, energy costs may be held to an extremely low value, and there is an inherent simplicity in the system which increases the savings.

Development of the reverse osmosis process is highly dependent upon the availability of suitable membranes and the rate of flow of potable water through a given membrane area able to be attained under a given applied pressure. The proposed program emphasizes and accelerates membrane development, hydraulic studies, and hydraulic cell designs. A concurrent and continuing program of preparation of conceptual designs and model testing of the most promising designs is included. Finally, a supporting R. & D. program for individual plant components such as pumps and construction materials will be undertaken.

Membrane application studies will include evaluation of new membrane types and techniques of operation including those resulting from basic research studies, life testing on brackish waters of different chemical character and the investigation of substances or conditions which foul or deteriorate a membrane. Current experience indicates that the operation of the 1,000-gallon-per-day pilot plant now available should be continued during fiscal year 1966. It is anticipated that the hollow fine fiber film reverse osmosis technique will be ready soon or pilot plant testing. In addition to the above work there will be some model testing required as well as supporting research and development pumps and materials.

Electrodialysis, $700,000.—The research and development effort in electrodialysis has been concerned with the evaluation of available membranes and the pilot plant testing of manufacturers stack designs. These studies have been conducted primarily at the Bureau of Reclamation laboratories in Denver, Colo. Recently, work has been initiated toward the development of lower cost membrances, and an engineering study was initiated on large electrodialysis plants. This study utilizes existing experience with large-size plants and other present day technology to more accurately project costs of large electrodialysis plants up to 10 million gallons per day for treating brackish waters of varying salinity and chemical composition.

Future programs in electrodialysis are planned with the objective of developing an optimum module design of an intermediate prototype as a basis for extrapolation to larger sizes. As a part of this development program, a supporting research and development must be conducted to obtain substantial reduction in membrane costs, solve problems due to fouling and polarization, investigate pretreatment needs and the effects of water composition.

Specific emphasis will be placed on membrane application studies and the operation of special test stacks at Webster and at other brackish water test sites. Work at the Denver laboratories on special-process problems covering polarization cell designs, and hydraulic effects will be expanded. Effort will be devoted to high-temperature operation of electrodialysis on sea water previously initiated in Israel and special studies of hydraulics and conceptual designs.

Common supporting R. & D., $200,000.—Since both reverse osmosis and electrodialysis are membrane-type processes, they have similar problem areas for which a common supporting R. & D. program will be undertaken.

In particular, the field of pretreatment will be given special emphasis to eliminate or minimize the problems that can be expected with membrane fouling Membrane-type processes work on the principle of ultrafiltration and are very sensitive to relatively small particles, such as macromolecules, proteins, or large chain polymers which can be encountered in naturally occurring saline waters. Pretreatment investigations will include studies as to how either existing or redesigned pretreatment systems can best be integrated in an overall plant design using reverse osmosis or electrodialysis.

For application on hard, brackish waters, a scale prevention program will be initiated. This program will investigate possible hydraulic, chemical, ultrasonic, and electrical methods for scale prevention which could be successfully used in both reverse osmosis and electrodialysis systems.

Other membrane processes, $200,000.—An R. & D. program will continue in new membrane and related type-processes. Initial investigations will be made of advanced concepts in membrane technology that appear to be ready for further development. These processes will be examined by an investigative type-effort at the laboratory bench-scale level and in a few special cases in small to moderate size pilot plants. While secondary emphasis will be placed on this part of the overall program, a continuing review will be maintained of promising developments that occur in the technology of these individual processes. After suitable evaluation, one or more of these processes may be selected for intensive development.

Processes that have been selected for further investigation include electrically induced adsorption, and special adaptations of electrodialysis; namely, electrodialytic demineralization and electrosorption.

III. Special Projects Division, $1,430,000

This Division is responsible for new process developments and engineering research other than in distillation and membrane fields. Applied research and development activities at this time include crystallization, deaeration, byproducts, brine disposal, and ion exchange. The Division explores and evaluates developments on new promising approaches or new concepts stemming from the intensified basic research program which may lead to alternatives superior in the longer run to the presently most advanced conversion techniques. The work includes:

(*a*) Maintenance, operation, and experimentation conducted at the east coast conversion (freezing process) plant at Wrightsville Beach.

(*b*) The development, design, construction, and operation of vacuum freezing, secondary refrigerant freezing and hydrate process pilot plants;

(*c*) Development work conducted in support of and in relation to the above processes; and

(*d*) Other special projects, such as chemical separations, brine disposal, developments of special applications of materials for specific uses and work leading

to solving such problems as general equipment needs and development of new concepts obtained from results of basic research.

Small pilot plant work, $530,000.—Small pilot plant experimentation on vacuum freezing and secondary refrigerant will continue in an effort to bring about improvements which will ultimately lower the cost of product water.

East coast conversion plant, $350,000.—Operational evaluation of the 200,000 gallons per day east coast conversion plant (freezing process) will be necessary in order to successfully test and evaluate this version of direct contact-controlled crystallization freezing process. Data from this and other pilot plants will also be available to estimate scale up to intermediate size freezing plants using a secondary refrigerant.

Hydrate processes, $550,000.—The investigation of two variations of the hydrate process at the pilot plant level is planned to capitalize on the promising results obtained to date. Laboratory studies carried out concurrently with bench scale work show that the hydrate process is technically feasible, and further development is indicated.

Construction of two small hydrate pilot plants was initiated in fiscal year 1965 with further study and evaluation to be made in 1966.

In addition to the above, the Special Projects Division will perform work in support of other programs financed from funds requested for the programs to be benefited. This work includes the following:

Deaeration: Research and development to provide lower cost and more efficient means of removing dissolved gases in saline waters prior to or during processing.

Byproducts and pretreatment: Applied research and pilot plant operation for pretreating saline feed water prior to conversion processing to reduce scaling and for the possible production of byproducts.

IV. Engineering services staff, $2 million

The engineering services staff provides general engineering support services for the development and preparation of designs, drawings, and specifications for construction projects; preparation and/or review of engineering cost estimates, supervision of field construction, supervision of the management and operation functions of test stations and other engineering assistance for process and plant development. The services rendered in connection with the preparation of designs, drawings, specifications, cost estimates, and construction services will extend into construction modifications and change orders as well, during construction in progress. Other functions will include construction bid evaluations, proposal analysis, and the initiation of special studies and projects for the development of engineering data and background material required as a basis for sound and efficient engineering design and evaluation.

The 1966 budget request for this staff is divided as follows:

West coast test station, $1,350,000.—The accelerated engineering and development effort to scale up the size of distillation plants to multimillion gallons-per-day capacities requires establishment of a facility to enable onsite testing of full-scale size components and modules of the large plants. It will require a large seawater intake, great pump capacity, and other services. To meet this critical requirement a west coast test station similar in purpose to the station at Wrightsville Beach is planned, with site selection and design scheduled for completion in time to permit construction in fiscal year 1966.

Brackish water conversion testing facility, $100,000.—This facility will be installed adjacent to the brackish water conversion demonstration plant at Roswell, N. Mex. It will provide for pilot plant evaluation of membrane and distillation processes for the conversion of brackish water. The funds requested will cover the (1) design and construction of a building to house the test equipment, (2) the drilling of a well to provide feed water, and (3) the construction of a reservoir for water storage. The estimate does not cover operating costs nor the cost of basic test equipment.

East coast test station, operation and maintenance, $350,000.—The Wrightsville Beach Research and Development Test Station has developed into a highly important facility at which the major portion of all pilot plant work supported by the Office of Saline Water is performed. The operation and maintenance of this service facility, which consists of providing space, utilities, and other services for pilot plant contractors, as well as assuring close onsite supervision of the contractors' operations, is the responsibility of the engineering services staff. A minimum of $350,000 will be required to provide the O. & M. service which is accomplished by OSW employees at the station.

East coast test station improvements, $200,000.—To adequately support the increased pilot plant activity required by the expanding research and development program, certain modifications and additions to the facilities at Wrightsville Beach are necessary. Designs for these modifications and additions are presently being prepared. Construction must be accomplished during fiscal year 1966 in order to benefit the scheduled program objectives. The improvements include expansion of existing office and locker room space, construction of a warehouse, provisions for water storage, paving and surfacing certain areas, installation of an emergency generator, providing an underground drainage system, and making modifications and repairs to waste ponds and basins.

V. Engineering evaluation staff, $350,000

The engineering evaluation staff is responsible for analyzing and evaluating technical and cost data for the comparison of the various processes and unit operations.

Evaluations of processes will be performed on a continuing basis to establish the time schedule of future work and will measure the results obtained from engineering tests, operation of pilot plants and large operatng plants. Emphasis will be placed upon coordinating the work so that the various processes under investigation will proceed in a logical sequence to a definite construction program. The staff will develop basic technical and cost data with standards for use in all operating divisions.

The estimate will permit several urgently needed studies and evaluations in process areas and willinclude the evaluation of the utiliation of available heat energy from municipal waste burning plants. Evaluations and cost studies of the potentials of crystallization processes started in fiscal year 1965 will be continued in 1966.

2. ADMINISTRATION AND COORDINATION, $1,130,000

The estimate of $1,130,000 is an increase of $387,000 over the amount available for 1965 and is for the necessary additional personnel and other administrative cost required by the accelerated research program and the changes in the organization and management structures.

Since 1958, significant changes have occurred in the water conversion program direction, in the legislation, in the technology and in the interest in the program here and abroad, by individuals, by governments, by industry, and by the research and engineering community. No corresponding changes have been reflected in the Office of Saline Water organization and management structure. To meet its current and emerging program objectives and maintain its vitality and success in future operation the Office of Saline Water has reorganized its organization and management structure. These adjustments, which were more fully explained in the highlight statement will help to bring certainty and assurance in defining and responding to new opportunities and in meeting new program demands

The amount requested provides for planning, supervision, and administration of research and development contract funds. The number of scientific, engineering and support personnel allowed at the present time is insufficient to effectively accomplish the desired objectives of the program. Several recent studies made of the Federal Government research and development contracting programs have emphasized the importance of adequate technical and administrative supervision of grantees and contractors. To accomplish its mission it is necessary to add to the staff of scientists and engineers in order to continue (*a*) stimulating interest in the program, (*b*) evaluating research and development proposals, (*c*) planning the specific research and development projects, (*d*) negotiating the technical portions of the contracts, and (*e*) administering the technical work so that funds are expended prudently and so that worthwhile results are obtained. An important phase of the supervision of contract research is visiting the organizations carrying out the work to give direct advice and guidance at periodic intervals during the course of the work. In addition, the staff must evaluate results, including consideration of patent matters, and plan future work. Of equal importance, the scientific activities must be supported by capable financial, legal and administrative staffs to insure that sound business management principles are applied.

In addition to its contracted research and development activity the Office of Saline Water conducts a number of related programs in scientific and technical fields. This includes the evaluation, assembly and maintenance of important current scientific literature, the making of inspections of proposed water conversion projects, both domestic and foreign, and fostering or sponsoring regional, national, and international conferences to encourage scientific participation in

saline water conversion. It also has the responsibility to coordinate and correlate available information in advancing the development of low-cost conversion projects, as well as to cooperate with other governmental and private organizations interested in saline water conversion.

The estimate includes an increase of 20 positions in the Washington, D.C., headquarters staff. These positions will be assigned as follows:

Scientific and technical	8
Stenographic and clerical support of technical staff	4
Administration	8
Total	20

ITEMIZATION OF ESTIMATE

Salaries and expenses

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$11,307,844	$10,045,208	$26,515,000	+$16,469,792
Unobligated balance available start of year	−1,353,052	−45,208		+45,208
Unobligated balance available end of year	+45,208			
New obligational authority (appropriation)	10,000,000	10,000,000	26,515,000	+16,515,000
Obligations by objects:				
11 Personnel compensation	494,426	715,000	965,000	+250,000
12 Personnel benefits	36,625	53,000	71,000	+18,000
21 Travel and transportation of persons	26,562	47,000	80,000	+33,000
22 Transportation of things	3,218	1,000	6,000	+5,000
23 Rent, communications, and utilities	20,108	36,000	122,000	+86,000
24 Printing and reproduction	18,903	16,000	36,000	+20,000
25 Other services	8,681,145	7,672,208	20,185,000	+12,512,792
Services of other agencies	250,984	284,000	470,000	+186,000
26 Supplies and materials	5,488	49,000	60,000	+11,000
31 Equipment	7,120	2,000	20,000	+18,000
32 Lands and structures		170,000	1,500,000	+1,330,000
41 Grants, subsidies and contributions	1,762,985	1,000,000	3,000,000	+2,000,000
42 Insurance claims and indemnities	280			
Total obligations	11,307,844	10,045,208	26,515,000	+16,469,792

STATEMENT OF DIRECTOR DI LUZIO

Chairman HAYDEN. Mr. Di Luzio, you have just recently been designated as Director of the Office of Saline Water, and this is your first time before the Senate Committee on Appropriations to support your budget estimate. Would you please tell the committee something about yourself?

Mr. HOLUM. I am sure he will be happy to, Mr. Chairman.

If it suits you, though, Mr. Chairman, I have a brief statement I would like to make, and I would supply the committee with some introductory information about the Director.

As I have already noted, my principal mission before the committee this morning is to introduce to you our new Director of the Office of Saline Water. Frank Di Luzio comes to the Department of the Interior from the Senate Committee on Aeronautical and Space Sciences where he served as staff director. Mr. Di Luzio has a rich background in management, research, and engineering. He is a research engineer, a proven administrator. We are very pleased to have been able to secure his services. We are confident he will provide the kind of leadership we need for the enlarged program of the Office of Saline Water that the President has asked us to undertake as part of his plan for the Great Society.

The program we are talking about this morning as you already noted, Mr. Chairman, provides an appropriation request in the amount of $29 million to begin this accelerated program. We have pending before the committee a supplemental request for fiscal year 1965 in the amount of $3,900,000 that we understand will be considered by the committee on another occasion.

STATEMENT OF SECRETARY HOLUM—PROGRAM HIGHLIGHTS

Before introducing Mr. Di Luzio—I am going to leave to him the responsibility of justifying this $29 million budget request in detail—I should like to take a few moments to highlight some of the things we are doing.

Chairman HAYDEN. The subcommittee will be glad to have you do so.

Mr. HOLUM. Two weeks ago I appeared before the House Interior Committee. Traditionally, the House Interior Committee has conducted briefing sessions for new Members of Congress and the administrative branch at the beginning of each biennium Congress. At the briefing session 2 weeks ago we had a very useful review of the whole program of the Office of Saline Water which we have been managing during the last 2 years. Copies of the statement I prepared for that session have been made available to members of the committee.

If any questions come out of it, Mr. Di Luzio and I will be happy to try to answer them this morning.

RESEARCH AND DEVELOPMENT

Our program, of course, is basically a research and development program. We think we have had substantial successes, successes and failures both. The statement which I prepared for the House Interior Committee, our legislative committee in the House of Representatives, has attempted to outline both the successes and failures that we have experienced during the past 2 years.

In brief summary, the funds authorized by the Anderson-Aspinall Act and provided by the Congress have permitted a substantially increased effort in basic research. We are learning much about water and its peculiar properties. Perhaps of greatest long-range importance, the program is now receiving the interest and participation of our best colleges, universities, and research institutions. This high level of interest on the part of so many excellent scientists is one of the reasons that we feel that the time has come to move ahead quickly and vigorously.

The Wrightsville Beach test station has proven to be a valuable addition to the Office of Saline Water program. Today, half of the pilot plants that are being operated are at the center. Five are in operation and the sixth is nearing completion.

DEMONSTRATION PLANTS

We continue to experience a variety of successes and failures with the demonstration plants authorized by the 1958 act. The multistage flash plant at Point Loma operated so successfully that it was transferred to the Navy to meet their emergency requirement at Guantanamo Bay. The long-tube vertical process plant at

Freeport is operating at design capacity after extensive modifications and could produce up to 1,400,000 gallons per day if a few key components had greater capacity.

The electrodialysis plant at Webster, S. Dak., has met all expectations and continues to provide useful opportunities to improve the basic process. The vapor compression plant at Roswell, N. Mex., and the freezing plant in North Carolina have not operated successfully up to this time. Each of the plants, however—whether it operated successfully as originally designed, or required or requires substantial modification—has contributed in a real way to current knowledge about processes and how they work and perform.

ACCELERATED PROGRAM

As the members of the committee know, Kermit Gordon, Director of the Bureau of the Budget, at the direct request of the President, wrote to Secretary Udall on July 15, 1964, asking the Secretary, in collaboration with the Atomic Energy Commission, and in consultation with the Offices of Science and Technology, to develop an aggressive and imaginative program for desalting sea water. Secretary Udall responded to the President's request on September 22, 1964. The President subsequently forwarded the proposed program to the Congress.

The $29 million that we are discussing today, together with the $3.9 million supplemental that we will be discussing later, provide the funds necessary to initiate this accelerated program.

It is important that I should take a minute to note that the accelerated program we are talking about is really a two-pronged program designed to meet two separate distinct problems. One is the problem of finding an adequate supply of water for major metropolitan centers close to the sea coast. We are convinced that answering this problem will require one kind of process, one type of facility.

An equally important problem, one that we propose to carry forward simultaneously and to give all the attention that it merits is the problem of finding a way to improve the quality of brackish and minerally charged water. We have substantial areas in the United States and around the world——

Chairman HAYDEN. This subcommittee has been looking into the problem for a long time. It is clear that there are two different problems.

Mr. HOLUM. There certainly are. We propose to devote our attention to both of them. As you well know, Mr. Chairman, economic growth can be stultified, held back, either by water of poor quality or lack of water in adequate supply. We think it is our responsibility to address ourselves to both programs.

SUMMARY

In summary then, during the 4 years that I have been associated with the program of the Office of Saline Water of the Department of the Interior, I have come to the conclusion that the national interest requires this program that the Appropriations Committee has provided for in the past. I think it is essential for our economic growth and provides an opportunity to benefit the whole world community.

Chairman HAYDEN. The research hearings held by Senator Kerr brought this to the attention of the American people. It has been a lively question ever since.

Mr. HOLUM. The Committee on Water Research has performed a service. I think the only question remaining is the question of whether we complete this effort on an accelerated basis as President Johnson has proposed or that we go ahead and do it slowly. I suspect that whether we do it on an accelerated basis or stretch the program out a longer period of time, the total cost is apt to be substantially the same. In fact, I think it may well be possible by taking advantage of the competitive nature of American business and American research institutes and scientists, we can do the job cheaper if we take advantage of the tremendous interest that exists in the country today among our scientists and research institutes to move ahead quickly. That is why President Johnson has identified the desalting program as a major component of the Great Society. That is why we hope that the Congress will agree with us that this is the time to move ahead and complete the job that is so important to all of the United States and to the whole world.

Thank you, Mr. Chairman.

PROFESSIONAL EXPERIENCE OF MR. DI LUZIO

Chairman HAYDEN. Mr. Di Luzio, you may file your statement in support of your estimate in the record and highlight it for the committee.

Mr. DI LUZIO. Mr. Chairman, I apologize for not submitting to the committee a copy of my biography. I am a professional engineer licensed in three States. I started out with the Bureau of Reclamation, working with the Bureau for 4 years, then I worked with the Corps of Engineers for 4 years. When the Manhattan Engineering District was organized by the Corps of Engineers in 1943, I went to Los Alamos. I was at Los Alamos from 1943 to 1956, serving the last 5 years of that time as Manager of the Atomic Energy Commission's Los Alamos Scientific Complex.

I then transferred to Albuquerque, and for 2 years I was Assistant Manager for Weapons Production, Testing, and Development.

I left the Government in 1961, to try private enterprise. I spent 2 years with Fairbanks-Morse. I spent 9 or 10 months in Beloit, Wis., working on an F–M sea water conversion plant which is now the Red Sea.

Then I went to Denver and opened up a hydraulic lab for Fairbanks-Morse. Two years ago, Senator Clinton P. Anderson talked me into coming to Washington to serve as staff director for the Senate Committee on Aeronautical and Space Sciences. I was prevailed upon to accept this new assignment. I don't take this new responsibility lightly because it is a very difficult task, not only technologically, but for many other reasons as well.

I think my background will serve me in good stead in getting the job done.

Successes Attributed to Multiple Talents

Now I would like to read the statement, if I may.

Chairman Hayden. You may proceed.

Mr. Di Luzio. Before I describe the program budget of the Office of Saline Water for fiscal year 1966, I would like to quote one of the greatest of all American inventors, Alexander Graham Bell, who once said:

> Great discoveries and improvements invariably involve the cooperation of many minds.

I think that sums up the work we are doing at the Office of Saline Water. We do not conduct any research, we only serve as a catalyst, we endeavor to stimulate interest, promote cooperation, support worthy projects, eliminate duplication of effort, and disseminate information. Progress toward low-cost desalination processes has not been made by the Office of Saline Water, but rather through the inventive minds of scientists and engineers in universities and in industry. Much of the work they have done, however, could not have been accomplished without the financial support the Office of Saline Water has been able to provide.

We have sought to bring together the various ideas from the universities and colleges of this country and to focusing them in a common program rather than letting these schools do work in a vacuum without information on what is going on in other areas. This is one of the greatest contributions that the Office of Saline Water has made.

The cooperation of many minds is not limited to scientists and engineers; it includes the Senators of this committee, in fact, all Members of the Congress. It includes the President, who once said:

> There is no newer or more vital frontier for any of us than the one we must cross to a lasting abundance of fresh water for all mankind.

It includes the Secretary of the Interior, it even includes little Butch Welbes of Richmond, Mich., who recently wrote us and asked: "What can I do to help?"

Program Expansion

During the past year, new evidence has become available which underscores the essential need for equipment that will provide fresh water from sea or brackish water sources at low cost. I would like to cite just two examples: On August 18 the Department of the Interior, the Atomic Energy Commission, and the Metropolitan Water District of Southern California signed an agreement for a far-reaching engineering study of a proposed desalting plant with a capacity of between 50 and 150 million gallons of water a day as a supplemental water supply to meet the continuing and rapid growth of the southern California area.

Similarly, we have entered into an agreement with the Government of Israel in the range of 100 to 125 million gallons per day. According to water quantity studies conducted in Israel, this plant will be needed in the early 1970's. There are many other locations where desalting plants will be needed in the very near future. We are proposing an expanded program in order to provide the best available technology at the earliest possible date.

CHEMICAL PROCESSING OPERATION STUDIES

We are making some studies of other chemical processing operations to determine the influence of engineering effort, time and size on the cost of product; and the information we are obtaining is both interesting and encouraging.

In figure 1 I have compared the work of the Office of Saline Water with technology of the same nature which requires the same kind of talent and the same kind of skills. If we look at the history of urea plants, we find that as the plant size builds up, the cost of product comes down dramatically. Each succeeding plant is a much better plant than its predecessor with lower capital investment, higher yields.

This has all been done by American industrial ingenuity. When there is a need, engineers will find a way to cut the cost. There is a great possibility for similar progress in desalinization. We are pushing very hard to achieve the ultimate efficiencies possible in the various processes.

Chairman HAYDEN. Your charts will be included in the record.

Mr. DI LUZIO. I have three of them which give cost data on urea plants, chlorine manufacturing costs, and acetylene production cost. These are examples of closely related technologies to the saline water conversion program.

(The charts referred to follow:)

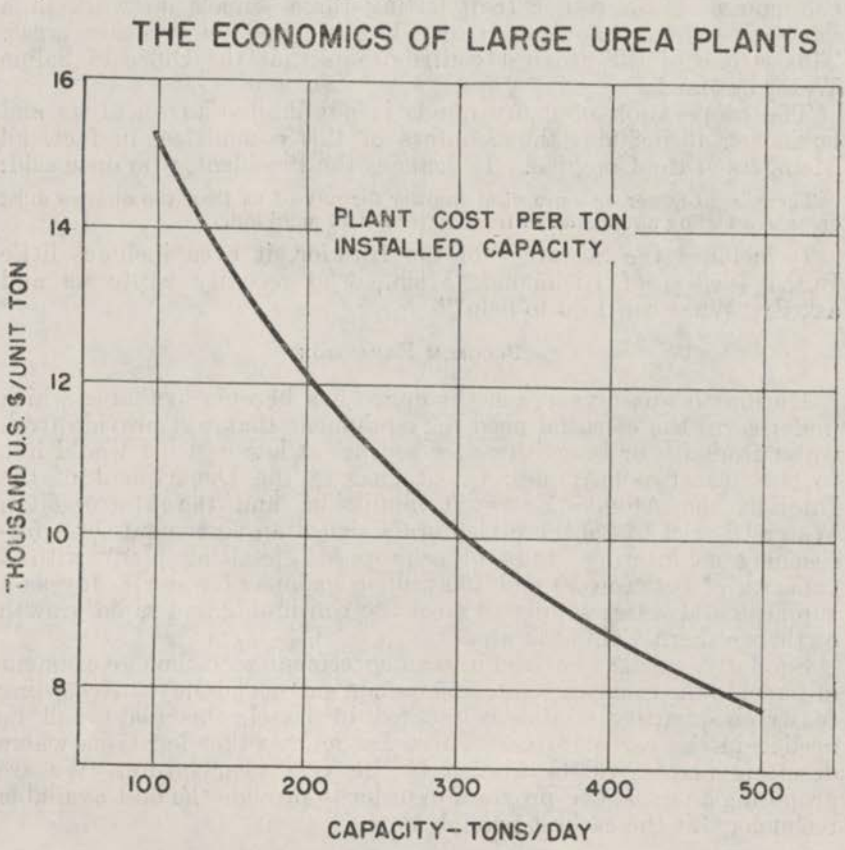

FIGURE 1

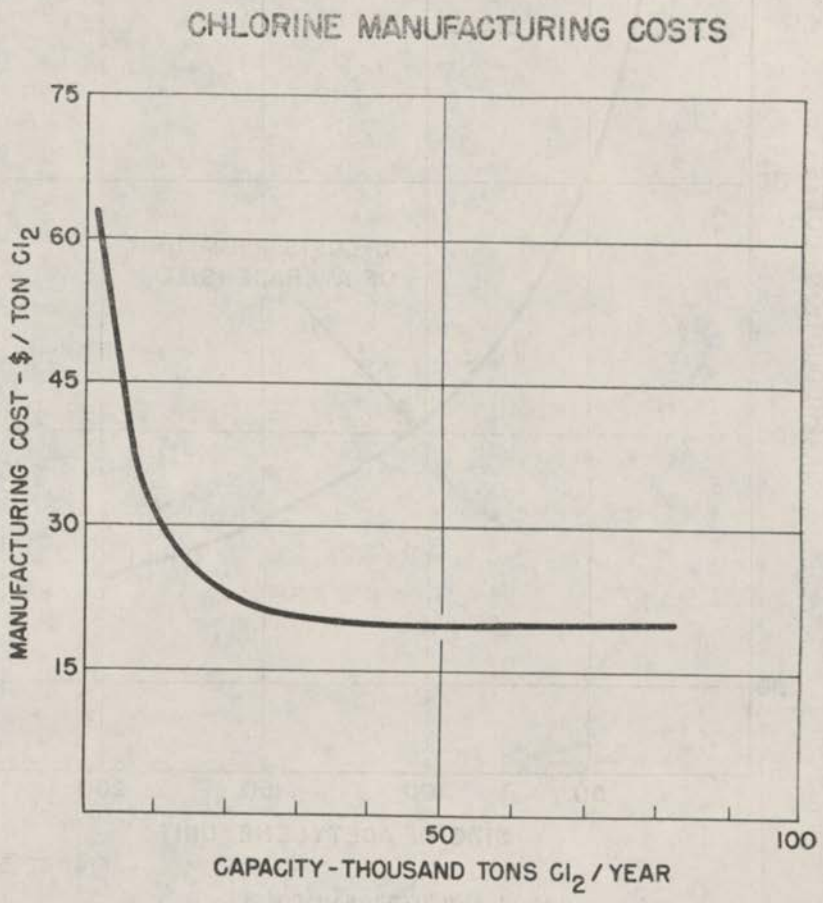
CHLORINE MANUFACTURING COSTS
75
60
45
30
15
MANUFACTURING COST - $ / TON Cl2
50
100
CAPACITY - THOUSAND TONS Cl2 / YEAR

FIGURE 2

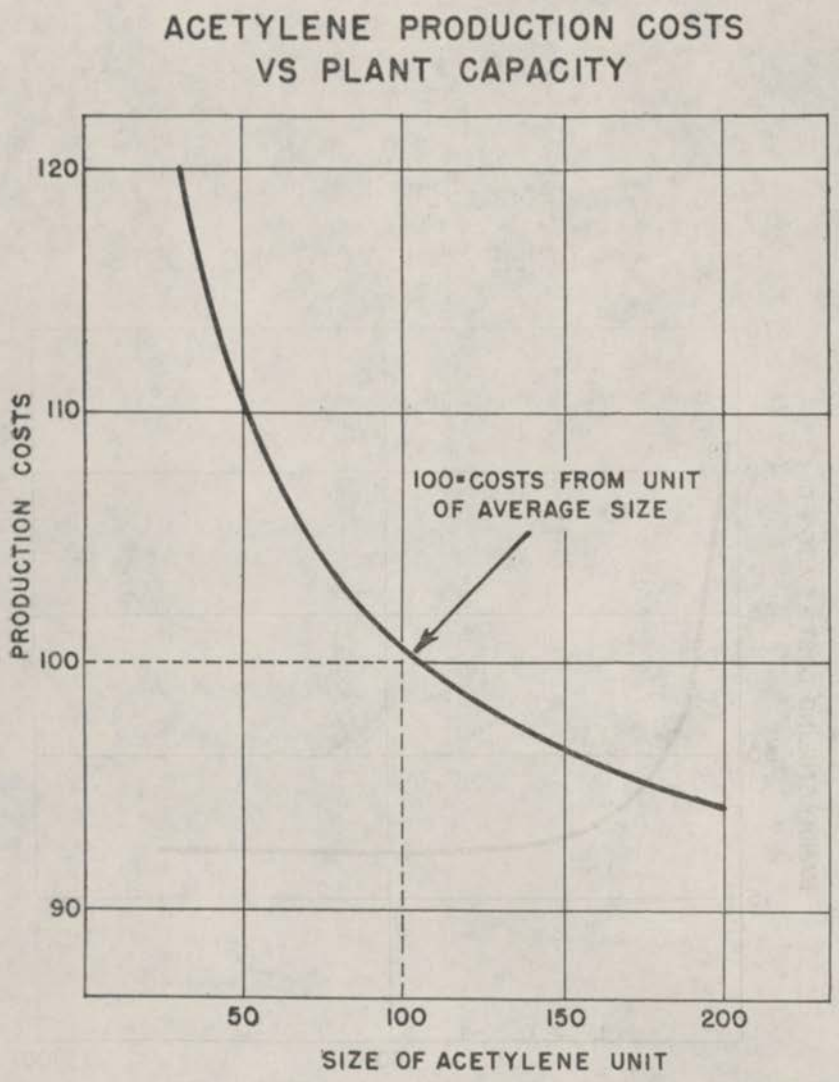

FIGURE 3

LABOR AND OVERHEAD COSTS

Mr. DI LUZIO. Labor and overhead charges per ton of product also decrease as the plant size is raised. The number of operators generally does not need to be increased when equipment sizes become larger. Also, overhead charges can generally be spread over a larger production without very much increase in total expenditure.

A discussion on scale-up considerations must take into consideration the basic elements of the process. The chemical processes we have just cited are far more complex than the conversion of sea water to fresh although they do not have the same severe economic constraints.

Further, at the time some of these chemical processing plants were built, less was known about the chemical process itself than we today know about sea water conversion. We still need to know much more about sea water if we hope drastically to reduce the cost of water. It is our belief that we can substantially reduce the present cost of conversion if we incorporate today's technology, and understood improvements, which up to this point have been utilized only in plants of 1-million-gallons-per-day capacity, in multimillion-gallon-per-day water factories. Our extrapolations jibe quite closely with the results already demonstrated by other chemical processing experience. These dramatic reductions in cost did not come about because of a miracle or a breakthrough, but simply through good hardheaded engineering practice and experience. We expect to apply that same engineering approach to the desalination program.

We will talk a little more about how we approach industry to tap their knowledge in actual manufacturing plants and actual design of production plants rather than try to do it in an "ivory tower."

Budget Requests for 1966

The estimate for fiscal year 1966 is $29 million, consisting of $26,515,000 for research and development and $2,485,000 for operation and maintenance and process changes of three demonstration plants. This represents increases in the amounts appropriated for research and development of $16,515,000 and $235,000 for demonstration plants.

The major expenditures planned for the funds are as follows:

Program analysis and coordination—$605,000: The estimate of $605,000 is an increase over the amount available for 1965 of $205,000 and will be applied to the economic research program and participation in international and national engineering feasibility studies. Individual plans of the various process divisions and service groups will be integrated into an optimum overall work effort toward established short- and long-range goals.

The program is ready to set up engineering and economic targets utilizing present technology. At the same time we are pushing basic research for the hopeful day when the major breakthrough is achieved that might produce water at a fraction of what it is now costing with present processes.

The staff performs four assigned functions: (1) program analysis, (2) program planning and budget policy formulation, (3) program coordination, and (4) economic research.

Program Analysis

There is an immediate need for more precise determination of the research, development, design, construction, test and demonstration programs from the scientific, engineering, and economic standpoints. This includes analysis of the research and development portion of the program, preparation of scientific, technological, and operational project classifications, operational objectives, and identification of paths for attainment of such objectives.

This relates to the short-range target of what we hope to do in the next 5 to 7 years as well as what we hope to do in the long range.

I think we have to start sharpening our objectives and start planning to do something in a practical way with the knowledge we have now. I think research is wonderful, and necessary, but it is going to take engineering now to really show what these processes are capable of doing.

PROGRAM PLANNING AND BUDGET POLICY FORMULATION

In the light of quantitative and qualitative national water supply standards and requirements, and on the basis of inputs from the economic research program, together with the results of a number of engineering and economic feasibility studies and advice from industry, we are establishing standards for the economics of demineralizing saline water, developing tactical research and development requirements and adopting program schedules and priorities to meet these requirements.

Different plants will fit different conditions on the basis of plant size, fuel cost, the different kinds of waters we will be processing and other local factors. There is no one single process that will meet all the various needs. We have to start pinpointing our shots to find out which process will meet the greatest need.

PROGRAM COORDINATION

Emphasis is being placed on effective coordination of the research and development effort with related programs of the Federal Government, including international desalination programs and activities involving OSW participation.

ECONOMIC RESEARCH

A research program must be conducted to develop the economics of desalination in realistic situations of deficient or highly mineralized water supply.

Theoretical problems can be set up to assist in the development of technology to meet these situations. It provides a good exercise to give us a feel for the size and kind of plants we will need. We will need this experience when we have to face up to a specific situation, a specific community, a specific kind of water. We cannot do it in a vacuum. We have to look at a community that has a particular need.

The program is aimed at identifying useful applications within the framework of the economic realities of life. This project will help determine which desalination processes are most likely to be feasible at various locations; what may be the most needed conversion plant sizes; and the probable times when future desalting plants will be required.

BASIC RESEARCH—$6 MILLION

Charles F. Kettering once said:

> Research is a high-hat word that scares a lot of people. It needn't be. Essentially it is nothing but a state of mind—a friendly, welcoming attitude toward change.

Basic research is the process of mining the mysteries of nature to produce the bricks or material out of which the edifice of applied research and engineering development is built. Without basic re-

search, the entire process or program may become only a reshaping or a rearrangement of the same old bricks.

Saline water conversion is in its infancy, although well over 30 million gallons per day of fresh water are being produced from saline sources. The cost of desalination has been reduced over the past 10 years, but it is still relatively high. Nevertheless, in a few areas desalination even now is competitive with other means of obtaining potable water. Certainly part of this Nation's water requirements in the years to come will be supplied by desalination, although it does not provide a panacea for all the water problems. It might be said that desalination is in the same category as the transmutation of base metals to gold. The transmutation problem has been solved, but in a way early chemists never dreamed of. Desalination likewise may be solved in a manner not even thought of today. Needed fundamental data, new ideas, and new processes can be obtained only through basic research.

It was not until enactment of the Anderson-Aspinall Act, in September 1961, that the Office of Saline Water was in a position to initiate and support a meaningful basic research program. Our research effort is devoted to developing an understanding of the kinetics and mechanisms by which heat, water molecules, and ions are transported to and across boundaries so that these basic steps can be made fast and efficient. Fundamental principles, new concepts, and the attainment of new knowledge that is generally applicable to any process of saline water conversion are being emphasized. It involves fundamental studies of all relevant areas of science and engineering, includes investigations involving byproducts, and stresses publication and coordination of pertinent scientific data.

PUBLICATION OF SCIENTIFIC DISCOVERIES

We publish information based on the results of research done by others. This may either stop someone from treading the same path or it may give someone that little idea which solves one of the problems in his research area. Research perpetuates itself by adding to someone else's knowledge. As Newton once said—

> I see further only because I stand on the shoulders of a giant.

He saw more about nature because he had understood the work of people who were his predecessors in science. This is the way progress has made more research possible.

AREAS OF RESEARCH

Current research projects, numbering well over 100 contracts and grants, can be conveniently classified into four areas of research activity; namely:

PROPERTIES OF WATER

The purpose of the investigations in this category is to obtain a comprehensive theoretical understanding of water and water systems to serve as a basis for separation and purification processes.

SEPARATION PROCESSES

The investigations on separation and purification processes are designed to provide new information on thermodynamics, electrochemistry, phase and chemical equilibria and kinetics, and mass and energy transport in both physical and biological systems.

INTERACTIONS AT BOUNDARIES OF WATER SYSTEMS

Inefficiencies in conversion processes are largely a result of events at surfaces or phase boundaries. The purpose of these studies is to understand and make use of physical and chemical processes on surfaces and at interfaces, and of colloid systems for separation and purification.

We study the properties of salt in terms of brine and its byproducts. The concentrated brine effluent of a conversion plant may have a useful purpose. We study membranes which are the key to the electrodialysis and reverse osmosis processes.

There recently have been some rather meaningful efficiency increases in the passage of water through reverse osmosis membranes. We started off at two-tenths gallon per square foot a day. Right now the industry knows how to make some that pass 23 gallons per square foot a day. We are also interested in the lifespan and the cost of the membrane. Eventually we have to put these in an operating plant of a larger size.

ENGINEERING AND DEVELOPMENT

Engineering and development, $18.78 million, is divided into three process divisions: The Distillation Division, for which we are requesting $12 million; the Membrane Division, $3 million; and the Special Projects Division, $1.43 million. It is in these three divisions that we conduct the hardheaded engineering necessary to milk the benefits from known processes. This is where we learn by doing.

DISTILLATION DIVISION

The goals for the Distillation Division in fiscal year 1966 require an early evaluation of design studies and a selection of one or two designs or processes which will be converted to hardware, that is full-scale concrete and hydraulic modules of the large prototype plants to be built in the next several years.

Construction of these modules will increase the cost of the program immensely. For example, one module made up of several evaporator stages with required sea water intakes, boilers, large pumps, motors, heat exchangers, and instruments will cost approximately $7 million. However, this expenditure will insure the successful operation of prototype or production plants costing from $35 to $110 million. Also in the short-range, high-priority program will be the construction and testing of flashing devices and scaled-up sections of evaporators to prove out techniques and arrangements developed in the design studies.

To aid the long-range program, work will be continued on advanced evaporator concepts in the 250-million- to 1-billion-gallons-per-day size range. These studies will include several distillation processes such as vertical tube, vapor compression, and combinations of both.

In the area of a 250-million- to 1-billion-gallons-per-day water plant, we only plan theoretical studies. We are not doing anything in terms of hardware because we would not know where to start. These are plants completely out of our vision at the present time. Nor do we know of a specific need, which is really the motivating force for developing something, a need which can be defined.

This longer range program will also include continued tests on several pilot plants to evaluate high-performance heat transfer surfaces, and high-efficiency flash evaporation processes. Work will also continue on component development for large-scale distillation plants.

MEMBRANE DIVISION

There is a membrane plant in Buckeye, Ariz., built by a private concern which is desalting brackish water for around 50 cents per thousand gallons. I don't want to dwell on that cost because I don't understand the economics on which it is based.

The research and development effort in electrodialysis has been concerned with the evaluation of available membranes and the pilot plant testing of manufacturers equipment designs. Studies have been recently initiated toward the development of lower cost membranes, and an engineering study was initiated on large electrodialysis plants.

Specific emphasis will be placed on membrane application studies and the operation of special test units at Webster, S. Dak., and at other brackish water test sites. Work at the Bureau of Reclamation Laboratories in Denver is covering special process problems such as polarization, cell designs, and hydraulic effects. These will be expanded. Since both reverse osmosis and electrodialysis are membrane-type processes, they have similar problem areas for which a common supporting research and development program will be undertaken. In particular, the field of pretreatment will be given special emphasis to eliminate or minimize the problems that can be expected with membrane fouling.

REVERSE OSMOSIS

Reverse osmosis was mentioned earlier as a part of the basic research effort. The practical applications of the process will be developed by the membrane division. The process is inherently economical since it does not require a phase change. Therefore, energy costs may be held to an extremely low value, and there is an inherent simplicity in the system which increases the savings. I think the key here again is that it does not have to go through a phase change. Not from a liquid to solid or liquid to gas.

The proposed program emphasizes and accelerates membrane development, hydraulic studies, and hydraulic cell designs. A concurrent and continuing program of preparation of conceptual designs and model testing of the most promising designs is included. Current experience indicates that the operation of the 1,000-gallons-per-day pilot plant should be continued during fiscal year 1966.

PRESENT STATE OF THE ART

The work carried on to date has answered many of the outstanding questions about the reverse osmosis process. The results to date also point out that much additional research is required with respect to

membrane cost and lifetime. Although present estimates for membrane costs are in the order of $3 per square foot and membrane lifetime is estimated to be 6 months in brackish waters, potential suppliers of membranes are currently examining production costs and better estimates of what can be expected in this regard will be forthcoming in the near future if cellulose acetate membranes continue to be the membranes of choice for reverse osmosis desalination. The problem of membrane life, however, is more difficult. Available data on the question of lifetime are not entirely self-consistent, and the mechanism of failure is not understood.

Special Projects

This Division is responsible for new process developments and engineering research other than in distillation and membrane field. Applied research and development activities at this time include crystallization, deaeration, byproducts, brine disposal and ion exchange.

Small pilot plant experimentation on vacuum freezing and secondary refrigerant will continue in an effort to bring about improvements which will ultimately lower the cost of product water. Operational evaluation of the 200,000-gallon-per-day east coast conversion plant which utilizes a freezing process will be conducted in order to test this version of direct contact-controlled crystallization freezing process. The investigation of two variations of the hydrate process at the pilot plant level is planned to capitalize on the promising results obtained to date.

Chairman Hayden. How many plants do you have on the east coast?

Mr. Di Luzio. There is only one east coast demonstration plant. We also have six pilot plants.

In addition to the above, the Special Projects Division will perform work in support of other programs financed from funds requested for the programs to be benefited. This includes work on deaeration, byproducts, and pretreatment.

We will be studying deaeration because this is a critical problem in a high-efficiency distillation process. In fact, some of the problems that were uncovered in the operation of the Freeport plant indicate that the key to treatment of waters may well lie in how you handle the deaeration and what kind of chemistry we apply at that point.

Engineering Services Staff

The Engineering Services Staff, $2 million, provides general engineering support services for the development and preparation of designs, drawings, and specifications for construction projects; preparation of engineering cost estimates; supervision of field construction; supervision of the management and operation functions of test stations; and other engineering assistance for process and plant development.

ACCELERATED ENGINEERING AND DEVELOPMENT

The accelerated engineering and development effort to scale up the size of distillation plants to multimillion gallon-per-day capacities

requires establishment of a facility to enable onsite testing of full-scale size components and modules of the large plants.

CONTRACTS WITH PRIVATE FIRMS

Senator MUNDT. What percentage of work is done by contract with private firms?

Mr. DI LUZIO. We have very little in-house engineering activity except in the sense of passing judgment on proposals or analyzing qualifications of companies' proposals. We may put projects together as a result of three or four studies from which we see a pattern begin to develop. We then may try to get someone to look at this new package from an economical engineering standpoint. We really are not designing plants in-house. We try to germinate ideas and promote them. The actual research is done by private firms selected on the basis of their industrial experience or their past experience in sea water conversion. We really are a coordinating crossroad.

Senator MUNDT. As I recall, the one in Webster was done by a Japanese firm.

Mr. DI LUZIO. Yes, that is right.

ACCELERATED ENGINEERING AND DEVELOPMENT

To meet the critical requirement for large plants, we first have to test full-scale models of a process which has promise for large plants. Rather than commit an untried and underengineered process, we have got to build and test a model of whatever processes we are talking about that might be utilized in the large 150-million-gallon plant. They will have to be tested to be sure we understand the phenomena, the engineering cost, and everything else before we commit ourselves to the 150-million-gallon plant. If we don't do this we will be gambling on extrapolated information which may not turn out to be valid for a large plant. So we have to go to a large-size model to get the data we need. In order to do this we need a test facility which is located on the west coast purely because this is the place where we see the first application of large plants. We like to have the test models as close as possible to the actual site of the large plants.

A brackish water conversion testing facility will be installed at one of the brackish water conversion demonstration plants or other appropriate location. It will provide for pilot plant evaluation of membrane and distillation processes for the conversion of brackish water.

The Research and Development Test Station at Wrightsville Beach, N.C., has developed into a highly important facility at which the major portion of all pilot plant work supported by the Office of Saline Water is performed. To adequately support the increased pilot plant activity, certain modifications and additions to the facilities at Wrightsville Beach are necessary. Improvements include expansion of existing office and locker room space, construction of a warehouse, provisions for water storage, providing an underground drainage system, and the installation of an emergency generator.

ENGINEERING EVALUATION STAFF

The Engineering Evaluation Staff, $350,000, is small, but very important. It is responsible for analyzing and evaluating technical and cost data for the comparison of the various processes and unit operations. Evaluations of processes will be performed on a continuing basis to establish the time schedule of future work and will measure the results obtained from engineering tests, operation of pilot plants and large operational plants.

I don't wish to leave the impression that we will be able to do this with our in-house talent. We are going to need the services of large consulting firms to study these complex problems, to come up with engineering estimates of cost of construction and other things. What we hope to maintain is a small group of experts in these disciplines so that we can write a decent scope of work or discuss the problems intelligently with the contractors or consulting firms which will do the economic analysis.

ADMINISTRATION AND COORDINATION

The estimate of $1,130,000 is an increase of $387,000 over the amount available for 1965 and is for the necessary additional personnel and other administrative costs required by the accelerated research program and the changes in the organization and management structures.

The amount requested provides for planning, supervision, and administration of research and development contract funds. The number of scientific, engineering and support personnel allowed at the present time is insufficient to effectively accomplish the desired objectives of the program. The estimate includes an increase of 20 positions.

TECHNICALLY COMPETENT STAFF REQUIREMENT

The saline water conversion program is very broad in scope. The Congress has defined saline water to include sea water, brackish water, and other mineralized or chemically charged water. Implementation of the legislative directive to produce quality water from saline sources at low cost requires a highly competent technical staff with training in a broad range of disciplines. In carrying out their functions the scientists and engineers of the Office must be able to competently evaluate research and development proposals. The easiest thing in the world to do when we get proposals from research institutions or universities is to accept them all because they are all of some interest. They could provide a little bit of new technology or knowledge. We know we can't fund all proposals, so we have to be selective. This takes knowledge. We must have a person who can properly analyze the proposal and decide if it fits our short- or long-range requirements.

We have statistics to show that we turn down a great number of proposals not because they are not worth doing but rather because they are not directed to our specific program and we don't see how we can afford to fund them and then sacrifice something more important. It takes real talent to do this, or to defend the turndown of a proposal, which in many cases comes from some of the large universities in the country. We can't just say "We don't like your proposal" and turn

it down. We have to give them intelligent reasons. This can only be done if we understand the proposal.

The proposals may be plant designs, plant operations, or the proposals may relate to basic research on water in all its phases, as a solid, liquid, gas, or the properties of solutions, or of crystals. In addition to evaluating proposals, the Office of Saline Water technical staff must also formulate the technical scope of contracts, assist in the planning, procedures, and direction of the research and development projects, administer the technical work, evaluate the progress, and results of the research, and plan future technical efforts.

DISSEMINATION OF TECHNICAL INFORMATION

In the stimulation of interest in the program and in the dissemination of technical information, very competent experienced individuals are necessary to organize and preside at symposia in meetings of national technical organizations. Likewise, these individuals have to be able to discuss the program with high-level executives in universities, research institutions, industrial organizations, and the Office of Science and Technology. These activities result in proposals being made to the Office of Saline Water for worthy research and development projects. It takes talent to recognize talent and talent to manage and coordinate talent.

CONTRACTUAL PROGRAMS

In order to maintain effective management control in a contract-oriented program, it is essential that only personnel of demonstrated ability be assigned to evaluate technical proposals, and to negotiate and manage technical contracts. To accomplish this, it is necessary to recruit Federal personnel in both management and technical disciplines who are at least equal in ability to the type of personnel engaged by private companies.

SCIENTIFIC COMPETENCE REQUIREMENT

The scientific and administrative responsibilities that are placed on the staff of the Office of Saline Water are complex in nature and clearly require executives of superior ability and mature judgment. High on the list of qualifications is that the scientists have performed original and independent research in their speciality, and have published in recognized scientific journals and are known by people in their field. Many of our project scientists hold Ph. D. degrees and they have also had several years in industrial and academic research both as scientists and as managers of research projects. This type of technical expert can provide the program with the reliable evaluation of research and development performances so necessary in an imaginative and aggressive program. In this area of activity, the Office of Saline Water has also made use of consultants, experts in particular scientific and engineering fields. This has avoided the necessity for the Office to maintain a large staff with the capability of covering in depth all scientific disciplines.

CONTRACTUAL PROGRAM

Of great importance is the administering and monitoring work performed under contracts. Two extensive reports (the Bell report and Committee on Government Operations report on NIH) have emphasized the necessity of highly qualified personnel for this activity.

CONCLUSION

We welcome any questions members of the committee may have concerning the saline water conversion program, especially any questions you may have concerning our rather desperate need for additional staff. On behalf of the entire staff of the Office of Saline Water, I would like to conclude my remarks by thanking the members of this committee for the interest and support they have always provided this program.

INCREASED AUTHORIZATION FOR RESEARCH PROPOSAL

Chairman HAYDEN. I note that you propose to request that the $75 million authorization for research be increased by $200 million, and that you be given authority to build additional experimental test facilities. When do you expect this legislative proposal will reach the Congress?

Mr. HOLUM. Mr. Chairman, the suggestions that you have quoted come, of course, from the report to the President of the United States, prepared by the Department of the Interior. The legislation is being considered by the President and the legislative division. I expect it will be transmitted shortly to the Congress.

WEST COAST TEST CENTER

Chairman HAYDEN. Please expound upon the proposed west coast test center, indicating its present status, its location, and the date when you expect it to be operative.

Mr. HOLUM. Mr. Chairman, no final decisions have been made as far as the west coast test site is concerned. We will discuss it with you further when you consider our supplemental appropriation request. We have, however, been in contact with many organizations on the west coast, including the State of California, that have indicated a great deal of interest in cooperating with us and in helping us to get this west coast test facility operational just as quickly as we possibly can. We do consider it a matter of urgent importance as far as the program of the Office of Saline Water is concerned because it is going to be one of the key components of the major leap forward we are talking about in 1965, but no final decision has been made.

DEMONSTRATION PLANTS

Chairman HAYDEN. You have now five demonstration plants either authorized or in service. Can you briefly comment upon the accomplishment and status of each of these plants?

FREEPORT, TEX.

Mr. HOLUM. I will be happy to, Mr. Chairman. The first plant that was placed in operation was the plant at Freeport, Tex. In the Department of the Interior we experienced some consternation after this plant was first placed in service. We found mechanical difficulties and it had to be shut down. We learned very quickly that these are experimental plants and that we do have to expect trouble, and make modifications. The Freeport plant is now operating very satisfactorily. Now that we have made modifications in it, it is producing a million gallons of water per day. It could produce 1,400,000 gallons per day if some of the key components—I think that is essentially some of the pumps—had greater capacity.

Chairman HAYDEN. Is there use for the water being produced?

Mr. HOLUM. Yes; the water is being sold to the local community and the Dow Chemical Co.

POINT LOMA, CALIF.

The second plant at Point Loma, multistage plant, operated very successfully. We had problems with the feed water intake and seaweed, another example of the type of thing you run into in an experimental and developmental program. The plant was operating so successfully that when we had trouble in Cuba and were faced with water supply problems for the naval base at Guantanamo Bay, the plant was transferred to the Navy for use at Guantanamo Bay where it is now operating successfully.

Chairman HAYDEN. I understand some improvements were made in Guantanamo.

Mr. HOLUM. Yes; the plant has been modified, partly at least, on the basis of experience that we had in operating the plant at Point Loma.

Senator MUNDT. Did the Navy pay you for that plant?

Mr. HOLUM. Not yet, although, Senator Mundt, the final details of the transfer have not been worked out at this time. It is under negotiation.

Senator MUNDT. Have you agreed on a price?

Mr. HOLUM. Well, it is being agreed on at the present time.

Senator MUNDT. I see.

Mr. HOLUM. This was an emergency transfer.

Senator MUNDT. Yes.

WEBSTER, S. DAK.

Mr. HOLUM. The plant at Webster, S. Dak., is in some ways the "crown jewel" of the five demonstration plants. From the operational point of view it is completely successful. We have got to the point now where it is operating unattended on an automated basis during the nighttime hours. The process has proved itself so successful that two communities, Buckeye, Ariz., and Fort Mansfield, Tex., where water problems are very acute, already have purchased plants using the same process.

Mr. MUNDT. Can they produce water on a commercially feasible basis without any Government help now?

Mr. HOLUM. They have bought them on a commerical basis. I hasten to add, Senator Mundt, that these are communities which have

very critical water supply problems. We think that possibly the costs can be reduced substantially, and need to be reduced substantially, before many communities all over the United States that have brackish water problems will be interested in the process.

ROSWELL, N. MEX.

The other two plants are not operating successfully at this time. The one at Roswell, N. Mex., was designed to produce a million gallons of water per day from a brackish water source and did get a real brackish water source at Roswell.

Chairman HAYDEN. Where is the place?

Mr. HOLUM. Roswell, N. Mex. The plant has operated for a short period of time and I believe for short intervals at design capacity but it has not operated successfully for a sustained period up to the present time.

Senator MUNDT. You mean you can't get the brackish quality out or it is too costly?

Mr. HOLUM. It is mechanical problems in the plant. We think the plant will operate successfully after modifications have been made in the equipment, but we just have not solved all the problems.

Mr. DILUZIO. There is a silicate in the water.

Senator MUNDT. I understand these are all experimental plants. It takes time to find the answer.

WRIGHTSVILLE BEACH, N.C.

Mr. HOLUM. This plant at Wrightsville Beach has a little different history than the other four. The process selection committee that was appointed and made the decision in 1958 or 1959 had selected the freezing process as one of the five processes to be tested in a demonstration plant. When we secured the bids for the construction of the plant it became quite clear that the freezing process had not been developed to the point where it really met the criteria for a demonstration plant.

This was worked out very carefully in the process selection committee. Instead of constructing a demonstration plant we have constructed what we now call the east coast conversion plant.

The freezing process does merit more research, more development than it has had up to the present time. Although this plant is completed—we have not yet been able to make it operate. We are concentrating our efforts at the present time on the smaller freezing pilot plant that uses essentially the same process. We are solving the engineering problems on the smaller pilot plant with an attempt to modify the big one accordingly.

ENGINEERING FEASIBILITY STUDIES IN FOREIGN COUNTRIES

Chairman HAYDEN. In your justification statement you indicate that the engineering feasibility studies will be carried on in fiscal year 1966 in Egypt, Australia, India, and Greece. What type of studies are planned in these countries and why were they selected?

Mr. HOLUM. These are not final decisions. There is a tremendous amount of international interest in the program of the Office of Saline Water. Both President Kennedy and President Johnson, and I am

sure the Congress concurs, have agreed that we should share all our knowledge and know-how in this field with our world neighbors. This is not a one-way street.

The opportunities that we have to study specific problems, such as the study we are doing now with the State of Israel, provide us with an opportunity to increase our own knowledge and know-how.

Chairman HAYDEN. In other words, somebody over there might have an idea which is worth while?

Mr. HOLUM. This is a two-way street. We think that the United States is providing a lot of pioneering leadership in the field. We can also benefit by what scientists have been doing in other countries.

Senator MUNDT. What other countries are making headway in this field?

Mr. HOLUM. Senator Mundt, we just completed in 1964 an exchange of scientists with the Soviet Union. We found out that the U.S.S.R. has a rather substantial program. We came away from this meeting convinced that there were mutual benefits from the exchange of technical information. We can learn from them and they can learn from us.

But they do have a substantial program. The nation of Israel has a smaller but a significant program for desalting. The British have not only done a substantial amount of research in the desalting field but they have sold a substantial number of small desalting plants at a fairly high cost on a commercial basis.

There are many other countries carrying on this effort and we should all work together to make sure each country gets the benefit of what the others are doing.

COMPARABILITY OF UNITED STATES, RUSSIA, AND GREAT BRITAIN EXPENDITURES

Senator PROXMIRE. Is there any evidence at all as to how the amount that we intend to spend next year compares with the efforts of Russia, Great Britain, and any other countries? Will we be spending much more; will we be spending about the same, or is there no basis for comparison?

Mr. HOLUM. I think it would be extremely difficult, Senator to make a comparison. I suspect that our total effort will probably be greater than anybody else.

AGREEMENT WITH GOVERNMENT OF ISRAEL

Chairman HAYDEN. I understand the United States and the Government of Israel have entered into a contract to engineer and construct a desalination plant in Israel. Will you enlighten the committee on this contract?

Mr. HOLUM. I will be happy to, Mr. Chairman.

Israel is one country that has an extremely critical water supply problem. They tell us that by 1970 or 1971 they will be using all of the water that is available to the country. If the country is to continue to have economic growth, they will have to have a new source of water supply.

We have entered into a cooperative agreement with the nation of Israel and the Atomic Energy Commission to do an engineering feasibility study. The study will be financed half by the nation of Israel and the other half by the United States.

The U.S. portion will come half from the Office of Saline Water and half from the Atomic Energy Commission. The total cost of the study is $341,000.

Chairman HAYDEN. I assume that is water out of the Mediterranean.

Mr. HOLUM. Yes.

ENVISIONED PLANT FOR USE OF MULTIPLE COMMUNITIES

Chairman HAYDEN. On page 11 of your justification you indicate that a group of selected communities are to be studied to determine whether it will be feasible to establish for joint use a saline water conversion plant. Has your study proceeded far enough for you to know the location and composition of this group of communities?

Mr. DI LUZIO. We have only started to gather this list of communities. This is part of the problem we have because we lack personnel.

We have to move cautiously on what money is put into hardware except in response to a need. The only way to establish the need is to survey specific communities. There are some cities who have indicated a real interest and have asked for studies.

There are other places in brackish water areas that are very much interested in being brought up to date on the current technology. This is one of the things we would like to do.

Mr. HOLUM. If I could make a comment here, Mr. Chairman. Senator Mundt and I both come from the same State and our State has a tremendous amount of brackish water. We both feel that one of the things which has contributed to the smaller level of economic growth in South Dakota, more than anything else, is the quality of water, but we don't know a great deal about it.

COMMUNITY COST EVALUATION OF POOR WATER

One of the things that the Office of Saline Water is doing in this field, and it is a very modest effort, is making an evaluation of what poor-quality water costs the community; what it costs as far as industrial growth is concerned, what it costs so far as increased cost of plumbing is concerned, and the facilities people are required to have in their homes.

We are making a study at Buckeye, Ariz., so that we can find out. We think the country ought to know what poor water really costs a community. I suspect that the communities will find out that they can process water cheaper as a community than it costs for each individual to have processing equipment in his own home to make the water suitable for automatic washing machines.

Senator MUNDT. Mr. Secretary, while we are on the subject of the quality of water in our own State, and specifically Madison and Groton, I wonder if there isn't some way that we could get a little study started of the situation in those two towns. I would like to be able to let the folks know just exactly what needs to be done to give them an adequate water supply.

Mr. HOLUM. I think that is essential information that the people in the community and city fathers need to know, what the costs are to have that water, what it costs the individual homeowner to process it.

In my home in South Dakota we have $250 or $300 worth of equipment in the basement to make our drinking water. I think most of the people in Madison have. They probably would be better off to have a community facility.

Senator MUNDT. Many people spend as much for water as they do for milk. They have to have it shipped into the town.

Mr. HOLUM. I think you appropriately underscored the importance of water to these communities. It is of tremendous importance to these commuities.

AGREEMENT WITH THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Chairman HAYDEN. It has been reported in the press that the Office of Saline Water and the Metropolitan Water District of California have entered into a contract which involves the production of fresh water and power. Will you please talk about that for a minute?

Mr. HOLUM. Yes, Senator Hayden; the contract with the Metropolitan Water District is very much similar to the contract that we have with the State of Israel. The area served by the Metropolitan Water District has a critical water supply problem, as you well know.

We have entered into the same type of contractual arrangement with the Metropolitan Water District, to study with them the engineering and economic feasibility of building a plant that will produce from 50 to 150 million gallons of fresh water per day from the ocean.

It is at this stage, however, purely an engineering and economic feasibility study. It is financed one-third by the Metropolitan Water District, one-third by the Atomic Energy Commission, and one-third by the Office of Saline Water. The cost of the study is about the same.

RELATIONSHIP WITH THE ATOMIC ENERGY COMMISSION

Chairman HAYDEN. What, generally, are the relationships between the Atomic Energy Commission and the Office of Saline Water?

Mr. HOLUM. Mr. Chairman, one of the key elements in the cost of desalting water is the cost of energy or fuel. Our basic relationship is a relationship designed to make certain that the Office of Saline Water and the Department of the Interior have available to them all of the information developed by the Atomic Energy Commission on nuclear energy as a cheap source of fuel.

The Atomic Energy Commission is anxious and willing to coordinate their research and development programs to the maximum extent possible to make sure that it coincides with the needs of the Office of Saline Water for the cheapest possible source of energy.

It is about the same relationship that we have, however, with the Bureau of Mines and the other agencies in the Department of the Interior that concern themselves with the development of conventional fuels.

The desalting plant does not know whether the energy comes from atomic reactors or the coal-fired boilers but the cost of the endproduct is determined by the cost of the fuel. I should add that we have another relationship which we think is very important. Not quite all of our research and development work is done outside the Government by private firms. We have a very useful and rather substantial relationship with the Oak Ridge National Laboratories.

We use their facilities and their talents. We are going to make more use of the engineering laboratories of the Bureau of Reclamation as our office expands.

FIELDS OF RESEARCH AND DEVELOPMENT

Mr. HAYDEN. Will you tell the committee in what particular field your research and development program will be carried on in fiscal year 1966?

Mr. DILUZIO. The bigger fields are properties of water and solutions, the basic chemistry of water and the basic structure of water, because we are always hoping to find the key that unlocks this secret.

We have separation process studies, that is how to separate the salt from the water or separate the water from the salt. While it is generally easier to take salt out of brackish water, it is usually better to take fresh water from sea water.

Under different conditions both of these methods are useful. We cannot put them in the proper slot as to which process clearly is better unless we know specific conditions.

There are problems in the phase changes. When water goes to vapor or when water goes to ice, many things happen. If we understand better how this is done, we can increase efficiencies. For example, a larger size ice crystal would reduce the separation problem in freezing processes.

If water is vaporized, how do we recover all the vapor? These are sample problems. We have basic research in heat transfer rates. Different kinds of materials have different heat transfer properties. In many of these properties the efficiency of the heat exchangers or the heat transfer rates of different kinds of materials is critical as to whether we have good or bad process.

We have both basic research and applied research. When a new process develops to a certain point, the engineers take it away from basic research and put it into a hardware test.

REPLACEMENT OF POINT LOMA, CALIF., DEMONSTRATION PLANT

Chairman HAYDEN. Has anything been done to replace the Point Loma plant in California?

Mr. HOLUM. Senator Hayden, we have had this problem under consideration. It was one of the questions that was discussed 2 weeks ago when I appeared before the House committee. The House Interior Committee at that time expressed real concern over the question of whether or not the Department of the Interior should go ahead with the replacement of that plant without further congressional consideration.

I think at the moment we are looking carefully at what ought to be done at Point Loma, whether or not we can learn a sufficient amount of new information by replacing the plant.

Chairman HAYDEN. There is no question about the need of water in that area.

Mr. HOLUM. No question about the need for water in that area.

Chairman HAYDEN. I understood that some of the water was to be supplied to Mexico.

Mr. HOLUM. In the plant at Point Loma, the water was being purchased by the city of San Diego.

ADMINISTRATION AND COORDINATION REQUEST

Chairman HAYDEN. Would you care to explain to the committee the reason you need a $387,000 increase over the amount available last year for the administration and coordination of your program?

Mr. HOLUM. I am happy you gave me an opportunity to emphasize this point.

During the 4 years I have been with the Department of Interior one of the things which has given me a great deal of concern is having a sufficient staff in the Office of Saline Water to make certain that our administration is sound. To make certain, as Frank emphasized in his remarks earlier, that we have the competence to evaluate and identify the good ideas that come to us from colleges and universities and other research institutions, and after their work is done, that we have the competence again to evaluate what has been performed so that the program can go ahead.

We are determined, and I think the evidence is very clear that the Johnson administration is placing a tremendous amount of emphasis, on holding down employment in the Federal Government. So, the fact that we are able to come here today and discuss with you more positions in the Office of Saline Water, I think, by itself indicates the real need for these positions and I hope that the Congress will approve. A personnel analysis will be supplied for the record.

(The analysis referred to follows:)

OFFICE OF SALINE WATER

PERSONNEL ANALYSIS

	Present	1965 supplemental	1966 budget	Proposed total
Washington headquarters:				
Scientific and technical	32	8	1	41
Stenographic and clerical support	14	4	1	19
Administrative	20	3	5	28
Subtotal	66	15	7	88
Field locations:				
Demonstration plants: Scientific and technical	3			3
Wrightsville Beach:				
Scientific and technical	7			7
Stenographic and clerical support	2			2
Administrative	7			7
Ungraded custodial	9			9
Subtotal	28			28
Total	94	15	7	116

OPERATION AND MAINTENANCE

Chairman HAYDEN. For operation and maintenance in fiscal year 1966, $2,485,000 is requested. When it is considered that $750,000 of the construction, operation, and maintenance item last year was to be applied to the reconstruction of the San Diego plant, this is an increase of $985,000 over the amount available last year.

The justification will be inserted in the record.
(The justification referred to follows:)

Operation and maintenance

Total appropriation and available, 1964	$1,850,000
Appropriation, 1965	2,250,000
Comparative transfer to other account	−750,000
Total available, 1965	1,500,000

SUMMARY OF INCREASES AND DECREASES, 1966

Increases in cost of operating and maintaining and process improvements and changes of demonstration plants	975,000
Related increase in administration	10,000
Net increase, 1966	985,000
Budget estimate, 1966	2,485,000

Analysis by activities

Activity	Fiscal year 1964, amount available	Fiscal year 1965		
		Total appropriation	Transfers	Amount available
1. Operation and maintenance	$1,393,521	$2,010,000	−750,000	$1,260,000
2. Administration	186,816	240,000		240,000
Unobligated balance lapsing	269,663			
Total	1,850,000	2,250,000	−750,000	1,500,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Operation and maintenance	$1,393,521	$1,260,000	$2,235,000	+$975,000
2. Administration	186,816	240,000	250,000	+10,000
Unobligated balance lapsing	269,663			
Total	1,850,000	1,500,000	2,485,000	+985,000

JUSTIFICATION

OPERATION AND MAINTENANCE

1. Operation and maintenance, $2,235,000

The estimate of $2,235,000 is an increase of $975,000 over the amount available for 1965 and consists of an increase in operating costs of $285,000 and an increase in the cost of improvements and changes of $690,000.

(*a*) *Operating costs, $1,195,000.*—The estimate of $1,195,000 is an increase of $285,000 over the amount available for 1965 and covers the operation and maintenance charges of the three plants currently in operation and approximately 2 months' operation of the San Diego replacement plant. The increase in operating costs of $285,000 is influenced by the following factors:

Freeport, Tex., $100,000: The application of successful engineering developments such as improvement of water distribution in the evaporators and changes in water pumps resulting in changing the water from a once-through flow to a recycle flow will make possible a 25-percent increase in capacity and it is anticipated increase in output will increase the normal energy, chemical, and operation costs by approximately 25 percent.

Roswell, N. Mex., $95,000: Work on scale-free operation is currently in process and it is expected that successful results will be achieved by the end of fiscal year 1965. Scale-free operation will result in increased output which in turn will increase energy and operating costs.

San Diego, Calif., $45,000: It is anticipated that construction of the replacement plant at Point Loma, Calif., will be completed around the latter part of fiscal year 1966 requiring approximately 2 months of operation.

On-site process engineers, $45,000: Operating costs have been increased by the compensation of three process engineers. These engineers are the Office of Saline Water on-site process engineers located at the Freeport, Roswell, and San Diego demonstration plants. Personnel compensation for these engineers was included in the administrative costs in prior years.

(b) *Plant improvements, $1,040,000.*—Plant improvements and changes consist of three items:

Freeport, Tex., $700,000: An improvement in multiple-effect systems through small pilot plant studies, has been the development of fluted tubes in evaporators. The addition of a number of multieffect stages utilizing this is proposed to further evaluate this development. It is proposed to undertake this addition as soon as possible so that the potential advantages of obtaining much higher heat transfer rates with the new type of vertical tubes can be determined by obtaining actual cost data for both construction and operation. This also can have a significant impact on the future utilization of the multiple-effect process for sea water conversion.

Webster, S. Dak., $75,000: Facilities are to be installed in order that a number of membranes from several domestic commercial sources and foreign sources may be tested and evaluated. It is anticipated that this will result in finding more efficient membranes, thereby reducing the costs of converting brackish water.

Roswell, N. Mex., $265,000: A new approach is proposed with respect to the vapor compression part of the process at this plant. It is proposed to substitute jet compressors operated from steam supply for the present mechanical compressors. It is anticipated that this change will result in higher efficiency and improved operational economies in this plant.

2. Administration, $250,000

The estimate of $250,000 is an increase of $10,000 over the amount available for 1965. The request provides for the administration of the demonstration plant program, operating and evaluating the engineering potential of the three plants under operation, the personnel required to supervise the architectural, engineering, and construction work of a fourth plant now in the design stage (San Diego replacement), and preliminary engineering of much larger plants now under consideration. In addition, the staff will make field appraisals and direct feasibility studies for additional plants in cooperation with other Federal Government agencies, foreign governments, and State, city, county, and other municipalities. This will provide for an increase in the current Washington, D.C., headquarters staff of one supervisory engineer and one clerical assistant.

Location	Process	Design capacity, gallons per day	Activated	Operating costs	
				1965	1966
Freeport, Tex	Long tube vertical multiple effect distillation.	1,000,000	June 1961	$400,000	$500,000
San Diego, Calif	Multistage flash distillation.	1,000,000	March 1962		[1] 45,000
Webster, S. Dak	Electrodialysis	250,000	October 1961	125,000	125,000
Roswell, N. Mex	Forced circulation vapor compression.	1,000,000	July 1963	385,000	480,000
Three man-years on-site process engineers.					45,000
Total direct operating costs.				910,000	1,195,000
Improvements and changes:					
Freeport, Tex					700,000
Webster, S. Dak					75,000
Roswell, N. Mex					265,000
Administration					250,000
Total estimate					2,485,000

[1] Plant deactivated in February 1964. Replacement plant estimated completion April 1966.

ITEMIZATION OF ESTIMATE

Salaries and expenses

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$1,580,337	$1,500,000	$2,485,000	+985,000
Comparative transfer to other account		+750,000		−750,000
Unobligated balance lapsing	+269,663			
New obligational authority (appropriation)	1,850,000	2,250,000	2,485,000	+235,000
Obligations by objects:				
11 Personnel compensation	150,273	191,000	218,000	+27,000
12 Personnel benefits	11,376	14,000	16,000	+2,000
21 Travel and transportation of persons	21,779	19,000	25,000	+6,000
22 Transportation of things	1,377	1,000	1,000	
23 Rent, communications, and utilities	264,112	238,000	280,000	+42,000
24 Printing and reproduction	9,041	10,000	11,000	+1,000
25 Other services	841,693	704,000	767,000	+63,000
Services of other agencies	19,992	10,000	17,000	+7,000
26 Supplies and materials	56,157	57,000	55,000	−2,000
31 Equipment	4,537	6,000	10,000	+4,000
32 Lands and structures	200,000	250,000	1,085,000	+835,000
Total obligations	1,580,337	1,500,000	2,485,000	+985,000

OPERATION AND MODIFICATION COSTS

Chairman HAYDEN. Please explain to the committee the need for the additional amount requested for operation and maintenance.

Mr. HOLUM. I think Mr. Di Luzio could provide the detail here. It is not just for operation and maintenance of the demonstration plants but also for modification of certain of these plants.

Mr. DI LUZIO. Of the $2,235,000 being asked for operation and maintenance, $975,000 over 1965, it breaks down in this fashion.

Operating cost, $1,195,000, an increase of $285,000 over the amount available for 1965 and covers the operation and maintenance charges of the three plants currently in operation and approximately 2 months' operation of the proposed San Diego replacement plant.

The increase in operating costs of $285,000 is influenced by the following factors:

Freeport, Tex., $100,000: The application of successful engineering developments such as improvement of water distribution in the evaporators and changes in water pumps resulting in changing the water from a once-through flow to a recycle flow will make possible a 25-percent increase in capacity and it is anticipated this increase in output will increase the normal energy, chemical and operation costs by approximately 25 percent.

If you remember, the Secretary mentioned that the plant was capable of making 1,400,000 gallons. We are only operating at a million gallons because of limitation of pumping capability. We are using this plant as a test bed to increase the output and to get more information out of it. We have already made the basic investment. We want to spend a few more dollars to get as much information as we can.

At Roswell, N. Mex., there is $95,000 in that figure to work on scale-free operation. This is a treatment of water to remove some of the contaminant from the water.

ENGINEERING COSTS

There is $45,000 for on-site engineering. These are operating costs for compensation of three field engineers stationed at Freeport, Roswell, and San Diego.

Personal compensation for these engineers was included in the administration cost in prior years. The money is being charged to the account of operation and maintenance. In the past years it was charged to administrative expense. These are really technical people.

PLANT IMPROVEMENTS

FREEPORT, TEX.

There is $700,000 allocated to put in a module at Freeport of a multiple-effect system which uses fluted tubes, a new concept of tube configuration which has tremendous potential because of high heat-transfer rates.

In the original design we used a standard smooth surface tube. Through a parallel development program engineers designed a fluted tube that provided a much better heat transfer surface. We expect to be able to use the same thermal efficiency system and, with much smaller plant dimensions, get the same yields.

These fluted tubes were very expensive initially. Information we recently received from the contractor showed that these tubes can now be manufactured in usable length at a reasonable cost. They started at $3 a pound. They are now available for $1.20 a pound because, all of a sudden, there was a need for them.

We have $700,000 to make some changes and to test this different concept at Freeport. Here again we have paid a basic price for the power source and everything else. It will be a shame not to test this concept, which is so promising, on this facility.

WEBSTER, S. DAK.

There is $75,000 there to install a number of membranes at Webster, which have been furnished from both domestic commercial sources and foreign sources. These are new membrane ideas.

We have to modify the plant to be able to insert these in test beds to see what one membrane does versus another. This will help find a long-life membrane.

ROSWELL, N. MEX.

We have $265,000 for the Roswell plant and this is a new approach in respect to the vapor process. The jet compressors operate through a steamplant rather than the present mechanical compressors. This, again, is trying to solve a problem which has been bugging the Roswell plant because there has been mechanical problems with this piece of equipment. This is a new idea.

You might substitute a kind of jet operation instead of a mechanical operation that might allow the plant to operate at its full capacity which is a million gallons per day.

ADMINISTRATION OF DEMONSTRATION PLANTS PROGRAM

Only $250,000 of the request is for administration. Now, this is only a $10,000 increase over the 1965 amount. This, again, is for

tighter and better administration—well, this is really studying the things that the Secretary spoke about, studying the need and the judgment necessary to decide whether we replace the Point Loma plant or can we find a better use for it.

This is the kind of money that is being spent to make the study, to try to design a plant for replacement but try to put as much of the new state of the art in it as possible. This takes money.

Chairman HAYDEN. Thank you.

Senator Proxmire, do you have some questions?

PROGRAM INCREASE

Senator PROXMIRE. Yes, I have some questions I would like to ask, if I might, Mr. Chairman.

As I understand, this is a step up in the program from $11½ to $29 million; is that correct?

Mr. HOLUM. That is correct.

Senator PROXMIRE. That is an increase of 150 percent in a single year.

Mr. HOLUM. That is correct.

Senator PROXMIRE. The 1964 and 1965 appropriations were around $11 million. They were fairly stable.

Mr. HOLUM. Yes.

Senator PROXMIRE. This program is how old, 12 years old?

Mr. HOLUM. Yes.

Senator PROXMIRE. Have you had experience with this kind of proportionate increase before? Was there not an increase in 1961 that was also very great or 1962?

Mr. HOLUM. Yes, Senator. The rate of increase then was about the same. That is why I would like to emphasize, although we are not considering it this morning, the importance of the supplemental request you will be considering, I hope, sometime in the near future. The $3.9 million supplemental request will permit us during the balance of this fiscal year to start stepping up the level of activity so that there won't be a sudden increase on July 1.

Mr. DI LUZIO. May I say something at this point? I think the biggest increase in cost, Senator, is the actual hardware cost of modular design and building. If you take the $7 million required to design a modular component and you take that out of the total you find that the increase in cost in terms of research and administration is very minor really.

Senator PROXMIRE. It still is fairly substantial. You take $7 million out—you still have an increase——

Mr. DI LUZIO. Of five.

Senator PROXMIRE. At least five, which is a big increase.

Mr. DI LUZIO. Yes, but the money will go to specific studies. We are getting to the area of specific studies such as basic pump design, such as plant conceptual design. We are using Government labs like the Oak Ridge National Laboratory and many talented research and industrial firms.

We are now to the point where talking ends and construction begins. We must start building a modular test of a specific kind of process for a long-range big plant.

ESTIMATED RESEARCH AND DEVELOPMENT TOTAL

Senator PROXMIRE. In the light of that, can you give us any idea of—I know you can't give us a precise idea—but give us any estimate at all of how much this is likely to cost in total. In these areas of research where you are trying to do something which has not been done before, I know that is a very difficult question to answer. Maybe it can't be answered at all. But can you give us some notion as to whether we can expect this to be increased again the following year and in the next 4 or 5 years we might have to spend how much; a billion, or what does this amount to?

Mr. HOLUM. Let me attempt to answer this question this way.

As you have appropriately noted this is a research and development program. I remember the first time I appeared before this committee Senator Hayden recalled that 10 or 11 years ago somebody, I think from MIT, had been before the committee and said we will work on this for an extended period of time and somebody will come along and find the answer overnight. This may be correct and we hope it is. It is not impossible, but I think it is highly unlikely that we will find the answer in 1966. In that case, of course, the work of the Office of Saline Water will be completed. I think it is much more likely that this will be a continuing program that will find ways to drive down the cost of water by nickels and dimes and probably pennies each step of the way. I think the only indication, the best indication, that I can give you of our thinking in general terms is the fact that in the Secretary's report to the President we did recommend congressional authorization of a program in the magnitude of $200 million. The entire sum may or may not be necessary, depending on what develops as a result of the work we carry on in 1966.

Senator PROXMIRE. And you may need more?

Mr. HOLUM. Yes; that is possible, too, but I think it is more likely to be that way.

LOCATIONS OF CONDUCTED RESEARCH

Senator PROXMIRE. Where is the research now being conducted? You have a list of five plants, Texas, South Dakota, New Mexico, North Carolina and the Point Loma plant moved from California to Cuba. Those are the experimental plants, the $2½ million. Can you give us any idea of how widely dispersed your research money is? I understand Wisconsin has some of it which makes me feel that this is a pretty widely dispersed program.

Mr. HOLUM. My statement before the House Interior Committee 2 weeks ago provided a tabulation of all of the research contracts.

Senator PROXMIRE. It is broken down?

Mr. HOLUM. Yes.

(The tabulation referred to follows:)

Office of Saline Water

Research Contracts

FISCAL YEARS 1962–65

Contractor	Contract No.	Total amount	Title	Fiscal year(s)
Aerojet-General Corp	–272	$160,900	Membranes for Pressure Desalination	1963
Do	–338	320,743	Study of Membranes for Desalination by Reverse Osmosis	1964
Do	–435	59,724	New Polymer Systems for Reverse Osmosis Membranes	1964
Aeronutronic	–297	69,872	Separations by Thermal Diffusion	1963
Agricultural Research Service		70,000	Mechanisms of Ion Transfer Across Biological Membranes	1964
Alpha R. & D., Inc	–253	76,600	Prevention of Corrosion	1962–63
Battelle Memorial Institute	–327	103,955	Corrosion Mechanisms	1963–64
Do	–383	200,690	Corrosion of Selected Materials in Hot Sea Water	1964
Bechtel Corp	–313	92,900	Cost Studies of Saline Wster Conversion Plants	1963–64
Black & Veatch	–289	50,000	Standardized Cost Procedure for Water	1963
Do	–320	98,000	Long-Range Economic Study of Saline Water Conversion	1963
Bolt, Beranek & Newman	–246	86,882	Acoustical Vibrations at Interfaces	1962–63
Do	–376	55,808	Influence of Acoustical Vibrations on Deposition from Solutions	1964
Boston College	–389	38,644	Heat and Entropies of Transport of Ions in Water Systems	1964
Burns & Roe	–345	17,350	Dual-Purpose Conversion Plant Cost Studies	1964
California State College at Los Angeles	–396	42,971	Nuclear Magnetic Resomance Study of Salt Solutions	1964
University of California	–264	39,010	Salt Transport and Toleration Mechanisms of Plants	1962
Do	–349	42,960	Intermolecular Forces Between Water and Nonpolar Molecules	1964
Do	–358	69,009	Multicomponent Fixed-Bed Ion Exchange	1964
University of California—San Diego	–393	87,431	Properties of Sea Water and Its Concentrates up to 400° F	1964
University of California—Berkeley	–439	44,560	Polymer Structure and Ionic Transport Properties of Polystyrenesulfonate Model Membranes.	1965
Case Institute of Technology	–388	65,330	Heterogeneous Nucleation of Electrolytes	1964
Clark University	–306	33,840	Thermodynamics of Water Solutions	1963
Do	–456	58,440	Thermodynamic Properties of Large Ions in Solution	1965
Corey, James B		5,000	Economic Studies in Water and Waste Fields	1962
Cornell University	–384	37,128	Transport Phenomena in Fused Organic Salts	1964
Do	–398	66,960	Raman Spectroscopy of Aqueous Salt Solutions	1964
Do	–504	104,800	Molecular Correlations, Phase Transitions and Critical Phenomena	1965
University of Delaware	–431	38,736	Heats of Mixing of Strong Electrolytes	1964
Douglas Aircraft Co	–368	48,166	Inorganic Ion Exchange Membranes for Electrodialysis	1964
Finch, Lewis S		5,000	Assistance to OSW in Selection of Communities for Economic Studies	1963
General Dynamics Corp	–250	499,248	Pressure Desalination	1962–64
Do	–426	99,820	Reverse Osmosis Membrane Modules	1964
General Scientific Corp	–240	181,698	Radioisotopes in Saline Water Conversion	1962
W. R. Grace & Co	–281	98,000	Minerals from Sea Water	1963
Do	–369	99,400	Mineral Byproducts from Saline Water	1964
Hebrew University	–521	46,512	Ion Transport in Dead Sea Bacteria	1965
Hope College	–459	28,000	Nucleation and Precipitation of Alkaline Earth Hydroxides	1965
University of Houston	–512	32,306	Fundamental Nature of Liquids	1965

IIT Research Institute	-430	50,039	Inorganic Ion Exchange Membranes for Electrodialysis	1964
Kaman Instruments	-420	59,689	Electrolyte Concentration Gradients Produced by Magnetic Fields	1964
Louis Koenig Research	-298	36,000	Costs of Conventional Water Supplies	1963
Lehigh University	-351	23,800	Kinetics of Adsorption on Electrodes	1964
A. D. Little Research Institute	-312	30,000	Membrane Action in Desalination	1963
Arthur D. Little, Inc	-372	41,157	Transport Properties of Ion Exchange Membranes	1964
Loyola University	-325	54,047	Diffusion of Ions Through Membranes	1963
Magna Corp	-416	33,311	Ion Transport Across Microbial Membranes	1964
Marquardt Corp	-433	47,260	Pressure-Modulated Adsorption Involving Redox Reactions	1964
Martin Marietta Corp	-411	46,191	Theory of Ionic Flux Through Charged Inorganic Membranes	1964
University of Maryland	-268	77,798	Solvation of Polyvalent Ions	1962
Do	-405	133,078	Interaction of Solvated Ions	1964
Massachusetts Institute of Technology	-279	126,497	Solidification and Separation of Ice	1963–65
Do	-295	96,960	Desalination by Freezing	1963
Do	-315	72,400	Charged Membranes for Desalination	1963
Do	-316	76,100	Polymer Films as Reverse Osmosis Membranes	1963
Do	-404	36,296	Electrochemical and Metallurgical Corrosion of Metals and Alloys	1964
Mellon Institute	-359	173,860	Transport and Relaxational Properties of Electrolytes	1964
Do	-403	90,986	Relation Between Structure and Properties of Liquid Water	1964
Melpar, Inc	-251	21,500	Ion Transport in Saline Water	1962
Do	-299	36,482	Ion Transport in Organic Systems	1963
Do	-387	83,445	Synthetic Membranes To Study Biological Ionic Mechanisms	1964
University of Miami	-461	97,500	Viscosity and Conductivity Studies	1965
University of Michigan	-164	42,000	Scale Deposition on Heated Surfaces	1962
Do	-283	17,800	Fellowships on Calcium Sulfate	1963
Do	-421	17,800	Deposition of Calcium Sulfate Scale	1964
Midwest Research Institute	-249	10,000	Extension of OSW University Research Program	1962
Monsanto Research Corp	-294	123,815	Properties of Multicomponent Salt Solutions	1963–64
Do	-465	59,883	Calcium Sulfate Precipitation	1965
Do	-466	66,493	Thermophysical Properties in Saline Water Systems	1965
Murphy, Dr. George W		2,000	Transport in Cells and Membrane Demineralization	1963
Negev Institute	-432	15,566	Microstructure of Permselective Membranes	1964
Northern Illinois University	-285	21,413	Properties of Ions in Solution	1963
North Star R. & D. Institute	-457	48,942	New Reverse Osmosis Desalination Membranes	1965
Oak Ridge National Laboratory		1,797,000	Proposed Program of Water Research	1962–64
University of Oklahoma	-160	109,599	Electrical Control of Adsorptivity	1962–63
Do	-321	54,279	Solute Properties of Water	1963
Do	-361	83,000	Electrochemical Demineralization of Water with Porous Carbon Electrodes	1964
Oklahoma Baptist University	-371	11,000	Anion-Responsive Carbons	1964
University of Pennsylvania	-462	48,021	Maximum Rate of Vaporization and Condensation of Water	1965
Pennsylvania State University	-408	102,496	Properties of Aqueous Solutions at High Pressures and Temperatures	1964
Philco Corp	-440	73,028	Mass Transfer Properties of Saline Water Systems	1965
University of Pittsburgh	-263	99,600	Structure of Hydrates	1962
Do	-394	176,160	Structure of Water in Hydrated Crystals	1964
Do	-427	55,454	Structure of Salt Hydrates	1964
Polytechnic Institute of Brooklyn	-319	98,850	Ion Exchange Membrane Phenomena	1963
Princeton University	-438	16,359	Evaporation Phenomena	1965
Bureau of Reclamation	-454	45,000	Corrosion of Concrete	1965
Rensselaer Polytechnic Institute	-422	47,820	Conductance, Diffusion and Viscosity in Concentrated Salt Solutions	1964
Do	-458	82,020	Electrochemical Studies of Corrosion Phenomena in Halide Media	1965
Rochester Institute of Technology	-257	50,000	Behavior and Properties of Water During Evaporation	1962
Do	-375	111,000	Boule Flotation on Water and Other Liquids	1964

RESEARCH CONTRACTS—Continued

FISCAL YEARS 1962–65

Contractor	Contract No.	Total amount	Title	Fiscal year(s)
Rocketdyne	–332	$104,120	Determination of Trace Amounts of Organic Materials in Water	1963–64
Do	–333	96,000	Nucleation and Growth of Ice]Crystals	1963–64
Do	–334	110,300	Mechanism of Electrode Demineralization	1963–64
Do	–356	21,673	Bibliography of References Pertaining to Research Relevant to OSW Objectives	1964
Schroeder, Dr. W. C	–276	9,400	Revised Cost Estimating Procedure	1963
Do	–350	18,300	Manual for Estimating Municipal Costs of SWC	1964
Servomechanisms, Inc	–328	48,400	Condensation Mechanisms	1963
Sigmatron, Inc	–419	64,000	do	1964
South Dakota State College	–463	9,000	Hidden Costs of Using Substandard Quality Water in Webster, South Dakota	1965
Southern Research Institute	–229	33,925	Demineralization by Ion Depletion	1962–63
Do	–254	33,000	Transference Numbers of Ions at Elevated Temperatures	1962
Do	–335	8,527	Desalination by Electrosorption and Desorption	1964
Do	–409	92,575	Electrosorption and Desorption	1964–65
Do	–464	73,154	Transport of Electrolytes Through Membrane Systems	1965
Southwest Research Institute	–239	45,673	Boiling Water Solutions	1962–63
Bureau of Standards		87,000	Permeability Characteristics of Membranes	1965
Do		25,000	Properties of Aqueous Mixtures of Pure Salts	1964
Stanford University	–386	54,060	Hydrodynamic Effects of Surface Active Agents	1964
Stanford Research Institute	–265	76,200	Crystalline Monomolecular Membranes of Controllable Permeability	1962–64
Stevens Institute of Technology	–377	29,000	Aqueous Solutions by Nuclear Magnetic Resonance	1964
Syracuse University	–177	57,840	Demineralization by Hydrate Formation	1962
Do	–261	63,684	Mass Transfer in Beds of Particulate Solids	1962
Do	–343	51,000	Kinetic and Thermodynamic Studies on the Hydrate Process	1964
Do	–401	40,700	Reverse Osmosis Systems for Desalination	1964
Do	–402	58,600	Mass Transfer in Beds of Particulate Solids	1964
Temple University	–346	32,957	Ion Transport and Thermogalvanic Effects in Ice	1964
University of Texas	–413	27,360	Spectroscopic Studies of Hydrogen Bonding in Highly Hindered Alcohols	1964
Texas Research Association	–200	16,000	Impressed Electrostatic Fields	1962
Tyco Labs., Inc	–425	98,986	Ion Mobility in Aqueous Solutions	1964
Unified Science Associates	–424	44,028	Role of Ligand Molecules on Ionization Potentials	1964
Washington University	–364	51,876	Solute and Water Transport Across Biological Membranes	1964
University of Waterloo	–406	30,800	Hole Theory of Liquids	1964
Western Independent Research Laboratories	–238	54,007	Pressurization Cycles with Ion Exchange Materials	1962
Westinghouse Electric Corp	–407	107,367	Vapor Pressures at Elevated Temperatures	1964
Whirlpool Corp	–256	43,945	Thermoelectric Heat Pump Investigations	1962
University of Wisconsin	–277	52,300	Energy and Material Transfer Through Gases	1963
Yale University	–260	18,130	Potassium Recovery by Chelation	1962
Yeshiva University	–342	55,951	Ionic, Surface and Membrane Properties of Naturally Occurring Acidic Lipids	1964

Contracts for Processes Development Division

1962 THROUGH PRESENT

Contractor	Contract No.	Total amount	Title	Fiscal year(s)
Aerojet-General Corp	-296	$795,736	Design, Construction and operation of a 1,000 gallons per day reverse osmosis pilot plant.	1962-65
AiResearch Manufacturing Co	-362	36,000	Study on capillary Fluted-Tube evaporator	1963
American Cyanamid Co	-308	30,000	Feasibility study on byproducts from saline water conversion plants	1962-64
American Machine & Foundry	-290	423,840	Development of a 10,000 gallons per day pilot heat pump distiller/concentrator	1962-65
Aqua-Chem	-339	136,000	Research and development on the horizontal spray film evaporator	1964-65
University of Arizona	-247	415,075	Humidification process—solar heaters and evaporating chamber pilot plant	1962-65
W. L. Badger	-330	96,000	Further development of the calcium sulfate sludge technique to prevent calcium sulfate scale in LTV distillation systems.	1963-64
Do	-236	210,120	Further development of the multiple-effect LTV distillation process	1962-63
B-L-H [1]	-510	152,852	Fabrication, construction and erection, and test program for a high temperature flash pilot plant.	1965
Do	-339	24,167	Preparation of designs and specifications for a high temperature flash pilot plant	1964-65
Do	-304	192,393	Internal stabilization technique for scale prevention	1962-65
Battelle Memorial Institute	-300	5,700	Research and development on the fluidized bed distillation process	1963
Do	-284	152,170	Operation of solar distillation test site	1963-65
Blaw-Knox Co	-214	739,950	A 35,000 gallons per day saline water conversion pilot plant—Cornell process	1962-65
Callery Chemical Co	-352	45,000	A feasibility study on saline water conversion using the latent heats of vaporization and fusion of immiscible fluids.	1963-65
Carrier Corp	-318	115,513	Experimental investigation of two direct freeze separation processes	1963-64
Do	-286	135,000	Development of the direct freeze separation process (continuation of 15,000 gallons per day pilot plant).	1963
Do	-213	183,160	A 15,000 gallons per day saline water conversion pilot plant—direct freeze separation process.	1962-63
Dow Chemical Co	-301	31,170	Feasibility study on subsurface disposal of waste brines from saline water conversion plants.	1963
Do	-392	27,683	Feasibility study on utilization of waste brines from distillation plants	1964-65
Do	-444	52,440	Evaluation of the Dow "Mix" Ion Exchange for the pretreatment of sea water	1963-65
Do	-205	12,240	Research on softening of sea water by ion exchange as a saline water pretreatment	1962-63
Dynatech Corp	-505	49,997	Research to enhance the performance of evaporators and condensers by promoting turbulence in the liquid and/or gas region.	1965-66
Do	-382	20,000	Use of electric fields to augment heat transfer rates in liquid-liquid evaporators	1964-65
Do	-331	13,000	An engineering study on the use of electric fields to improve performance of fluid-fluid exchangers in water desalination systems.	1963-64
ERDL (DOD)		10,000	Scale prevention in distillation	1961-62
H. K. Ferguson Co	-374	7,400	Capital and production costs of a vapor compression distillation plant operating at elevated temperatures and using a secondary heat transfer medium.	1964
Do	-280	25,000	Design of a pilot model of a vapor compression distillation system	1963-64
FMC Corp	-436	565,350	Design and construction of a saline water conversion pilot plant using liquid-liquid heat exchange and vapor reheat distillation system.	1964-65
Do	-354	200,000	Development of liquid-liquid heat exchanger and vapor reheat distillation column	1963-64
Do	-234	219,750	Vapor reheat and liquid-liquid heat exchange research	1962

[1] Baldwin-Lima-Hamilton.

CONTRACTS FOR PROCESSES DEVELOPMENT DIVISION—Continued

1962 THROUGH PRESENT—continued

Contractor	Contract No.	Total amount	Title	Fiscal year(s)
Fluor-Sinogmaster and Breyer	-305	$27,500	Research and development on the absorption-multistage flash distillation process	1963
Franklin Institute	-293	120,000	Research on the dropwise condensation characteristics of sulfide and selenide coatings on metallic surfaces.	1963-65
General Electric Co	-434	66,000	Household diffusion still evaluation	1963-65
Do	-314	55,050	Further development of diffusion distillation unit	1963-64
Do	-248	817,825	Design, procurement, and erection of a wiped-film pilot plant	1962-65
Georgia Institute of Technology	-292	37,650	A multiple effect humidity process	1963-64
W. R. Grace & Co	-323	546,751	A pilot plant study of a process for descaling sea water	1963-65
Griscom-Russell Co	-230	63,000	Research and development of scale prevention by sludge recirculation	1962-63
Houston Research Institute	-400	55,400	Laboratory and analytical studies to determine characteristics of 2-phase flow in LTV distillation process.	1964-65
Jacobs Engineering Co	-353	35,400	Investigation of sea water desalination by carbon dioxide hydrate formation	1964-65
Jos. Kaye & Co	-373	10,650	Continuation of a study of the multiple phase ejector desalination systems	1964
Do	-429	40,718	Development of the multiple phase ejector	1964-65
Do	-329	11,075	Study of the multiple-phase ejector desalination systems	1963-64
Koppers Co., Inc	-302	482,190	Management, operation, and maintenance services for the Research and Development Test Station, Wrightsville Beach, N.C.	1963-65
Do	-344	10,814	Assembly, testing, and installation of a unit for measuring the hydrocarbon content in water.	1964
M. W. Kellogg Co	-355	106,807	Desorption of carbon dioxide from sea water	1964-65
Do	-291	28,788	Compilation of saline water data book	1963-64
Do	-357	58,236	Compilation of saline water data book (renewal)	1964-65
Do	-450	55,947	do	1965-66
Koppers Co., Inc	-204	297,000	Development of the hydrate process (laboratory and bench scale research and small pilot equipment development).	1962-63
Do	-365	96,000	Additional laboratory and bench scale work	1963-64
Do	-423	310,000	Initiation of 10,000 gallons per day hydrate pilot plant	1964-65
The Lummus Co	-222	140,475	Architect and engineering work for Research and Development Test Station	1962-63
Midwest Research Institute	-395	65,504	Evaluation of materials in the presence of pretreated sea waters at elevated temperatures	1964-65
Narmco Research & Development	-287	40,080	Research and development on the vapor gap osmotic distillation process	1963-64
Do	-393	38,040	To determine the technical and economic potential of the vapor gap osmotic distillation process.	1964-65
Negev Institute of Arid Zone Research, Israel	-509	37,000	Sea water desalination by high temperature electrodialysis	1965-66
New Mexico State University	-511	50,740	Disposal of waste brine by evaporation	1965-66
Potts-Brown Co	-244	948,000	Construction of Research and Development Test Station, Wrightsville Beach, N.C.	1962-63
Sheppard T. Powell & Associates	-378	63,116	Engineering evaluation of factors affecting quality of water resources available for saline water conversion plants.	1964-65
Bureau of Reclamation		520,000	Electrodialysis membrane and equipment evaluations—field testing	1962-65
Research Triangle Institute	-428	39,250	Analysis, data correlation, and optimization of the vapor reheat liquid-liquid heat exchange process.	1964-65
Do	-340	6,800	Study to determine feasibility of process analysis and optimization of direct contact freezing process.	1964

Do	−379	13,791	Evaluation of direct contact freezing process (continuation)	1964–65
Richardsons-Westgarth, Ltd	−262	126,500	Study of effect on brine transfer conditions of varying the effective chamber geometry in multistage flash sea water evaporators.	1962–65
North American Aviation (Rocketdyne Division)	−366	70,272	Development of a pressure purification method for separating ice-brine mixtures	1964–65
Sanderson & Porter, Inc	−385	7,700	Feasibility study of closed cycle gas turbine flash evaporator combination plant	1964–65
Southern Research Institute	−347	36,438	Development of improved ion-selective membranes	1963–64
Do	−508	38,040	do	1965–66
Stanford Research Institute	−311	35,000	Methodology for comparative engineering analysis of alternative processes for saline water conversion.	1964–64
Do	−412	69,547	Renewal	1964–65
Struthers Scientific & International Corp	−252	1,141,000	15,000 gallons per day pilot plant at Research and Development Test Station, Wrightsville Beach, N.C.	1962–65
Do	−317	1,940,000	East Coast Conversion Plant, Wrightsville Beach, N.C. (200,000 gallons per day freesing process).	1963–65
Sweet Water Development Co	−259	119,000	Development of hydrate forming saline water conversion process (bench scale and small pilot work).	1962–63
Do	−341	1,025,000	20,000 gallons per day pilot plant at Research and Development Test Station	1963–65
John Talbert & Associates	−443	17,200	A. & E. services at Research and Development Test Station	1964
Texas A. & M. Research Foundation	−282	339,953	Development of the liquid-liquid solvent extraction process (included small pilot plant)	1963–65
Tidewater Construction Co	−309	134,340	Sea water intake facility, Research and Development Test Station	1963–64
Westinghouse Electric Co	−273	288,500	Research on thin film vapor compression distillation process	1962–64
J. G. White Engineering Corp	−288	7,000	Preliminary study and evaluation of trailer-mounted self-contained mobile conversion unit	1963
Do	−326	5,000	Investigation of status of compressors and gas turbine drives for mobile conversion units	1963–64
Do	−360	26,400	A conceptual design of a mobile saline water conversion unit	1964

BACKLOG OF RESEARCH PROJECTS

Senator PROXMIRE. Now, I don't want to detain you much longer. I do think all of us are aware of some problems which have developed in the National Institutes of Health because of a rapid increase in research. Some have criticized the research programs there because they have been so free and easy and almost anybody who has come along, it has been said, has been able to sell a research contract to some of the health institutes.

Now, my question is whether or not you have a large proportion of useful saline research projects which have come to your program which you have had to turn down in the past and which now with this additional funding you will be able to go ahead with. Do you have a waiting list or backlog of useful projects that you can proceed with easily without stretching out in areas which might fall off a great deal in productivity?

Mr. HOLUM. I think there is an implied question in your first remark. On the first point we try to be very scrupulous in referring to Health, Education, and Welfare or to our own new Office of Water Resources Research, that you will be hearing when we have completed here this morning, all potentially productive research ideas that come to the Office of Saline Water, but don't fit into our program. By the same token we try to be very scrupulous in not duplicating any of their efforts.

The funding of basic research is approximately $4 million in 1965. The proposed level is $6 million in 1966. The Office of Saline Water has had to turn down during the past year many basic research ideas that had merit. We have had a tremendous step-up of interest on the part of colleges, universities, and research institutions. I think the reasons are obvious. The program of the Office of Saline Water has been on the front pages and received the personal attention of the President and Members of Congress.

As a result our best scientists, our best research institutions, and our best colleges and universities all over the country are interested and we are being flooded by proposals that are meritorious.

SELECTIVITY OF PROPOSALS FOR RESEARCH

Mr. DI LUZIO. In the last 3 months, December, January, and February, we have been receiving proposals at the rate of 540 per year; 135 were received in a 3-month period. In 1964 we received 263 proposals. Only 33 percent of them resulted in contracts or grants. In 1963 we received 211 proposals and only 35 percent resulted in grants.

Senator PROXMIRE. I understand in view of the increase in proposals you intend to maintain your same discrimination. The selection will be about a third.

Mr. DI LUZIO. Yes, we will have to do it on the basis of short-range objective and long-range objective. We do have full cooperation, I know we have good cooperation now, but we are going to improve it, with HEW, NIH, and other agencies of Government which are doing work in the water field because I think one of the unsung contributions that the program will make may be contributions to

basic research to pollution problems and all kinds of other water problems that we have not really looked at from that standpoint.

RESEARCH ON BRACKISH AND SALINE WATERS

Senator PROXMIRE. Do you have any breakdown of the portion of your research that is likely to be spent on brackish waters on the one hand and on actual saline waters on the other? As I understand it, the brackish water problem is not the same as the saline water problem.

Mr. DI LUZIO. No. If we tried to provide information it would have to be in three pieces, things which are specifically related to brackish waters, programs which are specifically obviously related to sea water, and the basic research which may serve either of these two processes in terms of materials, pumping, heat exchangers, deaerating, and so forth. It is pretty hard to really separate these because we don't know the limits of some membrane plants in terms of how they perform on sea water.

Nor do we know how far down the brackish water scale the vacuum freezing process will prove to be effective.

Senator PROXMIRE. In some of these this is working to help in both areas.

Mr. DI LUZIO. Yes.

Senator PROXMIRE. You can't give a rough approximate indication.

Mr. DI LUZIO. We have never broken it that way.

INTERNATIONAL SALINE WATER RESEARCH

Senator PROXMIRE. I won't press for it. This is one final question. This is pretty far out. I am impressed by the fact that we are spending more than any other country for saline conversion research, and I suspect we are spending more than the rest of them combined. I am wondering, because that may be something of great value to every country in the world, if there has been any consideration at all, any efforts of any kind, any proposal to have this done through the United Nations or have the United Nations do part of it and, of course, we would continue our program, but to try to inspire a program in the United Nations. This would be of immense value to all countries. Our proportionate spending there is about 32 to 40 percent of the total, depending on the program. It might be economical for us, and also a way of strengthening the U.N.

Mr. HOLUM. We have contacts and done some amount of work in cooperation with the United Nations. We also work through the International Atomic Energy Agency. We have our two bilateral agreements which have been worked out between the United States and Russia and the United States and Israel. I think another thing that we are doing of temendous significance which has not been mentioned up to this point is holding the first international symposium on desalting here in Washington in October of this year. Scientists from all over the world will be coming to Washington to exchange ideas and exchange technical information. The first international symposium which has ever been held in the field. Our people working on it tell me, with a great deal of confidence, that this will be the best attended international symposium which has ever been held in the United States. So this, in itself, indicates the inter-

national interest and the international import of this program. There will not only be our scientists, but scientists from all over the world will be participating in this program. Whether or not it is practical to fund the research work on an international basis, I don't know.

Senator PROXMIRE. So far as you know your office has not been connected in any way with any kind of proposal to have the United Nations do this to any significant extent.

UNITED NATIONS COORDINATION

Mr. HOLUM. Well, the United Nations is very interested in what we are doing. The United Nations has conducted an international survey of water supply and water quality that is directly related to the desalting program. It attempted to identify the countries who have water supply problems of one kind or another. This has been a useful activity on the part of the United Nations. At least they have given us an idea of the scope of the problem on a worldwide basis.

Mr. DI LUZIO. For many years in the United Nations there has been an Arid Country Committee which has been coordinating the work being done by all the various desert institutes all over the world, including the one in the United States, the one in Arizona, in Israel, and France. They have been publishing meaningful reports on the findings of the arid country institutes. We do have an exchange of information with them. We do get copies of their reports and they get copies of ours. The United Nations is trying to distribute information the same as we are trying to do.

Senator PROXMIRE. Thank you, Mr. Chairman.

REQUEST FOR ADDITIONAL INFORMATION FURNISHED HOUSE INTERIOR COMMITTEE

Chairman HAYDEN. From your remarks I infer that there is some information which has been furnished to the House Interior Committee that might be of interest to this committee. If there is anything of that kind I wish you would furnish it for this record.

Mr. HOLUM. We have appeared before the House Interior Committee.

Chairman HAYDEN. If there is anything in that record which you think ought to be included here—I do not mean the whole record but excerpts which were not given to us.

Mr. HOLUM. Here are copies of my statement. We also have a few copies of the report to the President. The committee members have had them. I attempted to summarize it as best I could in a short period of time.

Chairman HAYDEN. I do not know whether any particular fact appearing in that record has been omitted here which it might be well to include in our record.

Are there any further questions?

AUTHORIZATION LEGISLATION

Senator MUNDT. Yes, I have a few.

Have all the new lines of work that you propose been authorized under present law or do we have to wait for some new authorizing legislation?

Mr. HOLUM. Senator Mundt, you have touched on an interesting problem. We have the monetary authorization to cover all the appropriations that we are asking for for this year. However, the $29 million together with the $3.9 million supplemental will bring us close to the authorized $75 million ceiling in the 1961 act.

So we must push ahead and we will be, of course, requesting an extension of the authorization program both in point of time and in point of dollars. The present authorization just runs through fiscal year 1967. It covers $75 million.

MILLER, S. DAK., PROJECT

Senator MUNDT. What kind of work is this that you are doing at Miller? I notice in this justification you talk about experience of water users in Webster and Miller.

Mr. HOLUM. We are using Miller as the check community. Miller and Webster, S. Dak., are very much the same size; they have very much the same quality of water. What we are doing is trying to measure the benefit to the community of Webster by having their water improved against the situation in Miller where they don't have the benefit of the desalting plant. It is a checkpoint.

CONTRACTS AND GRANTS

Senator MUNDT. Can you provide for the record a tabulation of the more than 100 contracts and grants listed on page 4?

Mr. DI LUZIO. Yes, we will.

(The tabulation referred to follows:)

Status of Open Contracts as of Jan. 1, 1965

Contract No.	Contract date	Name of contractor	Amount of contract	Expiration date of contract
164	Aug. 19, 1958	University of Michigan	$171,625	Feb. 1, 1963
174	Apr. 1, 1959	Texas A. & M. Research Foundation	55,000	Aug. 21, 1961
214	Aug. 31, 1960	Blaw-Knox Co	1,010,725	May 31, 1964
247	Mar. 26, 1962	University of Arizona	415,080	Apr. 1, 1965
248	Apr. 3, 1962	General Electric Co	817,825	Mar. 31, 1965
250	Apr. 11, 1962	General Atomic Division	655,003	Apr. 16, 1965
252	Apr. 1, 1962	Struthers Scientific	1,200,988	June 30, 1965
260	June 1, 1962	Yale University	18,130	May 31, 1965
262	May 28, 1962	Richardsons, Westgarth	174,000	Sept. 17, 1964
264	July 1, 1962	University of California	39,010	June 30, 1965
277	do	University of Wisconsin	52,300	Feb. 8, 1966
279	Aug. 13, 1962	Massachusetts Institute of Technology	126,497	Aug. 12, 1966
282	Aug. 15, 1962	Texas A. & M. Research Foundation	339,953	Dec. 31, 1965
284	Aug. 1, 1962	Battelle Memorial Institute	149,670	June 30, 1965
285	Sept. 1, 1962	Northern Illinois University	21,413	Sept. 1, 1965
290	Oct. 11, 1962	American Machine & Foundry	423,840	Jan. 31, 1965
292	Sept. 28, 1962	Georgia Tech Research Foundation	37,650	Sept. 30, 1963
293	Oct. 11, 1962	Franklin Institute	120,000	July 1, 1965
294	Oct. 9, 1962	Monsanto Research Corp	123,815	Jan. 21, 1965
296	Oct. 11, 1962	Aerojet-General Corp	795,736	June 30, 1965
304	Sept. 1, 1963	Baldwin-Lima-Hamilton Co	192,393	Oct. 15, 1964
311	Dec. 20, 1962	Stanford Research Institute	35,000	Dec. 30, 1963
312	Dec. 11, 1962	A. D. Little Research Institute	30,000	Dec. 11, 1964
315	Jan. 8, 1963	Massachusetts Institute of Technology	72,400	Jan. 8, 1965
316	do	do	76,100	Do.
317	Jan. 20, 1963	Struthers Scientific Corp	1,622,000	June 30, 1965
318	Jan. 24, 1963	Carrier Corp	115,513	Do.
319	Mar. 11, 1963	Brooklyn Polytechnic Institute	94,850	Mar. 11, 1965
325	June 1, 1963	Loyola University	54,047	May 31, 1965
327	May 2, 1963	Battelle Memorial Institute	103,955	Apr. 22, 1965
332	May 24, 1963	Rocketdyne Division	104,120	June 29, 1965
333	do	do	96,000	June 17, 1965
334	do	do	110,300	Do.
338	Aug. 10, 1963	Aerojet-General Corp	320,743	July 1, 1965
339	Aug. 19, 1963	Aqua-Chem, Inc	136,000	Jan. 8, 1965
341	Apr. 27, 1963	Sweet Water Development Co	1,025,000	May 31, 1965
342	Aug. 21, 1963	Yeshiva University	55,951	June 30, 1965
343	do	Syracuse University Research Institute	51,000	Do.
346	Oct. 3, 1963	Temple University	32,957	Oct. 31, 1965
347	Sept. 20, 1963	Southern Research Institute	36,438	July 30, 1964
349	Oct. 14, 1964	University of California	42,960	Nov. 1, 1965
350	Oct. 17, 1963	W. C. Schroeder	18,300	Apr. 17, 1964
351	do	Lehigh University	23,800	Oct. 31, 1965
352	Oct. 25, 1963	Callery Chemical Co	45,000	Aug. 31, 1964
353	do	Jacobs Engineering Co	35,400	Jan. 25, 1965
354	Mar. 16, 1963	FMC Corp	100,000	Dec. 30, 1963
355	Dec. 31, 1963	M. W. Kellogg Co	106,807	Dec. 31, 1964
357	Nov. 1, 1963	do	142,971	Nov. 1, 1964
358	do.	University of California	69,009	Nov. 30, 1965
359	Nov. 8, 1963	Mellon Institute	173,860	Nov. 8, 1965
361	Nov. 19, 1963	University of Oklahoma Research Institute	83,000	Nov. 30, 1965
363	Dec. 2, 1963	University of California	87,431	Dec. 31, 1965
364	Dec. 10, 1963	Washington University	51,876	Do.
365	Dec. 17, 1963	Koppers Co	96,000	Apr. 30, 1964
366	Dec. 19, 1963	Rocketdyne Division	70,272	Mar. 31, 1965
368	Dec. 23, 1963	Astropower, Inc	48,166	Dec. 23, 1964
369	Sept. 1, 1963	W. R. Grace Co	99,400	Sept. 1, 1964
371	Jan. 9, 1964	Oklahoma Baptist University	11,000	Sept. 30, 1965
372	Jan. 14, 1964	A. D. Little, Inc	41,157	Jan. 14, 1965
375	Jan. 17, 1964	Rochester Institute of Technology	111,000	Feb. 28, 1966
376	do.	Bolt, Beranek & Newman	55,808	Jan. 17, 1965
377	Feb. 5, 1964	Stevens Institute of Technology	29,000	May 31, 1966
378	Feb. 6, 1964	Sheppard T. Powell & Associates	63,116	Sept. 15, 1964
379	do.	Research Triangle Institute	13,791	Sept. 1, 1964
382	Feb. 11, 1964	Dynatech Corp	20,000	Sept. 30, 1964
383	Feb. 10, 1964	Battelle Memorial Institute	200,690	Feb. 10, 1966
384	July 15, 1963	Cornell University	37,128	Feb. 28, 1966
385	Feb. 20, 1964	Sanderson & Porter, Inc	7,700	Aug. 31, 1964
386	Feb. 25, 1964	Stanford University	54,060	June 30, 1966
387	Mar. 2, 1964	Melpar, Inc	83,445	Mar. 2, 1966
388	Mar. 3, 1964	Case Institute of Technology	65,330	Feb. 28, 1967
389	do	Boston College	38,644	June 30, 1966
392	Mar. 18, 1964	Dow Chemical Co	27,683	Mar. 18, 1965
393	do	Narmco Research & Development	38,040	Jan. 18, 1965
394	do	University of Pittsburgh	176,160	June 29, 1967
395	Feb. 18, 1964	Midwest Research Institute	106,321	Oct. 18, 1965
396	Mar. 20, 1964	California State College of Los Angeles	19,646	Mar. 31, 1966
398	Mar. 23, 1964	Cornell University	66,960	Feb. 28, 1967
399	Mar. 31, 1964	Baldwin-Lima-Hamilton	24,167	Aug. 31, 1964
401	Aug. 1, 1964	Syracuse University Research Institute	40,700	July 1, 1966
402	July 1, 1964	do	58,600	June 30, 1966
403	Mar. 26, 1964	Mellon Institute	90,986	Mar. 26, 1966

STATUS OF OPEN CONTRACTS AS OF JAN. 1, 1965—Continued

Contract No.	Contract date	Name of contractor	Amount of contract	Expiration date of contract
404	Mar. 31, 1964	Massachusetts Institute of Technology	$36,296	Dec. 31, 1966
405	Apr. 2, 1964	University of Maryland	133,078	June 30, 1967
406	do	University of Waterloo	30,800	May 31, 1966
407	do	Westinghouse Electric Co	107,637	Apr. 1, 1966
408	Feb. 1, 1964	Pennsylvania State University	102,496	Jan. 31, 1967
409	Apr. 6, 1964	Southern Research Institute	92,575	Dec. 5, 1964
411	Apr. 14, 1964	Martin Marietta Corp	46,191	Apr. 14, 1966
412	Apr. 29, 1964	Stanford Research Institute	69,547	Apr. 29, 1965
413	May 8, 1964	University of Texas	27,360	May 14, 1966
414	June 9, 1964	Fluor Corp., Ltd	145,685	May 20, 1966
416	May 18, 1964	Magna Corp	33,311	May 18, 1965
419	June 1, 1964	Sigmatron, Inc	64,000	Oct. 1, 1965
420	June 10, 1964	Kaman Instruments	59,689	Oct. 10, 1965
421	May 1, 1965	University of Michigan	17,800	Apr. 30, 1965
422	Sept. 1, 1965	Rensselaer Polytechnic Institute	47,820	Aug. 31, 1966
423	May 1, 1964	Koppers Co., Inc	685,000	Dec. 31, 1965
424	June 18, 1964	Unified Science Associates	44,028	June 18, 1965
425	do	Tyco Laboratories, Inc	98,986	June 18, 1966
426	June 22, 1964	General Atomic	99,820	June 22, 1965
427	Sept. 1, 1964	University of Pittsburgh	55,454	Aug. 31, 1966
428	June 22, 1964	Research Triangle Institute	39,250	June 30, 1965
429	do	Joseph Kaye & Co., Inc	40,718	June 22, 1965
430	do	Illinois Institute of Technology	50,039	Do.
431	June 15, 1964	University of Delaware	38,736	June 14, 1967
432	June 29, 1964	Negev Institute	15,566	Dec. 29, 1965
433	do	Marquardt Corp	47,260	June 29, 1965
434	May 13, 1964	General Electric Co	66,000	Sept. 13, 1965
435	June 30, 1964	Aerojet-General Corp	59,724	June 30, 1965
436	June 29, 1964	FMC Corp	565,350	June 29, 1965
438	June 15, 1964	Princeton University	16,359	June 14, 1966
439	July 15, 1964	University of California	44,560	June 30, 1966
440	July 16, 1964	Philco Research Corp	73,028	July 16, 1965
442	July 27, 1964	Service agreement, Department of State	34,170	July 27, 1966
443	Aug. 5, 1964	John Talbert Associates, Inc	17,200	Jan. 5, 1965
444	do	Dow Chemical Co	40,440	Feb. 5, 1965
446	July 29, 1964	Bureau of Reclamation	10,000	June 30, 1965
447	July 1, 1964	do	2,500	Do.
449	Aug. 18, 1964	Metropolitan Water District of Southern California	300,000	Nov. 18, 1965
450	Aug. 27, 1964	M. W. Kellogg Co	55,947	Nov. 1, 1965
452	Aug. 17, 1964	Bureau of Reclamation	135,000	June 30, 1965
454	Aug. 21, 1964	do	45,000	Dec. 31, 1965
456	Sept. 1, 1964	Clark University	58,440	Nov. 30, 1967
457	Aug. 31, 1964	North Star Research & Development Institute	48,942	Aug. 31, 1965
458	Sept. 2, 1964	Rensselaer Polytechnic Institute	82,020	Aug. 31, 1967
459	Sept. 3, 1964	Hope College	28,000	Sept. 30, 1967
461	Sept. 24, 1964	Institute of Marine Science	97,500	Aug. 31, 1967
462	Sept. 1, 1964	University of Pennsylvania	48,021	Aug. 31, 1966
463	Sept. 15, 1964	South Dakota College	9,000	Mar. 15, 1966
464	Oct. 9, 1964	Southern Research Institute	73,154	Apr. 9, 1966
465	Oct. 14, 1964	Monsanto Research Corp	59,883	Oct. 14, 1965
466	Oct. 28, 1964	do	66,493	Oct. 28, 1965
501	Apr. 1, 1964	Cabrillo National Monument	1,000	June 30, 1965
502	Apr. 26, 1964	General Services Administration	30,000	Do.
504	Oct. 1, 1964	Cornell University	104,800	Sept. 30, 1967
505	Nov. 19, 1964	Dynatech Corp	49,997	Oct. 19, 1965
508	Dec. 10, 1964	Southern Research Institute	38,040	Dec. 10, 1965
509	Dec. 16, 1964	Negev Institute of Arid Zone Research	37,000	Dec. 16, 1965
510	Jan. 12, 1965	Baldwin-Lima-Hamilton	152,852	Jan. 12, 1966
511	Dec. 16, 1964	New Mexico State University	50,740	Mar. 16, 1966
512	Dec. 1, 1964	University of Houston	32,306	Nov. 30, 1966
513	Dec. 18, 1964	Baldwin-Lima-Hamilton	50,000	June 18, 1965
515	do	Badger Co., Inc	50,000	Do.
516	do	Ralph M. Parsons Co	50,000	Do.
517	do	H. K. Ferguson Co., Inc	50,000	Do.
518	do	Foster Wheeler Corp	50,000	Do.
519	do	Dow Chemical Co	50,000	Do.
520	July 1, 1964	National Bureau of Standards	87,000	June 30, 1967
218	Apr. 3, 1961	Stearns Rodger Manufacturing Co	891,476	Sept. 2, 1965
225	Oct. 2, 1961	Mason-Rust Co	384,610	June 30, 1965
322	Apr. 17, 1962	American Hydrotherm Corp	517,240	Do.
(1)	Oct. 20, 1959	Dow Chemical Co	189,000	Do.
(1)	July 1, 1964	Northwestern Public Service	23,500	Do.
(1)	do	Sigaty-Ninke Oil Co	1,500	Do.
(1)	do	Southwestern Public Service	32,000	Do.
(1)	Mar. 14, 1962	OSW-AEC	2,397,000	Nov. 30, 1965
(1)	May 14, 1964	Department of Agriculture	70,000	Mar. 31, 1965
(1)	Apr. 27, 1964	Bureau of Standards	25,000	Feb. 28, 1965
(1)	July 1, 1964	Bureau of Reclamation	130,000	July 1, 1965
		Total	23,699,345	

[1] Agreement.

ENLARGEMENT OF PLANTS

Senator MUNDT. Is there any plan to enlarge any of the plants which you already have? You talked about making changes because of technological know-how which has come up. Do you plan to expand them from the standpoint of what they can do?

Mr. DI LUZIO. No. I think the work done on them will be merely to improve the technology and not to increase the productivity of the plant.

COST OF DESALINATED WATER

Senator MUNDT. Every once in a while I notice in the press a cost figure, so much per thousand gallons. Does that include the cost of the plant or does that include just the operating cost?

Mr. DI LUZIO. The figures that are quoted—fortunately I happen to have 2 cards which provides an outline of how the cost shall be computed. This is a breakdown of how the costs are determined. They are standardized. These standardized procedures will be supplied for the record.

(The information referred to follows:)

STANDARDIZED PROCEDURE FOR ESTIMATING COST OF CONVERTED WATER

Capital costs: [1]
- Standard engineering equipment and instruments.
- Erection and assembly of plant.
- Product water storage—10 days.
- Service facilities and buildings.
- Interest during construction—4 percent.

Operating costs:
- Fuel at 25 cents per million B.t.u.
- Electric power—5 mills per kw.-hr. above 100,000 kw. demand.
  —7 mills per kw.-hr. below 100,000 kw. demand.
- Steam—55 cents per million B.t.u.
- Raw materials and chemicals.
- Supplies and maintenance materials.
- Operating and maintenance labor.
- Taxes and insurance.
- General and administrative overhead.

Senator MUNDT. In short it includes everything?

Mr. DI LUZIO. Yes; process only. Not distribution of the water.

Mr. HOLUM. Are you asking about statements that the Department of Interior makes?

Senator MUNDT. I have seen a price of so much per thousand gallons.

Mr. HOLUM. Those statements are being made by manufacturers or engineering firms.

Senator MUNDT. Yes. I was thinking of the Department's statement. We had some figures the other day talking about water research cost per gallon. I believe it said it should go down to $1.40 per thousand gallons. Does that include the whole installation, the cost of everything?

Mr. DI LUZIO. Yes, but the public cost which is an entirely different area, these are the costs which we hope to develop at great length because water costs are very simple in some parts of the country.

[1] Amortized at 20-year plant life and 4-percent interest.

We would like to develop the information and use it in comparing the cost of water.

Cost of Desalination of Brackish Water

Senator Mundt. Do you have a figure in mind as to what is an optimum or a satisfactory cost per thousand gallons of water for desalination of brackish water.

Mr. Holum. We don't have a goal, Senator Mundt. I think comparison of conventional water costs, if I remember correctly there are 325,850 gallons per-acre foot. When talking about agricultural water, we generally talk of water of $4 to $5 to $10 an acre-foot—most communities consider $30 and $40 an acre-foot a high cost for water for municipal or industrial purposes. These figures are substantially below anything that we have been able to demonstrate at the present time.

Lowest Cost Achieved to Date

Senator Mundt. What is the lowest you have been able to demonstrate? You said Webster was a jewel example. That is pleasing.

Mr. Holum. We like to be very careful is using these figures. One thing that I can say before giving you an answer. At all the demonstration plants we have built, we have constructed demonstration and test equipment. They are not production plants, they are small and we don't begin to realize the full potential of the process because of their small size and also because the additional number of people and operators we have to have to operate the facility. We did talk—and this is dangerous because there are so many ways to compute water cost—we did talk about the Point Loma producing water at a dollar or $1.05 a thousand gallons. Freeport is getting in that range, too, on the basis of present technology. These are figures that we use with a great deal of caution.

Mr. Di Luzio. The brackish water cost would be less than that.

Water Sales

Senator Mundt. At one time I believe you reported that you were selling water to San Diego.

Mr. Di Luzio. We are selling water to Freeport, too, on the basis of a negotiated price.

Senator Mundt. That is all, Mr. Chairman.

Chairman Hayden. Are there any further questions? If not, we thank you.

Mr. Holum. We certainly appreciate this hearing, Mr. Chairman, and consideration this committee has always given our program.

WATER RESOURCES RESEARCH

STATEMENTS OF ROLAND R. RENNE, DIRECTOR; EUGENE D. EATON, ASSOCIATE DIRECTOR; F. WILLIAM KOOP, EXECUTIVE OFFICER; AND HARVEY B. MACK, ASSISTANT DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR

1966 BUDGET REQUEST

Chairman HAYDEN. During the last Congress, $1,465,000 was appropriated to the Office of Water Resources Research in order that the new program to be administered by that office could be initiated, and a supplemental estimate has been received in the amount of $2,825,000. For fiscal year 1966, the budget estimate is $5,890,000, which is $4,425,000 greater than has actually been appropriated. The justification will be placed in the record.

(The justification referred to follows:)

JUSTIFICATION

Supplemental appropriation, 1965	$1,465,000

SUMMARY OF INCREASES AND DECREASES, 1966

Increase in assistance to States for institutes	3,413,000
Increase in matching grants to institutes	740,000
Increase in administration, to provide for complementing the staff and operation on a full-year basis	272,000
Net increases, 1966	4,425,000
Budget estimate, 1966	5,890,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay-cost supplemental	Transfers	Amount available
1. Assistance to States for institutes		$1,050,000			$1,050,000
2. Matching grants to institutes		260,000			260,000
3. Administration		155,000			155,000
Total		1,465,000			1,465,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
1. Assistance to States for institutes		$1,050,000	$4,463,000	+$3,413,000
2. Matching grants to institutes		260,000	1,000,000	+740,000
3. Administration		155,000	427,000	+272,000
Total		1,465,000	5,890,000	+4,425,000

JUSTIFICATION

GENERAL STATEMENT

The Office of Water Resources Research is requesting a total of $5,890,000 to carry out provisions of the Water Resources Research Act of 1964 (Public Law 88-379, approved July 17, 1964). Funds in the amount of $1,465,000 were made available in the Supplemental Appropriation Act 1965 to initiate this new program.

The Water Resources Research Act authorizes financial support for the establishment and maintenance of one water resources research center in each State at the State college or university designate and pursuant to provisions of the act; for water research at other colleges, universities, and centers of competence; and for promotion of a more adequate national program of water research. The act further provides that the Secretary of the Interior is responsible for the proper administration thereof. Pursuant thereto the Secretary has established within the Department, and reporting directly to him, an Office of Water Resources Research to develop appropriate rules and regulations, to guide program operations, to administer the various water research funding arrangements made pursuant to the act, and to provide essential planning and coordination in the area of water resources research.

The permanent positions proposed for fiscal year 1966 includes a director, associate director, five scientists/engineers, six supporting program positions, and seven administrative, statistics, and grants administration positions. This staff will (*a*) review applications to assure that the applicants are eligible to receive financial support consistent with the requirements of the act, that the activities for which the grants are sought have merit, that the applicants are competent to accomplish the programs or projects proposed, that the proposed expenditures have reasonable and proper relationship to the probable value of accomplishments, and that the activities are planned and will be carried on with due regard for avoidance of duplication of other research and undue displacement of water scientists and engineers elsewhere engaged in water research, and for like substantive factors; (*b*) prepare and process grant and contract agreements, and monitor compliance with such agreements; (*c*) establish and keep current records and statistics relative to the program; (*d*) develop advice to water resources research centers and others relative to the research areas most important for additional attention and emphasis, as required by the act; (*e*) establish and maintain cooperation among centers and between the centers and Federal and other organizations concerned with water resources, as required by the act; (*f*) evaluate the progress of research carried on under the act; (*g*) prepare reports and referrals for the Secretary to make to the President and the Congress; and (*h*) related duties. The OWRR staff is responsible for the propriety of payments and for the establishment and administration of necessary safeguards to insure that designated institutes and other research organizations have the capability for effective performance and are so performing. It will furnish such advice and assistance as will best promote the purposes of the act, participate in coordinating research initiated under the act by the institutes, and assist in the establishment and maintenance of cooperation by and between the institutes and between them and other research organizations, the Department of the Interior, and other Federal agencies

During fiscal year 1966 it is expected that 51 submittals for continuation of the annual water research institute allotments will be evaluated and acted upon by the Office of Water Resources Research and consistent with the Director's authority to approve financial support to qualified State institutes under the act. In addition to the annual programs of the institutes, it is expected that 200 or more proposals relating to specific research projects will be received from institutes, for matching fund grants under section 101 of the act, and/or from other universities, research organizations, individuals, etc., for grants, contracts, matching fund grants, or other arrangements, under section 200 of the act.

Section 100—Fiscal year 1965, $1,050,000; fiscal year 1966, $4,463,000; increase, $3,413,000

An increase of $3,413,000, as provided by the act, is required to provide financial support to State water resources research institutes pursuant to section 100.

Section 100 authorizes allotments in the amount of $87,500 for second-year program participation by 1 State water resources research institute in each of 50 States and Puerto Rico. The requested amount of $4,463,000 represents the amount required for such second-year program participation by 51 institutes.

Section 101—Fiscal year 1965, $260,000; fiscal year 1966, $1 million; increase, $740,000

Pursuant to section 101 of the act, an increase of $740,000 is required to provide financial support, in the form of matching fund grants, to State water resources research institutes for the purpose of undertaking specific water research projects.

During recent years progress in the area of water research has been grossly inadequate to satisfy the demands and requirements of a fast-expanding population and economy for adequate supplies of water for all purposes. The acute water supply problems that exist now, and which will intensify in the immediate future years unless aggressive corrective action is taken, is clearly recognized by the public, the States, and the Congress. In view of this situation, and because the deliberations leading to the enactment of Public Law 88–379 took place over a considerable period of time, and matching grants have been authorized since July 1964, the States, through their university centers, have developed program plans and sources of financing to match Federal funds authorized by this section of the act. It is expected that requests will be received in excess of the $1 million so it is urgent that the amount requested be appropriated to meet the need and avoid further loss of time in moving ahead in this important research field.

Administration—Fiscal year 1965, $155,000; fiscal year 1966, $427,000; increase' $272,000.

An increase of $272,000 is required for adding staffing and various administrative and program support services essential for proper administration of the fiscal year 1966 program.

Funds appropriated in fiscal year 1965 for personnel compensation and various administrative and progam support services were related to a limited, first-year, program. The estimate for administration of the fiscal year 1966 program is based on experience with the many ramifications and indicated workload of the program. Funds for additional equipment purchases for the new Office in fiscal year 1966 will be needed and, due to the nationwide character of the program and the necessity for providing coordination as contemplated by the act, funds are required for travel, communication, and documentation and reproduction. Onsite visits and examination will have to be made to applicant establishments for consultation and inspection to ascertain whether they are capable of fulfilling the requirements of the act and accomplishing the research as set forth in their proposals, and to achieve appropriate coordination.

ITEMIZATION OF ESTIMATE

Salaries and expenses

		Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing: Total obligations (new obligational authority)			$1,465,000	$5,890,000	+$4,425,000
Object classification:					
11	Personnel compensation		102,000	245,000	+143,000
12	Personnel benefits		7,000	15,000	+8,000
21	Travel and transportation of persons		13,000	40,000	+27,000
22	Transportation of things		2,000	8,000	+6,000
23	Rent, communications, and utilities		3,000	24,000	+21,000
24	Printing and reproduction		5,000	25,000	+20,000
25.1	Other services		2,000	4,000	+2,000
25.2	Services of other agencies		7,000	25,000	+18,000
26	Supplies and materials		2,000	5,000	+3,000
31	Equipment		12,000	36,000	+24,000
41	Grants, subsidies, and contributions		1,310,000	5,463,000	+4,153,000
	Total		1,465,000	5,890,000	+4,425,000

STATEMENT OF DIRECTOR RENNE

Chairman HAYDEN. Since this is a new program, I believe you should explain just how it will be operated. Your written statement may be filed for the record.

Mr. RENNE. Yes, Mr. Chairman. I have with me Mr. E. D. Eaton, the associate director of our Office and our executive officer, Mr. F. W. Koop, who has figures on our budget breakdown.

(The statement referred to follows:)

WATER RESOURCES RESEARCH PROGRAM (PUBLIC LAW 88–379)

Mr. Chairman and members of the committee, it is a pleasure to have this opportunity to appear before you and present this budget request which provides for continuation of the program to assist State water resources centers and to promote a more adequate national program of water research as authorized by the Water Resources Research Act of 1964 (Public Law 88–379).

The Water Resources Research Act recognizes the urgent need in every State and region of the United States for increased knowledge and competence in dealing with water resources problems. Intermittent and permanent water shortages exist or threaten many communities and many areas. Water supply deficiencies both of quantity and of quality are serious threats to the economic development and well-being of people. They constitute a present or potential limit on community growth, and agricultural, industrial, and recreational development. For approximately one-fifth of the U.S. authoritative reports estimate that water supply will limit economic and population growth by 1980 unless new and improved methods are developed to increase the usefulness of available water resources. By the year 2000, comparable conditions of water supply inadequacies can be expected to be far more extensive and far more critical unless there are new and improved methods for water conservation and utilization.

This request for $5,890,000 is for continuation, in fiscal year 1966, of the program initiated in fiscal year 1965 with funds provided by the 1965 Supplemental Appropriation Act approved October 7, 1964. Water resources research centers in 14 States have been selected to receive the fiscal year 1965 funds available for allotment purposes. Forty-eight State centers have submitted requests for fiscal year 1965 allotments, and two other States have indicated that their requests are in preparation. In fiscal year 1966 centers in all 50 States and in Puerto Rico will have programs and will request allotments. It is evident also that the centers are prepared to make effective use of matching grant funds authorized by the act.

Therefore, this request provides for allotments to 51 water resources research centers in the amount of $87,500 per State pursuant to section 100(a) of the act, and for $1 million for specific research projects pursuant to section 101(a) of the act. The estimate includes $427,000 for program development, management, and administration in fiscal year 1966, including funds for a total of 20 staff positions, consultant salaries, preparation and printing of water research catalogs, consultants' travel, staff travel to various research centers, and equipment, supplies, materials, communications, and other expenses associated with operation of the Office.

MAJOR FUNCTIONS OF OFFICE

The Office of Water Resources Research, to which the Secretary has assigned responsibility for the program, will continue to have a small staff to perform the following major functions: (1) manage the program of grants on the basis of the merit of the proposals and the need for the knowledge expected to be produced without duplication of other State or Federal research, or displacement of scientists and engineers; (2) provide coordination of the research at the research centers of the various States and with other State, Federal, and nongovernmental research; and administer the program to assure effective utilization of appropriated funds and qualified manpower, and assure proper accountability of the grants.

Performance of these functions requires staff that is highly knowledgeable about water problems and existing research, and that has mature judgment in conferring and counseling with the research centers and others participating in the program.

A principal purpose of the act is to stimulate and supplement present programs for research on water resources problems, and to encourage the training of scientists and engineers to work in this field. Pursuant to the provisions of the act, this is being accomplished through financial assistance in the form of allotments to State water resources research centers and through matching grants to assist in meeting the expenses of specific water resources research by these centers.

Water Scientists and Engineers

Water resources research and the training of water scientists and engineers go hand in hand. Research of the State centers is under the leadership of university faculty members concerned with the various scientific and engineering subjects related to water resources problems. In conjunction with such research, graduate students and others seeking to secure advanced training as water scientists and engineers are engaged as assistants in the performance of such research. In this manner, the program provides for the development of new knowledge needed to deal with water problems and for the training of additional highly qualified people to work on these problems.

There is wide agreement that a critical shortage of qualified water scientists and engineers is a major element in the present critical situation. This conclusion is emphasized in special reports of the National Academy of Sciences, National Research Council, the Federal Council for Science and Technology, and in reports of professional groups such as the American Society of Civil Engineers, and others. Evidence of the increasing need for qualified water scientists and engineers is brought out almost daily in newspaper reports of new State and Federal activities to relieve conditions of water shortages, drought, floods, and water-quality deterioration. Particularly needed are qualified water resources specialists for State and local governments and others responsible for dealing with local, State, and regional problems.

It is particularly to aid in meeting this shortage of highly qualified workers that the Water Resources Research Act emphasizes the training of water scientists and engineers through their participation in the programs of water resources research centers at the State universities and land-grant colleges.

State Universities and Land-Grant Colleges Programs

Through their own councils, committees, and research center administrators, the State universities and land-grant colleges have been preparing research and training programs as authorized by Public Law 88–379. As examples, the water resources center at the Ohio State University, in addition to conducting research on the acid mine water problems of the State, including effects on various forms of animal life, and in turn, the manner in which certain iron- and sulfur-oxidizing bacteria can help reclaim polluted waters, plans to conduct research on ground water contamination due to saline water disposal in the currently producing Morrow County oilfields. The study will attempt to appraise future water problems that may develop from the present system of disposing of salt water coming from oil wells in this area.

The water resources research center at Purdue University proposed six projects for funding by the initial $75,000 allotment and listed many others that it would like to undertake if funds were available. The six projects which would have been initiated upon receipt of the Federal allotment, had it been possible to make such an allotment, dealt with development of more reliable and practical methods of estimating runoff from small watersheds in Indiana; the hydraulics of the flow of water in meandering rivers with adjoining flood plains; development of information on water resources needed to predict areas which could (or could not) support greater industrial and urban growth; water quality (two projects); and the effects of soil crusting on the infiltration of water. Other Indiana proposals included studies designed to develop methods of forecasting low flows of streams, studies of water quality of lakes and streams as affected by runoff from fertilized land, the biology and management of Indiana farm ponds, ecology of strip-mined areas, etc.

Texas Water Resources Institute

One of the interesting project proposals of the Texas Water Resources Institute is concerned with determining the future water requirements of agriculture in Texas through the year 2020. Another one listed for attention when funds become available would deal with the economics of regional water reclamation plants and develop factors to relate benefits of improved water quality to costs so appropriate costs can be allocated to all groups involved. Research of this type is important because water supplies and water-quality control procedures are a prime consideration of new industries moving into an area.

An analysis of the projects proposed for Federal financing by the 14 institutes scheduled to receive allotments initially under the water resources research pro-

gram showed that studies would be conducted in all of the broad research categories developed by the Committee on Water Resources Research of the Federal Council for Science and Technology. A majority of the studies, however, would deal with various facets of the water cycle, development and control, qualitative aspects of water, and water and land management. All 48 of the requests received to date indicate that students will participate actively in all aspects of research to be carried out under this program, thus implementing the training provisions of the act.

Evapotranspiration

An example of applications received for matching grant funds to assist in financing cooperative studies is one on evapotranspiration from the Clemson University Water Resources Research Institute of South Carolina. One of the objectives of this study would be to develop means of reducing transpiration from plants by use of some suppressant such as a chemical. Of the 48 inches of mean annual precipitation in South Carolina, approximately 67 percent is lost through evaporation and transpiration. While it is realized that widespread shortages of water do not as yet exist in South Carolina, predictions are that in the future at least localized shortages will occur, probably followed by more generalized shortages due to increased industrialization and urbanization. Also, techniques developed in one study may be applicable elsewhere.

Catalog of Water Resources Research

In fiscal year 1966 the Office of Water Resources Research will continue to emphasize the research coordination responsibilities assigned to the Secretary of the Interior by section 104 of the Water Resources Research Act of 1964. As a part of the program to facilitate such coordination, the Office is now publishing, with the cooperative assistance of the Science Information Exchange of the Smithsonian Institution, the first edition of a catalog of proposed and ongoing federally supported water resources research. This catalog will fulfill a highly important need for a document that can be used to disseminate current water resources research information to all persons engaged or preparing to engage in such research. A future edition of the catalog will include water resources research projects which are not federally supported, to the extent that organizations performing such research cooperate in the program of the Science Information Exchange. A request has been received for a third publication listing water resources research in other countries which research may be of particular interest and possible usefulness for the United States.

Although the program is new, there is widespread interest in this water research and training effort. The Office of Water Resources Research receives daily a large number of inquiries and communications from throughout the country.

Allotment of Funds and Appropriation

Mr. Renne. As you well know, last October a supplemental appropriation provided funds for allotments to 14 of the States, totaling $1,050,000. The appropriation also provided $260,000 for section 101 matching grants to the research centers established in the States, and $155,000 for administration. In the Senate committee report on that supplemental appropriation, the committee said it would expect the Secretary of the Interior at the opening of Congress to "request funds necessary to meet total obligations under the act." The authorization under the act is to provide for a $75,000 fiscal year 1965 allotment to each of the research centers in the 50 States and Puerto Rico. The authorization for the second year, which would be fiscal year 1966, is $87,500. The request, Mr. Chairman, which you have before you for the fiscal year 1966 includes the item of $4,463,000 for 51 research centers in each of the 50 States and Puerto Rico at the authorized amount provided by the act of $87,500. That is the largest item in the fiscal year 1966 request.

For section 101 matching grants, $1 million is requested and that is half of what the act authorizes for 1966. The act calls for $2 million.

The increase in administrative costs, of course, is sizable over the 1965 supplemental because we did not get started until October and we had a short year plus the fact that there were allotments to only 14 State research centers to be funded under the initial appropriation. We will not have the full staff for but a few months of this fiscal year. I was not sworn in until the latter part of December. These factors largely account for the difference in the current amount for administration and the increase requested for fiscal year 1966.

Chairman HAYDEN. How many of these research centers have actually been funded?

Mr. RENNE. Fourteen.

Chairman HAYDEN. Fourteen?

Mr. RENNE. That is right.

UTILIZATION OF SECTION 101(a) FUNDS

Chairman HAYDEN. Will you inform the committee whether the $2 million authorized by section 101(a), if appropriated at this time, could be utilized effectively?

Mr. RENNE. Yes, sir; we consider that it would be utilized effectively. We put out a letter on January 28 and we already have requests from four States that total approximately $260,000, which is as much as we have available for all the States this year.

Senator MUNDT. Mr. Chairman, while we are on that point could I ask a question?

Chairman HAYDEN. Senator Mundt.

METHOD OF GRANT APPLICATIONS

Senator MUNDT. I think it would be helpful if you would explain a little more in detail than you do in your statement as to how an institution or a State applies for a grant. I understand each State will get a grant. To give you a typical illustration, the Legislature of South Dakota is in session. It will be in session for another 3 weeks. Is there something that the legislature should be doing? If I knew all the details I could give them better guidance.

I had a phone call from the Governor. I was unable to answer him.

Mr. RENNE. Rules and regulations have been prepared and distributed to carry out the purposes of the act. These provide specific details as to the means by which the institutes or centers are set up and participate. This is set forth in the act itself to be at the land-grant universities unless where there are more than one of such institutions in a State—and there are 16 States with more than one—in which case the Governor of the State shall designate which of the two.

The 14 initial allotments have all been made to land-grant universities. In a State where an institution other than a land grant is desired to be the location of the center, the legislature may act, and by its action specifically designate the location of the center to be at a specified institution. Does that explain it?

Senator MUNDT. Yes, that explains that part of it.

Now, is there a financial obligation on the part of the State or the institution in this matching program, or once it has been designated do you carry on from there?

PROGRAM ELEMENTS

Mr. RENNE. There are three aspects, three phases, three separate parts of the act. The first covers the allotment. That is section 100(a). The allotment is an outright grant to try to get the program underway, stimulate, encourage, help effective water research. It does not require matching funds, but obviously a State institution could hardly utilize $75,000 without putting in some effort of its own in terms of office space and equipment, heating, lighting, and other expenses. We do not ask for any specific crediting of funds for matching on this basis. Under the act it is an outright allotment.

STATUTORY MATCHING OF FUNDS REQUIREMENT

Section 101, the second part of the act, is the matching fund section for the institutes or centers—these same centers. Here dollar-for-dollar is required to the State to match the Federal funds. If a State were to get $100,000 they would be expected to put up $100,000 non-Federal. They can be credited for salaries that they pay, for heat or light, for fiscal accounting, and other prorated costs. The third type of assistance, of course, is title II, and that has not been activated because there is question about the wording in the act, as you know. There is no request for fiscal year 1966 funds for it. There have been no moneys appropriated for title II.

COMMUNICATION TO SCHOOLS AND STATE ADMINISTRATIONS OF STATUTORY PROVISIONS

Senator MUNDT. Have the schools and State administrations all been contacted so that they know exactly what they should be doing and how they should make their application?

Mr. RENNE. Yes. We set a deadline of December 5 for the States to send us applications or requests for funds.

Senator MUNDT. Those are the 48 that you say you already have.

Mr. RENNE. Just before I came away this morning I received a request for Puerto Rico and that completes all 51. Forty-eight of these have in their detailed requests submitted in keeping with the act. Two of them, Massachusetts and Maryland, are in process of finishing theirs. Puerto Rico states their center has been established and their formal application will be along just as quickly as they can complete it.

STATE CENTERS APPROVED FOR ALLOTMENTS

Senator YOUNG. How many States have had their proposals approved?

Mr. RENNE. There are 14, Senator. The 14 water research centers that have been approved for an allotment are located in Arkansas, Colorado, Georgia, Idaho, Illinois, Michigan, Missouri, Montana, New Hampshire, New Mexico, New York, Ohio, Utah, and Washington—8 west of the Mississippi and 6 east. They are the only ones that have been approved so far. We also have requests for matching funds from four States and are in the process of considering those that are coming in from others.

Senator YOUNG. When you say they have been approved, do you mean they have received the whole $100,000 available?

Mr. RENNE. We should say they have received the $75,000 first year allotment authorization. The 14 were in the initial group that received the authorized amount of $75,000 each, and this used up total moneys available from the appropriations last October for allotments. We have evaluated many of the other 37 and they can qualify but have not had an allotment approval.

PENDING SUPPLEMENTAL FOR REMAINING STATES

Senator YOUNG. If you get the supplemental appropriation you are asking for, the rest of the applications will be approved.

Mr. RENNE. That is right. The supplemental request will enable us to provide the $75,000 authorized in the act to the remaining 37. In other words, 51 minus the 14.

This is the figure in the supplemental fiscal year 1965 request.

Senator MUNDT. Obtaining the initial approval is the first essential step. After that if these programs grow, the funds are on a matched basis, $100,000 from the Federal Government and $100,000 from the State, part of which can be payments for rent, salaries, and heat, and light.

Mr. RENNE. That is right, for the section 101 part of the act.

Senator YOUNG. Thank you.

STATEMENT BY DIRECTOR RENNE

Chairman HAYDEN. Finish your statement if you wish.

Mr. RENNE. I have a prepared statement which I hope you will include in your record. I have only a few additional comments. I think the Senator's questions have covered many of the things that I would have said. I think the interest which has been shown by the fact that we have received, now, 51 specific requests indicating that all of the States have set up centers of water research, is indicative of the widespread interest.

CATEGORIES OF RESEARCH

The research projects which have been submitted in connection with these programs, if we divide them into the nine major categories which the Federal Office of Science and Technology uses, we find that 80 percent of these projects fall in four major categories:

(1) The water cycle; (2) water and land management; (3) development and control, including water supply and flood control, urban and industrial water uses, and (4) the qualitative aspects, which include pollution. Four-fifths of the projects of the 14 centers which were approved for allotments were included in these 4 major types of research. We have a total in the 51 centers thus far, and over 280 projects, an average of about 5 percent. Most of these centers are so organized that they include participation by the other major universities in the State in a coordinated plan. For example, in the State of Washington, Washington State, at Pullman, is the land-grant institution and the center is located there. The University of Washington and Washington State, through a memorandum of understanding approved by the board of regents, both participate in the research program.

Thus, we are trying to draw in the full research competence of the State in water resources research.

WATER CYCLE CATEGORY DEFINED

Senator MUNDT. Those other terms are pretty much self-explanatory. When you speak of the water cycle, are you talking about the rainfall cycle?

Mr. RENNE. I did not quite get the question.

Senator MUNDT. You said "water cycle." Are you talking about the rainfall cycle?

Mr. RENNE. That is right, the rainfall, how much gets back in streams, the means of reducing evaporation and transpiration, the ground water, hydrology, forecasting the amounts of water that will be available, et cetera. I do want to say, Mr. Chairman, that we have these nine breakdowns of major types of projects listed for the 14 centers that are initiated and for the 37 yet to be initiated. I would be very glad to include those in the record so that you may know what each state has presented.

(The information referred to follows:)

CATEGORIES OF WATER RESOURCES RESEARCH

1. Nature of water.
2. Water cycle—including precipitation; snow, ice, and permafrost; evaporation and transpiration; streams and lakes; ground water and hydrogeology; oceanic influences; and forecasting.
3. Water and land management—including water movement in soils; water and plants; watershed protection; water-yield improvement; erosion and sedimentation; upstream flood abatement; irrigation; and drainage.
4. Development and control—including water supply; flood control (downstream); hydropower; navigation; urban and industrial water-use problems; recreation; fish and wildlife; estuarine oceanography; coastal engineering.
5. Qualitative aspects—including characterization of wastes; effects of pollution on water uses; interactions of wastes; disposal of waste effluents; surface interactions; effects of development on quality; quality characteristics; and aqueous solutions.
6. Reuse and separation—including saline-water conversion: advanced waste treatment; improved treatment of wastes; treatment of water; and use of water of impaired quality.
7. Economic and institutional aspects—including role of water in growth, economics of development and management; economic analysis of institutions; area appraisals.
8. Engineering systems—including design; materials; and construction, operation, and maintenance.
9. Manpower and research facilities—including education and training; and research facilities.

PRELIMINARY BREAKDOWN OF RESEARCH PROJECTS PROPOSED BY 14 STATE WATER RESOURCES RESEARCH CENTERS

(Broad subject matter headings are those developed and used by the Committee on Water Resources Research of the Federal Council for Science and Technology, Office of Science and Technology.)

Location of center by State	Number of projects proposed by research categories									
	I	II	III	IV	V	VI	VII	VIII	IX	Total projects
Arkansas			1	2						3
Colorado		2		2	1					5
Georgia	3	6	2	1	4	1	1	2		20
Idaho			1				1			2
Illinois		1			3			2		6
Michigan		2	2	3	1			1		9
Missouri		1	1					1		3
Montana		1		1						2
New Hampshire		1	1		1					3
New Mexico			4	2	1					7
New York				2		1			1	4
Ohio				1	3					4
Utah		1			1		1	1	1	5
Washington		2	2	2	1		1		1	9
Total	3	17	14	16	16	2	4	7	3	82
Percentage	3.7	20.7	17.1	19.5	19.5	2.4	4.9	8.5	3.7	100

PRELIMINARY BREAKDOWN OF RESEARCH PROJECTS PROPOSED BY STATE WATER RESOURCES RESEARCH CENTERS WHICH DID NOT RECEIVE AN INITIAL FEDERAL ALLOTMENT

(Broad subject matter headings are those developed and used by the Committee on Water Resources Research of the Federal Council for Science and Technology, Office of Science and Technology.)

Location of center by State	Number of projects proposed by research categories									
	I	II	III	IV	V	VI	VII	VIII	IX	Total projects
Alabama					4	1		1		6
Alaska [1]										
Arizona [1]										
California [1]										
Connecticut		3	2	1	3		1	2		12
Delaware		1	2	3	2	1	2			11
Florida [1]										
Hawaii		3	3	1				1	1	9
Indiana		1	2	1	2					6
Iowa [1]										
Kansas		2	2		2					6
Kentucky		1	1	1	1		1	1		6
Louisiana			2	3	3		6	2		16
Maine			1	1	4					6
Maryland [1]										
Massachusetts [1]										
Minnesota		4	5		2			2		13
Mississippi			2				2			4
Nebraska		2	7				4	1		14
Nevada [1]										
New Jersey		1		1	1		1	1		5
North Carolina [2]		2	8	10	11	1	3	2		37
North Dakota [2]	1	1	16	5	8	1	3	4	2	41
Oklahoma	1		2	2	4				1	10
Oregon [1]										
Pennsylvania		1	1		5		1			8
Puerto Rico [1]										
Rhode Island					3		1		1	5
South Carolina		4			2		1	1		8
South Dakota [1]										
Tennessee			2		2			2	1	7
Texas		1	1		3		1			6
Vermont		1	1		3					5
Virginia		2		2	3			1		8
West Virginia		1	1		5			1		8
Wisconsin					1		1			2
Wyoming									1	1
Total	2	31	61	31	74	4	28	22	7	260
Percentage	1	12	23	12	28	2	11	8	3	100

[1] List of specific projects to be supported by Federal allotment not available.
[2] Projects to be initiated first are not specified.

MATCHING FUND, SECTION 101(a), PROJECTS

Mr. RENNE. Mr. Chairman, I know your time is very limited. I would rather that you asked questions.

Chairman HAYDEN. How many projects have the members of your staff evaluated and approved for financial support on a matching basis under section 101?

Mr. RENNE. We have not made any grants of matching fund moneys as yet. Four States have submitted specific matching fund research proposals and others have indicated that they plan to do so. The total for the four States is $260,000 approximately. The funding of eligible grant requests is one of the things we are trying to get done.

Chairman HAYDEN. Please furnish for the record a tabulation of the research projects, indicating the institution to which they were assigned and the amount of the grant.

Mr. RENNE. Very well.

(The tabulation referred to follows:)

Applications received from State water resources research institutes for matching fund grants pursuant to sec. 101(a) of the Water Resources Research Act of 1964

Institute location	Title of project	Amount of applicant's fund request
University of Idaho, Moscow, Idaho.	Development and operation of a multiparameter hydrologic measurement and telemetry system—A comprehensive approach to water resources inventory.	$109,575
Clemson University, Clemson, S.C.	Physical, meteorological, and hydrologic aspects of evapotranspiration.	39,500
Auburn University, Auburn, Ala.	Evaluation of earthy materials for use in decontamination of water.	16,050
	Biological and chemical oxidation of selected organic pesticides.	15,336
	Dynamics of chemical and physical characteristics of water, bottom muds, and aquatic life in a large impoundment on a river.	42,450
South Dakota State University, Brookings, S. Dak.	Influence of low rates of water application by sprinklers on the microclimate.	35,000
Total		257,911

EQUIPMENT PURCHASES

Chairman HAYDEN. In your statement you indicate that a part of the administration fund would be needed for additional equipment purchases for your new offices during the year 1966.

Mr. RENNE. Yes.

Chairman HAYDEN. Specifically what effort are you making to supply this equipment from excess surplus property available through the General Services Administration?

Mr. RENNE. I will ask Mr. Koop, our executive officer, to answer that, Mr. Chairman.

Mr. KOOP. Procurement requisitions are cleared with our property management office in the Department to determine if there is surplus equipment available. At the present time most equipment we are using is surplus equipment and, as of yesterday, I learned that additional typewriters we need will come from surplus sources. Our budget request anticipates that we will continue to utilize surplus equipment whenever such equipment is available and will fulfill our needs.

WATER RESEARCH CATALOG

Mr. RENNE. Another item I think needs to be emphasized is the catalog of federally supported active water research projects which we are about to have published. We think this is a very important item. The Science Information Exchange of the Smithsonian Institution prepared the basic catalog material for us, cross-referenced various ways so that it will be very useful. It includes nearly 1,600 projects. This is an item in the expense of operating the office. We think it is very important to keep undesirable duplication at a minimum, to help those in the research field as well as other interested groups and individuals to know what water research is being done.

We contemplate a second catalog which will cover nonfederally supported active research projects on water. This will be especially useful nationwide.

Senator MUNDT. Will all our congressional offices get copies of that catalog?

Mr. RENNE. That is correct.

Mr. EATON. If they request it.

Senator MUNDT. You have my request now.

Mr. EATON. We will be pleased to furnish copies to you. We didn't want to burden you with it unless it is wanted.

Mr. RENNE. We anticipate enough copies so that we can have good coverage. We have already received requests for a third catalog to cover water research in other countries. Senator Proxmire, I think you would be especially interested in this. There is none such at this time. We think it would be a very helpful compilation. I have a brief statement on this which I will insert in the record, with your permission.

Chairman HAYDEN. Are there any further questions? If not, we thank you for your appearance.

Mr. RENNE. Thank you very much.

(The information referred to follows:)

INFORMATION DISSEMINATION

We recognize that transfer of information is an inseparable part of research. In accordance with responsibilities assigned to the Secretary of the Interior by sections 104 and 300 of the act, and the other responsibilities for avoidance of undesirable duplication, we are proceeding to use modern information dissemination techniques to accomplish coordination through communication among the water resources research institutes and centers established under the act, grantees and other participants, and all other agencies known to be concerned with water problems. The publishing of a catalog of water resources research in cooperation with the Science Information Exchange and the President's Office of Science and Technology is a first step in this effort. Other complementary systems of notification of research in progress and research results including selective dissemination of information, are underway or planned by our Office.

WEDNESDAY, FEBRUARY 17, 1965.

OFFICE OF THE SOLICITOR

STATEMENTS OF FRANK J. BARRY, SOLICITOR; EDWARD WEINBERG, DEPUTY SOLICITOR; WALLACE L. DUNCAN, SPECIAL ASSISTANT; AND EDITH A. MAHON, ADMINISTRATIVE OFFICER

BUDGET REQUEST FOR 1966

Chairman HAYDEN. Mr. Barry, we will now hear from you.

An increase of $256,000 to a total figure of $4,479,000 is requested by the Office of Solicitor for salaries and expenses in fiscal year 1966. The statement and justification of this request will be printed in the record.

(The statement and justification referred to follow:)

HIGHLIGHT STATEMENT

The estimate for the legal services of the Department in the 1966 fiscal year assumes and applies program savings of $52,000 to the incremental costs of operation in the new fiscal year. In result, the necessary increase in funds over those provided in the 1965 fiscal year is being limited to $86,000.

Also provided is an increase of $5,000 in authorized reimbursement to the Office of the Solicitor so as to cover salary rises under the Salary Reform Act of 1964.

The estimate reflects requirements related to the operation of a consolidated law office for the benefit of the Secretariat and the bureaus and offices of the Department. In addition to providing legal assistance to the farflung activities of the Department through field establishments currently maintained, the funds requested will permit the opening of a small office in the eastern section of the country for the more direct and expeditious disposition of the increasing volume of legal work associated with the activities in the eastern area of the National Park Service, the Fish and Wildlife Service, and the newer Bureau of Outdoor Recreation.

Appropriation, 1964	$4,000,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	−850
Total available, 1964	3,999,150
Appropriation, 1965	4,223,000
Pay costs supplemental	170,000
Total available, 1965	4,393,000

SUMMARY OF INCREASES AND DECREASES, 1966

Extension of service in existing positions	37,000
Increase for three positions to staff a new field office including $6,000 for operating expenses	31,000
Increase in other expenses	18,000
Net increases, 1966	86,000
Budget estimates, 1966	4,479,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
Legal services	$3,986,771	$4,223,000	$170,000		$4,393,000
Unobligated balance lapsing	12,379				
Total	3,999,150	4,223,000	170,000		4,393,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Legal service	$3,986,771	$4,393,000	$4,479,000	+$86,000
Unobligated balance lapsing	12,379			
Total	3,999,150	4,393,000	4,479,000	+86,000

JUSTIFICATION

The 1966 estimate for the legal services of the Department takes into account program savings which will allow the application of $52,000 to the rising financial requirements of the office in the new fiscal year. In result, the increase over the adjusted appropriation for the 1965 fiscal year is limited to $86,000, inclusive of the funds necessary for the establishment of a new field office in the eastern section of the United States. The increase is distributed as follows:

To extend service in existing positions	$37,000
In salary costs for three positions to staff a new office to be located in Northeastern or Southeastern United States during fiscal year 1966	25,000
To apply to increases in personnel benefits	6,000
For other expenses (of which $6,000 applies to the new field office)	18,000

Owing to the salary increases payable under the Salary Reform Act of 1964, an increase of $5,000 in allowable reimbursements to the Office of the Solicitor from other accounts available to the Department is requested in this estimate. With this increase, the ceiling on authorized reimbursements will be $147,000 for fiscal year 1966.

It is the duty and responsibility of the Solicitor and his staff to provide legal services for the entire Department of the Interior, its bureaus and offices, its many field establishments, and the Secretariat. In our budget justification statements for the past several years, we have repeatedly pointed out that the legal staff of the Department has decreased rather than increased since 1952 while the demand for legal services and the volume of work has grown many times over. A number of examples of increases in the burden of legal work are set out below.

Apparently, the extent of legal service required in connection with the Department's programs and activities is not recognized when we consider that this Office has consistently been required to do an ever-growing job with the same number of people. For example (and again at the risk of repeating points made in similar statements in past budget statements), at the time legal services were consolidated in the Office of the Solicitor (1954), we had 193 attorneys on the rolls. At that time also, the Department's total appropriation was approximately $522,213,072. At the end of fiscal year 1964, the Office of the Solicitor employed 195 attorneys, while the departmental appropriation had soared to $1,176,980,935.

A more meaningful comparison shows that the average employment for the Department as a whole for fiscal 1954 was 54,504. For fiscal year 1964, the comparable figure is 64,508, an increase of almost 20 percent. Yet the number of attorneys remained virtually constant over the same 10-year period. Even including the clerical personnel, the total staff of the Solicitor's Office in 1955 (the first year for which we have a record of the clerical staff) stood at 370 employees. As of June 30, 1964, the total employees in the Office numbered only

381 (10 of which were temporary employees hired as summer law clerk trainees for a 3-month period at a GS–5 salary).

Of the total budget increase requested ($86,000), $25,000 will be utilized in funding three positions needed to staff a new regional or field office in the Southeastern or Northeastern States; $37,000 will be applied to the extension of service in existing positions.

With each increase in the activities and programs of the Department, there is inevitably a corresponding increase in the workload of the Solicitor. We invite your attention to the following items which have significantly increased the workload of the Office. Work on these projects will continue for many months hence and will be handled by the Office in addition to the regular workload. For example:

1. The legal services required in connection with the grant programs under the recently enacted land and water conservation fund legislation will be extensive. For the past 2 months, at the expense of their other assigned work, three attorneys have devoted substantially all of their time to the task of implementing the legislation and answering inquiries involving legal aspects of the law. It is anticipated that the administration of grants under this legislation, once it is fully operative, will require the full-time legal services of at least two attorneys and as many clerical personnel.

2. The order of the Secretary issued on April 17, 1964, implementing plans for the early disposition of invalid oil shale mining claims on the Colorado Plateau, has involved the Office of the Solicitor in numerous contest proceedings and lawsuits which will continue to occupy the time and attention of the staff until the validity of approximately 15,000 claims has been determined. The program, which is an essential first step in the orderly development and utilization of the oil shale resource, will constitute a major workload item in the Office of the Solicitor for at least the next 5 years.

3. The implementation of the Canadian Treaty and the legal work necessary in the planning and construction of the Pacific-Northwest-Pacific-Southwest intertie are significant new workload factors in the Office of the Solicitor. This project will require increases in staff in at least three regional offices during fiscal year 1966.

4. The patent work of the Office has now outgrown the capacity of the present 3-man staff. The rapid growth of the workload of our patent counsel corresponds to increases in the number of research contracts let by the Office of Coal Research and the Office of Saline Water. The patent counsel also has the continuing responsibility to implement and enforce the administration's patent policy requiring the Government to retain patent rights in connection with Government-financed research.

5. Acquisition programs in national seashore areas such as Point Reyes, Cape Cod, Padre Island, and Fire Island are now in full operation and require continuing services from the Office of the Solicitor.

6. Participation by the Department in licensing proceedings before the Federal Power Commission and in litigation arising therefrom has increased steadily in recent years and representation of the Department's interests by the Office of the Solicitor is essential to the protection and utilization of the important resources administered by the Department.

7. Further consideration and development of the Pacific Southwest water plan will require the Office to provide legal services during every stage of the project.

8. With the issuance of the decree by the Supreme Court in *Arizona* v. *California* last March 9, 1964, the Department is charged with the responsibility of implementing the decree and delineating the present perfected water rights thereunder. The Solicitor's Office will play a major role in this project.

9. The Office continues to be involved in attempts to resolve problems created both within the United States and with Mexico, by the lower Colorado River salinity problem—including acquisitions of rights-of-way for construction and international legal problems.

10. The Office is committed to provide a legal adviser and legal services to the Oil Shale Advisory Board appointed by Secretary Udall last year for the purpose of examining the potential of an oil-shale industry in this country.

11. With the legislation authorizing the establishment of the Public Land Law Review Commission, it is anticipated that the Office will be called upon to provide substantial background materials and to express views on important questions under consideration by the Board.

As shown above, $25,000 of the requested increase, will be used to staff a new office in the Northeastern or Southeastern United States, the specific location to be chosen after further study and consideration. The Department has never

(except for a very small localized operation at Elberton, Ga., serving the Southeastern Power Administration) stationed lawyers in the Eastern States outside of the home office in Washington. The resurgence of national park and fish and wildlife activities in the eastern half of the country requires that we establish an eastern field or regional office during the coming fiscal year. We can no longer ignore the steady growth of departmental activities in this area—where demands have exceeded our capacity to provide legal services from the distant point of our Washington office. On-site availability of legal assistance is required.

In further explanation of the request for funds to extend service in existing positions, we must point out that the employment ceiling of the Office of the Solicitor for the present fiscal year is 388 employees. During the fiscal year 1966, it will be necessary to have an average of at least 391 employees on a man-year basis to meet an increasing workload. This will require provisions for services not now available in areas where increases in demands for legal work will be particularly critical, such as in the Portland, Sacramento, and Los Angeles regional offices (increases due to Pacific-Northwest Pacific-Southwest intertie and implementation of the Canadian Treaty); patent attorney (increases in research contracts and implementation of patent policy); and, in the departmental office (increases due to implementation of land and water conservation fund legislation and related increases in the activity of the Bureau of Outdoor Recreation) to mention only a few.

We have included in this estimate the funds to continue the project authorized by Congress in 1965 for the updating of the annotations of the Federal reclamation laws.

If possible, we will absorb again in fiscal year 1966, the costs of maintaining a summer law clerk trainee program. The program has proved to be a valuable device for recruitment and training of law students in the specialized areas of the law administered by the Department.

Itemization of Estimate

Salaries and expenses

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$4,125,384	$4,535,000	$4,626,000	+$91,000
Advances and reimbursements from other accounts	−138,613	−142,000	−147,000	−5,000
Unobligated balance lapsing	12,379			
New obligational authority	3,999,150	4,393,000	4,479,000	+86,000
New obligational authority:				
Appropriation	4,000,000	4,223,000	4,479,000	256,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	−850			
Proposed supplemental due to civilian pay increases		170,000		−170,000
Object classification:				
11 Personnel compensation	3,499,791	3,890,000	3,957,000	+67,000
12 Personnel benefits	259,653	294,000	300,000	+6,000
21 Travel and transportation of persons	90,247	102,000	111,000	+9,000
22 Transportation of things	4,543	5,000	6,000	+1,000
23 Rent, communications, and utilities	73,263	64,000	67,000	+3,000
24 Printing and reproduction	29,580	30,000	30,000	
25.1 Other services	9,279	9,000	9,000	
25.2 Services of other agencies	76,851	77,000	80,000	+3,000
26 Supplies and materials	15,875	22,000	23,000	+1,000
31 Equipment	63,802	42,000	43,000	+1,000
42 Insurance claims and indemnities	2,500			
Total obligations	4,125,384	4,535,000	4,626,000	+91,000

PROGRAM SAVINGS

Chairman HAYDEN. I observe in your justification statement that $52,000 of program savings are being applied to the increased financial requirements of your Office. Will you please name these program savings and the amount attributed to them?

Mr. BARRY. Yes, we are closing the office of the field solicitor at Ephrata, Wash., which has heretofore served the Columbia Basin project. Our studies indicate that we can absorb the load from that office by adding one additional lawyer to the staff of the office at Boise, Idaho.

We are also closing the office at Bismarck, N. Dak., which is a hearing examiner office and which has been operated for the last year and a half from Minneapolis. We feel we can continue that without any loss of efficiency and therefore we can save approximately $21,000.

Chairman HAYDEN. Will you supply for the record a statement showing the allowable reimbursements to your Office from other accounts available to the Department of the Interior for both fiscal years 1965 and 1966?

Mr. BARRY. We will be glad to do that.

(The information referred to follows:)

REIMBURSEMENTS

	Estimated, 1965	Estimated, 1966
Bureau of Mines	$19,600	$20,300
Geological Survey	13,000	13,500
Fish and Wildlife Service	57,000	59,000
Bureau of Reclamation	25,000	26,000
Alaska Railroad	23,500	24,500
Other, miscellaneous	3,900	3,700
Total	142,000	147,000

LOCATION OF REGIONAL FIELD OFFICE IN THE EAST

Chairman HAYDEN. It is indicated that $25,000 of the budget increase is for the purpose of funding three positions needed to staff a new regional field office in the eastern part of the United States. Have you decided yet where this office will be and when it is to be opened?

Mr. BARRY. It is to be at Philadelphia, and it will be opened as nearly after the 1st of July as possible.

LOWER COLORADO RIVER SALINITY PROBLEM

Chairman HAYDEN. Included within the increased activities in the Department of the Interior, which make necessary a larger sum for fiscal year 1966, is—

The lower Colorado River salinity problem—including acquisitions of rights-of-way for construction.

Will you please explain just what rights-of-way are acquired or are proposed to be acquired?

Mr. BARRY. I will ask Mr. Weinberg, who is informed on that.

Mr. WEINBERG. As you know, Senator Hayden, there has been discussion with the Mexican Government and with the Committee of Fourteen on a way to handle the Mexican salinity problem which would involve a channel paralleling the river to a point below the Mexican diversion dam. The title situation along the river is in some dispute at various points. There have been contentions that some of this land is in squatter occupancy. Some of the people occupying claim title through the State, and we anticipate that we may have some title problems in clearing right-of-way. There is also a problem of right-of-way around the edge of the city of Yuma where extensive development exists.

Chairman HAYDEN. But there is no approval of the bypass channel as yet. So why study the rights-of-way for this purpose until that time?

Mr. WEINBERG. We anticipate that if it were to become necessary, we would have a right-of-way problem.

Chairman HAYDEN. How much are you going to spend for this?

Mr. WEINBERG. We don't have any particular amount budgeted. I would like to furnish additional information to your office.

Chairman HAYDEN. I would like to have that information.

(The following letter from the Solicitor was subsequently received:)

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SOLICITOR,
Washington, D.C., February 24, 1965.

Hon. CARL HAYDEN,
Chairman, Senate Appropriations Committee, U.S. Senate,
Washington, D.C.

DEAR SENATOR HAYDEN: I am writing this letter to clarify the references to right-of-way matters in connection with the lower Colorado River salinity problem which were referred to in our justification statement for the appropriation request for the Office of the Solicitor, and which arose at the hearing on February 17.

Let me say first that unless and until a bypass channel is officially approved and undertaken by the United States, there will, of course, be no activity by our Office in connection with rights-of-way. We did not intend in the justification statement nor in the testimony to leave the impression that the Solicitor's Office is now engaged in working on right-of-way matters, nor, for that matter, that a decision has been reached to undertake construction of a bypass channel.

The Mexican salinity problem is 1 of 11 items set out at pages 6 to 8 of our justification statement as examples of items which have significantly increased the workload of the Office. For convenient reference I repeat here the full text of the Mexican salinity item:

"9. The Office continues to be involved in attempts to resolve problems created both within the United States and with Mexico, by the lower Colorado River salinity problem—including acquisitions of rights-of-way for construction and international legal problems."

As will be noted, the statement does not itself refer to a bypass channel and the reference to rights-of-way was included only incidentally. We have not budgeted any specific amount for right-of-way examination.

Sincerely yours,

FRANK J. BARRY, *Solicitor.*

UPDATING ANNOTATIONS TO FEDERAL RECLAMATION LAWS

Chairman HAYDEN. You state in your justification that included in the fiscal year 1966 estimate are funds to continue the project added by Congress last year for updating the annotations of the Federal reclamation laws. I recall that $25,000 was made available at the time the project was initiated. The statement then supplied to this committee indicates that this amount covered the personnel and related costs, exclusive of any printing cost, which might be

involved for completion of the project. What is the amount of the additional funds included in the fiscal year 1966 estimate for this purpose?

Mr. BARRY. $25,000 to maintain the staff we have, the staff working on the program. It has not been completed. It is being done by a very competent lawyer. He has a secretary and other expenses in connection with this program.

Chairman HAYDEN. How much do you estimate the total cost of updating the annotations, exclusive of the printing cost, will be?

Mr. BARRY. I don't have any estimate from him how much longer it will be.

Mr. WEINBERG. I understood his latest estimate was somewhere in the neighborhood of another 9 months of the next fiscal year.

CHEYENNE OFFICE

Chairman HAYDEN. Have you established the regional office in Cheyenne as authorized last year?

Mr. BARRY. It is a field office. It is a field office operating under the Denver regional office.

Chairman HAYDEN. Are there any questions?

Senator YOUNG. Yes.

BISMARCK OFFICE

Are you closing out the Bismarck office or just reducing its operations?

Mr. BARRY. We are closing it. It has been in effect closed. We have had a secretary there since Mr. Hoadley became ill. He had a long illness, but he also had a great deal of leave time for which he was entitled to be paid. So he continued on our payroll almost all the time he was ill. Then he retired. The load of the office has been carried all through this period, over a year, by the hearing examiners in nearby locations, principally Minneapolis. We find it is being handled efficiently without damage to the service. So we considered it economical to close the Bismarck office.

CLAIMS HANDLED BY BISMARCK OFFICE

Senator YOUNG. What kind of claims are handled there?

Mr. BARRY. Indian probate matters where restricted property passes from an ancestor to a descendant, passes by will or by intestacy. We have Indian probate examiners who make the determinations. They will hear these and make their determinations.

Senator YOUNG. Are you going to transfer the staff to the Aberdeen office?

Mr. BARRY. I don't know whether the secretary will transfer or not. Do you know what the information is?

Miss MAHON. A position will be available to her wherever she would be willing to go. We have a number of vacancies. We doubt that she will transfer.

Senator YOUNG. Will there be any saving by closing this office?

Mr. BARRY. Yes, $20,000 a year.

Senator MUNDT. What has the secretary been doing if she has not had any boss?

Mr. BARRY. Actually the office is open so that the people can make their applications and so forth there. She keeps all the files and records and so on. But the hearings have been handled by the personnel in these other offices. We feel they can handle them just as well without adding the additional office.

INEFFICIENCY IN THE PROCESSING OF CLAIMS

Senator YOUNG. You say you can handle these cases just as well from the Minneapolis or Aberdeen offices, but based on recent experiences you are not handling these cases with much efficiency. Rev. Robert Fox, chairman of the tribal council of the three affiliated tribes and Peter Star, Sr., both of Newtown, N. Dak., contacted me concerning the estate of Helen Gough or Helen Gough Price. Her will was submitted to the Office of Solicitor in the Department of Interior last summer for final determination. Robert Fox and Peter Star wanted to find out what was delaying final action in the case. On December 15 I addressed a letter to Mr. Duard R. Barnes, Assistant Solicitor, Department of Interior, requesting a report on the present status in this case. No reply has been made to this letter.

On January 11 a member of my staff talked to Mr. Barnes and again asked him to give us a report on this case and give us some idea of when it would be settled. A written reply was requested, but to date, there has been none.

On January 26 I sent a letter to Mr. Barnes, via special messenger, again requesting a report on this case. There has been no reply. Do you call this efficiency or don't we Members of Congress count?

If you don't care to answer your mail, maybe it would be helpful to make some speeches on the Senate floor telling about the increase in appropriations for the Solicitor's Office of about 30 percent and the almost total lack of efficiency and consideration of the problems both to the Indians themselves and to Members of Congress which bring these cases to your attention.

Mr. BARRY. This has nothing to do with the Bismarck office apparently. I heard about this yesterday evening, and I got Mr. Barnes on the telephone to find out about the case. He told me it was in the typewriter and that the case was going to be decided before the close of business yesterday. Now, that is the second part of your question.

The third part of your question is whether I consider this to be efficiency. I certainly do not, and I intend to do something about it. I don't know how complicated the question is.

Senator YOUNG. You could reply to my letter stating that it had been received and the case was under consideration. That would help some.

Mr. BARRY. Indeed, I agree with you. This is not what I want to occur in my office.

Senator YOUNG. I don't know any other department of Government that handles their business this way. I note that your appropriation for 1956 was $2,690,000. For the present fiscal year you got $4,223,000, or an increase of about $1.5 million. Yet your efficiency has gone down so far as the handling of cases is concerned.

Concerning the Bismarck office, I have no objection to your closing it. If you can save some money, well and good. This office is doing no good.

PROMISE OF CORRECTIVE ACTION

Mr. BARRY. I agree with you in this particular instance that we have reason to be ashamed of what has occurred, but I can't agree with you that our Office has operated inefficiently. I think we do—at least we spend a great deal of effort—I do personally, Mr. Weinberg and the rest of my staff do personally, we try to do a good job in our Office. I think that our Office efficiency is comparable to others.

Senator YOUNG. When you ignore a special messenger letter and fail to reply to my request?

Mr. BARRY. I agree with you, Senator. I intend to do something about it and to see why this occurred and to see that it does not occur again. I know Mr. Barnes, who is probably the culprit in this situation. He is a lawyer of great devotion, he works far more than the number of hours he has signed up to work, and we will see to it that he does not slip up on something like this again. But I think he is an efficient lawyer, and I will see to it that this sort of thing does not happen again. I am sure this is not conducive to the efficiency of your own office to have to write several letters and make several requests.

ADJOURNMENT OF SUBCOMMITTEE

Chairman HAYDEN. Are there any further questions?

If not, we stand adjourned until Thursday, February 18, to hear the Geological Survey and the Bureau of Outdoor Recreation.

(Whereupon, at 12:10 p.m., Wednesday, February 17, 1965, the subcommittee adjourned until Thursday, February 18, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

THURSDAY, FEBRUARY 18, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Chairman Hayden, Senators Byrd, Bartlett, Mundt, and Young.

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

STATEMENTS OF THOMAS B. NOLAN, DIRECTOR, ACCOMPANIED BY ARTHUR A. BAKER, ASSOCIATE DIRECTOR; ROBERT H. LYDDAN, ASSISTANT DIRECTOR; EARLE J. FENNELL, ASSOCIATE CHIEF TOPOGRAPHIC ENGINEER; M. R. KLEPPER, ACTING CHIEF GEOLOGIST; GEORGE FUMICH, JR., ACTING DIRECTOR, OFFICE OF MINERAL EXPLORATION; FRANK JOHNSON, DEPUTY DIRECTOR, OFFICE OF MINERALS EXPLORATION; LUNA B. LEOPOLD, CHIEF HYDROLOGIST; HAROLD J. DUNCAN, CHIEF, CONSERVATION DIVISION; PERRY B. SIMMS, ACTING EXECUTIVE OFFICER; JOHN H. ERIC, ACTING CHIEF, PUBLICATIONS DIVISION; FENTON G. USHER, BUDGET AND FINANCE OFFICER; FREDERICK E. STEARNS, BUDGET OFFICER; AND HARVEY B. MACK, ASSISTANT DIRECTOR OF BUDGET

1966 BUDGET ESTIMATE

Chairman HAYDEN. The committee will be in order.

The Geological Survey proposes a fiscal year 1966 budget in the amount of $72,826,000, which is an increase over fiscal year 1965 of $5,571,000. The statement furnished in the justification for this estimate will be included in the record.

(The statement referred to follows:)

SURVEYS, INVESTIGATIONS, AND RESEARCH

HIGHLIGHT STATEMENT

The prosperity presently enjoyed by this Nation can be expected to continue indefinitely into the future, but only if there is a continuation of the present expansion of industrial production and accompanying rise of living standards. The increase in the production of consumer goods will result in tremendous increases in the consumption of raw material including both the nonrenewable mineral resources and the renewable or partially renewable water supplies. Continued prosperity also creates new problems related to major engineering projects and rapid urban growth.

At the present time foreign sources can adequately supply our needs of many mineral commodities where domestic reserves are small, but these sources are subject to abrupt changes in availability as a result of altered political conditions as well as the rapidly increasing demands for the growing industries in developing nations. Foreign supplies of any raw materials can be abruptly cut off even in peacetime and knowledge of our domestic mineral reserves must be maintained and expanded at a level commensurate with current and projected demands.

Our Government must be ready to provide guidance and to assist in wise and conservative land use as our urban areas "sprawl" into the surrounding agricultural and forest lands, as large building and highway construction projects are planned and implemented on previously untested foundations, and as population centers mushroom in desert areas which are already faced with problems of inadequate and dwindling water supplies. Industrial growth and urban expansion also are resulting in ever-increasing demands for topographic mapping of new areas and for resurveys where changes render the old maps obsolete, or more detail is demanded by new needs.

Information regarding water and mineral resources necessary for their development and utilization cannot be acquired either readily or economically on short notice. For effective planning, leadtime of several years not only is desirable but is necessary. This is particularly true where future needs will far exceed present demand. Periods of time, which can be 25 or more years are required from the time a present or potential resource is recognized until it can be made available for utilization.

In order that the Geological Survey may carry out its assigned role in the growth of our Nation in an orderly and efficient fashion commensurate with national needs, a long-range plan, covering the decade 1963–73, was prepared last year. Because of the diversity of operations carried out by the Survey, the plans for different basic activities reflect somewhat different approaches. The resultant booklet which was revised to reflect the suggestions and critical review of various State, Federal, and private organizations sets forth plans for completing topographic mapping of the country, for a program of water resources investigations that will provide information calibrated to current and future needs, for geologic mapping and mineral-resource investigations in support of the needs of an expanding economy, and for activities related to the development of mineral resources on Federal lands.

Certain phases of our program have been selected as areas in which to study the effects of manpower utilization and cost reduction. These studies have indicated the effectiveness of the measures used in the Survey to control costs and increase efficiency in such diverse activities as royalty accounting and map printing. Although most of the Survey's scientific activities do not lend themselves to the methods generally used for measuring progress and economy of operation, we are not limiting our manpower utilization studies only to readily measurable phases. Long-range studies to find ways of evaluating the operational aspects of our scientific research and of synthesizing the results are underway.

This 1966 budget represents a continuing effort to provide the Nation with the best possible information upon which to base the wise development and use of our mineral and water resources.

Financing of Geological Survey Programs

An appropriation of $72,826,000 is requested for fiscal year 1966, an increase of $2,442,000 over the current year. The total program of the Geological Survey, estimated at $109,753,000 in 1966, is financed approximately 66 percent by direct appropriation, 15 percent by contributions from State and municipal agencies, and 19 percent by reimbursement from Federal agencies and sundry non-Federal entities.

The sources of funds for each activity for 1964, 1965, and 1966 are shown below.

	Actual, 1964	Estimate, 1965	Estimate, 1966
Topographic surveys and mapping:			
Direct appropriation	$21,639,039	$22,492,000	$22,803,000
States, counties, and municipalities	2,774,696	2,788,000	2,840,000
Miscellaneous non-Federal sources	222,191	225,000	225,000
Bureau of Reclamation	1,007,366	1,059,000	1,059,000
National Science Foundation	363,252	408,000	408,000
Miscellaneous Federal agencies	570,468	524,000	468,000
Total	26,577,012	27,496,000	27,803,000

	Actual, 1964	Estimate, 1965	Estimate, 1966
Geologic and mineral resource surveys and mapping:			
Direct appropriation	$16,259,449	$17,297,000	$20,223,000
Comparative transfer from "Salaries and expenses," Office of Minerals Exploration	559,088	1,040,780	
Unobligated balance transferred from "Salaries and expenses," Office of Minerals Exploration			228,000
States, counties, and municipalities	1,068,584	927,000	935,000
Kingdom of Saudi Arabia	463,725	719,000	770,000
Miscellaneous non-Federal sources	69,266	60,000	77,000
Department of Defense	2,776,209	2,919,000	2,495,000
Air Force	283,806	335,000	335,000
Department of State	113,811	21,000	
Agency for International Development	1,269,129	1,333,000	1,444,000
Atomic Energy Commission	1,122,052	1,395,000	1,390,000
Government Printing Office	203,555	260,000	280,000
National Aeronautics and Space Administration	1,369,529	3,042,000	2,911,000
National Science Foundation	278,965	102,000	48,000
Miscellaneous Federal agencies	83,116	101,000	59,000
Total	25,920,284	29,551,780	31,195,000
Marine geology and hydrology: Direct appropriation	497,107	753,000	953,000
Water resources investigations:			
Direct appropriation	18,434,027	20,972,000	21,863,000
States, counties, and municipalities:			
Matched by Federal funds	9,877,635	10,900,000	11,550,000
Unmatched	672,675	800,000	800,000
Permittees and licensees of the Federal Power Commission	326,988	409,000	395,000
Miscellaneous non-Federal sources	65,650	70,000	70,000
Bureau of Reclamation	1,171,772	1,407,000	1,327,000
National Park Service	180,087	175,000	193,000
Agriculture	225,066	213,000	210,000
Air Force	151,334	165,000	144,000
Army	2,467,315	2,754,000	2,767,000
Department of Health, Education, and Welfare	57,322	103,000	120,000
Department of State	151,219	163,000	165,000
Agency for International Development	802,616	929,000	770,000
Atomic Energy Commission	1,060,698	1,126,000	1,155,000
Tennessee Valley Authority	128,443	137,000	133,000
Miscellaneous Federal agencies	319,808	335,000	448,000
Total	36,092,655	40,658,000	42,110,000
Soil and moisture conservation:			
Direct appropriation	192,954	198,000	198,000
Bureau of Land Management	33,602	83,000	84,000
Total	226,556	281,000	282,000
Conservation of lands and minerals:			
Direct appropriation	4,400,946	4,717,000	4,579,000
Miscellaneous non-Federal sources	4,543	5,000	5,000
Miscellaneous Federal agencies	62,123	61,000	58,000
Total	4,467,612	4,783,000	4,642,000
General administration:			
Direct appropriation	1,800,794	1,905,000	1,957,000
Comparative transfer from "Salaries and expenses," Office of Minerals Exploration	8,000	9,000	
Miscellaneous non-Federal sources	37,725	54,000	54,000
Department of Defense	100,200	112,000	89,000
Army	97,219	108,000	108,000
National Aeronautics and Space Administration	45,100	120,000	113,000
Miscellaneous Federal agencies	400,834	395,000	425,000
Total	2,489,872	2,703,000	2,746,000
Special-purpose buildings: Direct appropriation	118,870	1,000,000	250,000
Summary:			
Direct appropriation	63,343,186	69,334,000	72,826,000
Comparative transfer from "Salaries and expenses," Office of Minerals Exploration	567,088	1,049,780	
Unobligated balance transferred from "Salaries and expenses," Office of Minerals Exploration			228,000
States, counties, and municipalities	14,393,590	15,415,000	16,125,000
Miscellaneous non-Federal sources	1,190,088	1,542,000	1,596,000
Other Federal agencies	16,896,016	19,885,000	19,206,000
Total	96,389,968	107,225,780	109,981,000

Surveys, investigations, and research

Appropriation, 1964	$63,700,000
Comparative transfer from "Salaries and expenses," Office of Minerals Exploration	+567,088
Total available, 1964	64,267,088
Appropriation, 1965	67,165,000
Supplemental appropriation, 1965	90,000
Pay cost supplemental	2,079,000
Total appropriation, 1965	69,334,000
Comparative transfer from "Salaries and expenses," Office of Minerals Exploration	+1,049,780
Total available, 1965	70,383,780

SUMMARY OF INCREASES AND DECREASES, 1966

Topographic surveys and mapping:	
To provide for acceleration of standard quadrangle mapping, map revision, and maintenance	310,000
For accelerated production of the National Atlas to provide for its publication with current information	60,000
Nonrecurring financing in 1965 of the States' share of increased pay costs	−59,000
Total	+311,000
Geologic and mineral resource surveys and mapping:	
To initiate a new research effort in earthquake seismology	1,050,000
For acceleration of studies of the earth's crust and upper mantle	460,000
For accelerated programs of economic geology investigations, minerals exploration, and land utilization studies	731,220
Nonrecurring financing in 1965 of the States share of increased pay costs	−22,000
Nonrecurring item due to program savings resulting from consolidation of the Office of Minerals Exploration with the Geological Survey, and other work improvements	−106,000
Transfer in 1966 of unobligated balance from "Salaries and expenses," Office of Minerals Exploration	−228,000
Total	+1,885,220
Marine geology and hydrology: To initiate the marine aspects of a new research effort in earthquake seismology	+200,000
Water resources investigations:	
To expand the Federal program for obtaining and coordinating water resources data and for water resources research	880,870
To match an anticipated increase in State offerings for cooperative water resources investigations	440,000
Nonrecurring financing in 1965 of the States share of increased pay costs	−260,000
Nonrecurring item due to program savings resulting from consolidation of field offices and other work improvements	−65,000
Nonrecurring Montana flood studies	−90,000
Reduced payment to employee compensation fund (Public Law 86-767)	−14,870
Total	+891,000
Conservation of lands and minerals:	
For supervision of increasing exploration and development operations on oil and gas leases, especially on the Outer Continental Shelf	61,000
Nonrecurring item due to program savings resulting from phasing out during 1966 of the Connally "hot oil" program	−199,000
Total	−138,000

Surveys, investigations, and research—Continued

SUMMARY OF INCREASES AND DECREASES, 1966—continued

General administration:	
For administrative support and executive direction of the enlarged substantive programs of the Survey	$46,000
Nonrecurring item due to program savings resulting from consolidation of the Office of Minerals Exploration with the Geological Survey	−3,000
Total	43,000
Special-purpose buildings:	
Engineering design for expansion of the Geological Survey field center at Denver	250,000
Nonrecurring construction of a nuclear research laboratory at Denver	−1,000,000
Total	−750,000
Net increase	2,442,220
Budget estimate, 1966 (new obligational authority)	72,826,000

SURVEYS, INVESTIGATIONS, AND RESEARCH

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
1. Topographic surveys and mapping	$21,639,039	$21,930,000	$562,000		$22,492,000
2. Geologic and mineral resource surveys and mapping	16,818,537	16,775,000	522,000	[1] $1,040,780	18,337,780
3. Marine geology and hydrology	497,107	748,000	5,000		753,000
4. Water resources investigations	18,434,027	20,221,000	751,000		20,972,000
5. Soil and moisture conservation	192,954	195,000	3,000		198,000
6. Conservation of lands and minerals	4,400,946	4,555,000	162,000		4,717,000
7. General administration	1,808,794	1,831,000	74,000	[1] 9,000	1,914,000
8. Special-purpose buildings	118,870	1,000,000			1,000,000
Unobligated balance lapsing	356,814				
Total	64,267,088	67,255,000	2,079,000	[1] 1,049,780	70,383,780

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
1. Topographic surveys and mapping	$21,639,039	$22,492,000	$22,803,000	+$311,000
2. Geologic and mineral resource surveys and mapping	16,818,537	18,337,780	20,451,000	+1,885,220
Unobligated balance transferred from "Salaries and expenses," Office of Minerals Exploration			−228,000	
3. Marine geology and hydrology	497,107	753,000	953,000	+200,000
4. Water resources investigations	18,434,027	20,972,000	21,863,000	+891,000
5. Soil and moisture conservation	192,954	198,000	198,000	
6. Conservation of lands and minerals	4,400,946	4,717,000	4,579,000	−138,000
7. General administration	1,808,794	1,914,000	1,957,000	+43,000
8. Special-purpose buildings	118,870	1,000,000	250,000	−750,000
Unobligated balance lapsing	356,814			
Total	64,267,088	70,383,780	72,826,000	+2,442,220

[1] Comparative transfer from "Salaries and expenses," Office of Minerals Exploration.

1. Topographic Surveys and Mapping

The estimate of $22,803,000 is an increase of $311,000 consisting of:

(a) A decrease of $59,000 for the nonrecurring financing in 1965 of the States share of increased pay costs; and

(b) Program increases of $370,000.

Objectives of the program.—The long-range objectives of the national topographic program are to complete the standard quadrangle mapping of the United States and its outlying areas, to produce the other components of the national topographic map series, and to revise and maintain all of these maps. The Geological Survey's long-range plan sets forth a program for the achievement of these objectives.

Importance of the program.—The topographic surveys and mapping program is an engineering contribution of significant importance to the national welfare and economy. Some of the more important uses of topographic maps are:

Exploration, investigation, and development of natural resources: The land and water resources of the United States are not limitless. A 1963 report of the Federal Council for Science and Technology stated: "The growing importance of low-grade mineral deposits is profoundly changing the mineral industry, * * *" and "* * * their discovery and the decision to exploit them require extensive exploration and analysis using a combination of expensive geological and engineering methods." Topographic maps are vital to the economical pursuit of these exploratory investigations and in providing bases for geologic mapping and study.

Topographic maps are needed to help evaluate sources of water supply and provide an engineering base for the development of a variety of water projects including supply reservoirs, hydroelectric plants, irrigation systems, navigation of inland waterways, pumped storage, and water conservation projects. While serving these beneficial uses of water, topographic maps are also playing a significant part in the study of problems connected with flood control and flood zoning.

Topographic maps are invaluable in forest management studies, grazing and timber inventories, and in planning access roads into national forest areas.

National defense: Complete national map coverage is required to satisfy fundamental military and civil defense needs. At present, large areas covering maneuver areas, posts, camps, and stations are either unmapped or covered by older mapping in need of revision. The Department of Defense reports that there are urgent requirements for completion of mapping in these areas.

Planning and development of transportation and communications systems: Highway location and route surveys, such as those for the Interstate Highway System, and the planning of radio and television networks are dependent upon the availability of adequate surveys and maps.

Conservation and recreation: The preservation of the natural environment and the development of related protective and recreational facilities are necessary to our well-being and to the full enjoyment of our national heritage. Topographic maps are used in planning recreational facilities and wildlife refuges, for public land resources management, and are needed for the selection of areas under the terms of the Wilderness Act and the examination of designated wilderness areas for mineral values.

Urban development: The Nation's population is becoming more concentrated in large metropolitan areas. Maps are available for many of these areas but need to be revised to reflect subsequent changes and urban development. Various planning and development commissions make valuable use of topographic maps in urban and suburban area studies and plans.

The 1970 census: Up-to-date maps of metropolitan areas are urgently needed by the Bureau of the Census for its 1970 population enumeration. Additional funds will be needed to meet the census requirements and, at the same time, maintain topographic mapping obligations to the other Federal map-using agencies.

Analysis of subactivities

Subactivity	Amount available 1964	Amount available 1965	Estimate 1966	Increase (+) or decrease (−)
(a) Standard quadrangle mapping	$18,407,408	$18,760,000	$18,873,000	+$113,000
(b) Map revision and maintenance	2,322,693	2,460,000	2,600,000	+140,000
(c) Small-scale and special mapping	908,938	1,272,000	1,330,000	+58,000
Total	21,639,039	22,492,000	22,803,000	+311,000

(a) *Standard quadrangle mapping*

The estimate of $18,873,000 is an increase of $113,000 consisting of—

(1) A decrease of $47,000 for the nonrecurring financing in 1965 of the States' share of increased pay costs; and

(2) An increase of $160,000 for accelerated standard quadrangle mapping.

This subactivity covers all operations required to prepare and print the first published maps of an area resulting from original surveys in the 7½-minute (scale 1:24,000), 15-minute (scale 1:62,500), or the Alaska, 1:63,360, quadrangle series. It also includes (1) the cartographic operations necessary to publish maps in the 7½-minute series when initially published in the 15-minute series; and (2) the operations necessary to replace 15-minute maps surveyed at 1:62,500-scale standards with maps surveyed at 1:24,000-scale standards.

Need for increase.—Because of the Federal Government's responsibility in sponsoring and developing an increasing number of national or regional programs important to the security, economy, and welfare of the Nation, there is a corresponding increase in the demand for topographic maps from agencies needing such data for their individual programs. High priority requests for standard quadrangle mapping have been received from the principal map-using Federal agencies for virtually all the remaining unmapped areas in the country. The impact of Federal-sponsored programs is reflected in the increasing number of requests from State agencies and from county, metropolitan, and urban planning commissions. These requests relate to national programs and their attendant problems, such as the development and conservation of natural resources, transportation and communications, the study and solution of economic problems in depressed areas, and critical problems associated with water supply, distribution, and pollution.

As many of these problems are interrelated, adequate topographic map coverage would provide a necessary medium for detailed study and analysis.

Plan of work.—Federal map-using agencies annually submit priority requests for topographic mapping under procedures established by the Bureau of the Budget. These requests are further augmented and supported by requests from State and local sources such as officially established State mapping advisory committees. Areas to be included in the topographic mapping program are selected after these requests have been evaluated to insure the selection of those areas where topographic mapping will provide the greatest service from a national viewpoint.

The Bureau of the Census has a continuous need for base maps and, particularly every 10th year, more detailed maps for some 250,000 enumerator districts. Mapping planned for fiscal year 1966 to produce the 1:24,000-scale coverage needed to prepare enumerator maps for the 1970 decennial census includes some 4,300 square miles, or about 45 percent of the high priority requests by the Bureau of the Census.

The Department of Defense, one of the largest users of topographic maps, has expressed an urgent need for extensive new mapping and resurveys centered about military installations and maneuver areas. Included in the mapping to be started in fiscal year 1966 are a number of projects of special interest to the Army, such as those surrounding Fort Rucker, Ala., and those in the Swift Strike area, North and South Carolina, totaling more than 3,900 square miles. Approximately 1,650 square miles of mapping in the Coulee Crest maneuver area in Washington has been expedited for completion by January 1966. Under an agreement with the Army Map Service, the preparation of special military editions of maps was eliminated by modifying the format of Survey maps, thus making a single edition adaptable for military or civilian use.

The national topographic program is being expedited by contributions through current cooperative agreements with 33 States and Puerto Rico. The individual contributions range from several thousand to over a half-million dollars per year. States whose annual contributions are $200,000 or more include Virginia, California, Texas, Pennsylvania, and New York. In aggregate, the contributions amount to approximately $2,800,000, of which more than $2 million is for standard quadrangle mapping.

Source of funds.—The total program for standard quadrangle mapping is financed from several sources as listed below:

Source	Amount available, 1964	Estimate, 1965	Estimate, 1966
Direct appropriation	$18,407,408	$18,760,000	$18,873,000
States and municipalities	2,189,782	2,128,000	2,180,000
Bureau of Reclamation	1,007,366	1,059,000	1,059,000
Other Federal agencies	171,135	85,000	50,000
Total	21,775,691	22,032,000	22,162,000

(*b*) *Map revision and maintenance*

The estimate of $2,600,000 is an increase of $140,000 consisting of—

(1) A decrease of $10,000 for the nonrecurring financing in 1965 of the States' share of increased pay costs; and

(2) An increase of $150,000 for program acceleration.

Work budgeted and programed under this subactivity includes (1) all surveys and other operations necessary to revise or improve existing 7½- or 15-minute quadrangle maps, and (2) reprinting and distributing maps to satisfy the demand.

Population growth in recent years has caused many changes in urban and suburban areas. Prudent management of our large investment in mapping requires that we maintain these maps in a usable condition. Adequate topographic map coverage is fundamental to the initial development of our natural resources, and the updated or revised versions of these maps are essential to economic development and other problems of population growth.

Need for increase.—About one-third of the funds programed for this subactivity are needed to meet the sharply increasing public demand for map maintenance, that is, reprinting and distributing map stock. Because the Geological Survey has this obligation to supply maps upon demand, funds are made available for this work before map revision surveys are programed. Reprints of map stock increased over 60 percent in 1964.

Additional funds in this subactivity are needed to match increased cooperative offerings from States that are completely mapped in the 7½-minute series and require revision surveys.

Plan of work.—The plan for this subactivity for 1966 is to reprint maps and replenish stocks as the demand requires, continue revision operations for approximately 30,000 square miles, begin revision surveys in areas supported by cooperative financing and, at the same time, attempt to satisfy the special requirements for the Bureau of the Census by supplying revised maps of metropolitan areas in advance of the 1970 census. To satisfy the census requirement approximately 330 7½-minute maps must be revised before 1970. Revision work should begin in 1966 for approximately 20 percent of these maps. Included in the revision program are 2,000 square miles in the electronic environmental test area in southern Arizona for the Department of Defense.

In 1964, revision surveys were completed for 280 maps. In 1965, it is estimated that revision surveys will be completed for approximately 300 maps.

Source of funds.—About 20 percent of the funds available for this subactivity will be from cooperative agreements with States. In 1966, it is expected that some of the larger revision projects will be financed in this way in California, Connecticut, Indiana, Kentucky, Massachusetts, Ohio, and Virginia.

Funds made available in 1964 and 1965 for map revision and maintenance, and funds expected for 1966 are as follows:

Source	Amount available, 1965	Estimate, 1965	Estimate, 1966
Direct appropriation	$2,322,693	$2,460,000	$2,600,000
States and municipalities	584,616	650,000	650,000
Total	2,907,309	3,110,000	3,250,000

The increasing number of reprints reduces the amount of funds available for actual revision operations. It is currently estimated that in 1966 approximately 30 percent of the total funds for this subactivity will be used for reprinting maps.

(c) *Small-scale and special mapping*

The estimate of $1,330,000 is an increase of $58,000 consisting of:

(1) A decrease of $2,000 for the nonrecurring financing in 1965 of the States share of increased pay costs; and

(2) An increase of $60,000 for timely completion of the National Atlas.

This subactivity includes the cartographic and printing operations to compile the various series of small-scale maps, special maps, and related products as promptly as possible after the necessary source data have become available. The principal components of this subactivity are:

(1) The National Atlas of the United States, with maps at various scales graphically presenting physical, economic, and scientific information.

(2) 1-to-250,000 scale series.

(3) International Map of the World (IMW) series at 1-to-1,000,000 scale.

(4) State map series, at 1-to-500,000 scale.

(5) Metropolitan area series, at 1-to-24,000 scale.

(6) National park series, at various scales.

(7) Intermediate scale (1-to-62,500 maps made from existing 7½-minute maps and published as 15-minute quadrangle maps).

(8) Topographic maps of Antarctica, at various scales.

Need for increase.—The increase will allow continuation of the National Atlas program, preparation of which was begun in 1962. A number of agencies, organizations, institutions, and individual scholars are participating, compiling maps and providing descriptive and bibliographic text materials for the Atlas. When completed, the Atlas will provide an accurate, composite record of the physical, historical, economic, social, and cultural features of the country to users of geographic data. An increase in funds is needed to complete the Atlas within a timespan brief enough to assure that upon publication the contents will provide the latest current information.

Plan of work.—The program for this subactivity is developed from requests by Federal and State agencies and from various indications of need throughout the country which reflect the national interest. The work is planned, within feasible limits, to fulfill these requirements.

Work will continue on the National Atlas program. Some of the Atlas maps will be available as individual sales items as they are completed; ultimate plans are for a solid binding.

The 1-to-250,000 scale series is the only series giving complete topographic coverage of the United States at one uniform scale and format; however, many of the maps were originally prepared from older map sources for reconnaissance purposes. In addition to the regular program for revising the maps of this series, it is planned to include recompilation of the reconnaissance-type maps to bring them to acceptable standards of accuracy and content.

In compliance with the international agreement reached in 1962 at Bonn, Germany, to attain complete world map coverage at one scale and format, maps of the International Map of the World series at the 1-to-1,000,000 scale will be continued in preparation. Two maps of this series, Lake Superior and Pikes Peak, are currently in progress, and four others, Mount Whitney, Blue Ridge, Quebec, and Lookout Mountain, will be placed in work in fiscal years 1965 and 1966.

Preparation of State maps at 1-to-500,000 scale in planimetric, contour, and shaded relief editions will include maps of Arkansas, Iowa, and Hawaii. In addition a revision program will be instituted for the other maps of this series. These maps are assuming increased importance as geologic base maps, index maps, and general purpose maps for State and regional planning and for administering area development projects. The shaded relief editions of State maps are particularly useful for teaching map use and explaining physiographic features. The shaded relief edition of the Utah State map was recently distributed to all the schools in the State.

Metropolitan area maps are prepared by combining several quadrangle maps of the national topographic map series covering selected cities and their adjacent areas. These maps are useful for city planning, engineering studies, and industrial development, as well as for studies of business, cultural, and social conditions on a geographical basis. A map of Colorado Springs, Colo., is planned, and revised editions of the maps of San Juan, P.R., and Washington, D.C., will be prepared.

Maps of the national park series will be programed as large-scale topographic quadrangle coverage of park areas becomes available. These maps are requested by the National Park Service for administrative and planning purposes. A revised edition is planned for the Sequoia and Kings Canyon, Calif., map, and

shaded relief editions for the present maps of Yosemite National Park, Calif., and Badlands National Monument, S. Dak.

The intermediate-scale series, consisting of maps prepared by reducing 7½-minute map materials, redrafting at 1-to-62,500 scale, and publishing in 15-minute map format, serves many civilian and military requirements. It is planned to provide maps of this series in accordance with high priority requests for use in geologic investigations, State and regional planning, and for military purposes.

Topographic maps of Antarctica are needed for surface exploration and as support for geologic investigations and other scientific studies. The Geological Survey maintains the U.S. Antarctic Map and Aerial Photography Library, and provides consultant services to all interested organizations and individuals.

Source of funds.—Funds available for this subactivity are as follows:

Source	Amount available, 1964	Estimate, 1965	Estimate, 1966
Direct appropriation	$908,938	$1,272,000	$1,330,000
States and municipalities	298	10,000	10,000
National Science Foundation	363,252	408,000	408,000
Total	1,272,488	1,690,000	1,748,000

OTHER OPERATIONS

In addition to work carried out under its regular subactivities, the Topographic Division also performs some work within its field of competence on a reimbursable basis. One of these activities is technical assistance to other nations through cooperation with such organizations as the Agency for International Development and the United Nations. This cooperation occasionally requires the services of Division personnel in foreign countries, on a reimbursable basis, in support of technical or scientific projects and the technical training of foreign nationals. The following table illustrates the scope of reimbursable operations as carried on by the Topographic Division:

Reimbursable work	Amount available, 1964	Estimate, 1965	Estimate, 1966
Cartographic operations for other Federal agencies	$81,479	$96,000	$93,000
Sale of photo copies of aerial photos, map manuscripts and other data:			
Other Federal agencies	257,854	283,000	265,000
Non-Federal agencies	171,803	170,000	170,000
International activities	60,000	60,000	60,000
Sale of personal property: Non-Federal agencies	50,388	55,000	55,000
Total	621,524	664,000	643,000

2. Geologic and Mineral Resource Surveys and Mapping

The estimate of $20,223,000 is an increase of $1,885,220, consisting of:

(*a*) Decreases of $22,000 for the nonrecurring financing in 1965 of the States share of increased pay costs, $106,000 due to program savings; and transfer in 1966 of $228,000 unobligated balance from "Salaries and expenses," Office of Minerals Exploration; and

(*b*) Increases of $2,241,220 for new and accelerated top priority geologic programs.

Specifically, the increases are for new and accelerated programs in earthquake seismology, studies that are part of the Upper Mantle project, research investigations pertaining to mineral deposits, resource surveys and mapping in wilderness-type areas, engineering geologic studies pertaining to land utilization and rock behavior, and assistance to private industry for minerals exploration.

The program on earthquake seismology responds to recommendations of the Federal Commission on Reconstruction and Development for Alaska and the National Academy of Sciences and endorsed by the President's Office of Science and Technology. This integrated program consists of four major components: (1) Montague Island fault study, (2) submarine land slides, (3) hazards to Alaskan communities, and (4) San Andreas fault studies. The investigations

to be undertaken or expanded are discussed in detail in the subactivity statement below.

The studies in the Upper Mantle project for which increases are requested include the transcontinental geophysical survey, and research in experimental geology (see below).

The increases will also provide for increased emphasis on (a) resources research in the minerals field, with special attention to silver and base metals, to radioactive materials, and to rare metals; (b) minerals surveys and evaluations of wilderness-type areas as called for in the recent Wilderness Act; and (c) engineering geologic investigations described in detail in the subactivity statement (e) below.

Beginning July 1, 1965, responsibility will be transferred to the Geological Survey for direction of the program of Federal assistance for minerals exploration by private industry, which is currently being administered by the Office of Minerals Exploration. All the functions of OME will be transferred to the "Geologic and mineral resource surveys and mapping" activity of the Survey. Of the 1966 estimate for this work $844,000 is available for loans including $228,000 carryover from 1965. A new subactivity, "Minerals exploration," for this work is described below.

Geologic investigations essential to economic growth.—The national goal for economic growth is 3 to 4 percent a year. To achieve this goal and sustain such a growth rate, the Nation must consume increasing amounts of minerals and mineral fuels and devise an ever increasing number of uses of the land itself. Geologic studies provide not only a vital key to finding new sources of minerals and mineral fuels to meet growing industrial needs, but also the basic knowledge required to develop and use the land efficiently and economically for countless purposes. Through its geologic and mineral resource surveys and mapping activity, the Geological Survey seeks the information and understanding essential for the intelligent exploration, appraisal, development, and use of these natural resources. Geologic research pursued vigorously will enable the Nation to extend its resource base both in magnitude and variety; indeed, continuance of our present resource base is dependent upon such research.

Geologic and mineral resource surveys and mapping is a long-range continuing activity designed specifically to:

(1) Yield geologic maps, in detail adequate for modern needs, of all parts of the United States, its territories, and possessions;

(2) Provide basic geologic, geophysical, and geochemical data and develop new and refined techniques essential to the increasingly difficult and crucial task of finding new mineral and mineral fuel deposits to maintain reserves necessary for our economy, national welfare, and defense;

(3) Provide a program for the discovery of the minerals reserve of the United States, its territories and possessions, by encouraging exploration for minerals, excluding organic fuels, by private industry (formerly carried out by the Office of Minerals Exploration);

(4) Provide the Federal Government with background data and resource appraisals needed in making policy decisions regarding mineral raw materials;

(5) Provide basic geologic data needed in the appriaisal and development of ground water resources, and in modern soil studies, and needed to help solve land utilization problems;

(6) Provide long-range research into basic geologic principles and processes to extend the frontier of geologic knowledge and provide basic data for future applied research programs; and

(7) Provide the general public with a better understanding of the geologic history of the many natural phenomena displayed throughout the Nation, and of the geologic processes including earthquakes, that resulted in their development.

Aggressive steps must be taken to replenish those resources that will soon be exhausted at current rates of consumption. This calls for more precise knowledge of the constitution and distribution of the materials of the earth's crust, a better understanding of the geologic processes that affect the earth's materials and an increased knowledge of the nature of the mantle that underlies the earth's crust, including those parts that underlie the oceans. The increase sought in fiscal year 1966 is urgently needed to help meet these immediate needs.

Analysis of subactivities

Subactivity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
(*a*) Economic geology	$3,457,443	$3,647,000	$3,899,000	+$252,000
(*b*) Minerals exploration	[1] 559,088	[1] 1,040,780	997,000	−43,780
(*c*) Regional geology	7,324,853	7,796,000	8,451,000	+655,000
(*d*) Experimental geology	4,834,576	5,174,000	5,874,000	+700,000
(*e*) Engineering geology	642,577	680,000	1,230,000	+550,000
Total obligations	16,818,537	18,337,780	20,451,000	2,113,220
Unobligated balance transferred from "Salaries and expenses," Office of Minerals Exploration			−228,000	−228,000
Total	[1] 16,818,537	[1] 18,337,780	20,223,000	1,885,220

[1] For comparative purposes as the obligations were appropriated to the Office of Minerals Exploration.

(*a*) *Economic geology*

The estimate of $3,899,000 is an increase of $252,000, consisting of—

(1) Decreases of $2,000 for the nonrecurring financing in 1965 of the States' share of increased pay costs, and $34,000 due to program savings; and

(2) An increase of $288,000 for program acceleration.

Need for increase.—The increased funds are needed to (*a*) improve and devise new exploration methods and tools (a Branch of Exploration Research has recently been formed to strengthen research in this field); (*b*) develop methods of appraising the magnitude of incompletely explored mineral and mineral fuel resources; (*c*) extend the compilation and analysis of data on the Nation's resources; (*d*) expand knowledge of the manner in which ore deposits are formed and localized by weathering processes; (*e*) undertake field studies of major mining districts; such as, Ray, Ariz. (copper), Questa, N. Mex. (molybdenum), and Big Indian, Utah (uranium), to define new ground favorable for exploration; (*f*) strengthen mineral reconnaissance and evaluation studies to aid economic development in Alaska and Appalachia; and (*g*) extend the silver reconnaissance and exploration program begun on a modest scale in fiscal year 1965.

Importance of work.—Work in the fields of minerals and mineral fuels over the next decade is designed to provide the base for discovery and development of the mineral supplies needed to sustain our industrial economy and allow it to continue to grow. Known reserves of many of the minerals and fuels that are the very essence of modern industry and agriculture are adequate for only a decade or two and, with demands increasing steadily, the rate of discovery and development of new supplies must steadily increase also. For silver, for example, the supply situation is approaching the crisis stage; and production and new discoveries of mercury and many other metals and minerals are not keeping pace with demand. Because most of the mineral deposits that crop out at the surface have already been found, new discoveries depend more and more on geologic knowledge and methods that define the location of concealed deposits.

In recent years, the United States has become increasingly dependent on foreign sources for both metals and petroleum and, while this trend may continue for a time, the availability of foreign sources will diminish as other nations industrialize. Moreover, the total of known world resources of many minerals is not adequate to meet growing needs for more than a decade or so. New supplies must be continually sought and developed, therefore, and we must look to domestic sources as our chief mainstay for the future. The Geological Survey's investigations in this field develop methods of exploration, establish guides useful in prospecting, and outline favorable areas for the occurrence of concealed deposits and, in these and other ways, lay the groundwork for efficient and effective exploration and development of mineral resources by industry.

Plan of work.—Investigations in economic geology encompass a broad range of subjects and include detailed geologic mapping and related field and supporting laboratory studies on: (1) base and ferrous metals, including copper in the Western States; lead, zinc, and iron in Wisconsin, Michigan, and the Southeastern States; and many other less common metals; (2) light metals and industrial minerals; such as, beryllium in Alaska, Nevada, Colorado, and Utah; phosphate in California; borates in California; and titanium, graphite, asbestos, zeolites, and quartz sand; (3) rare but strategic metals; such as selenium, germanium, rhenium, niobium. cesium, and scandium; (4) organic fuels, including oil and gas in California, Kansas, and other States; oil shale in Colorado and Wyoming; and coal in the Western States, Pennsylvania, Kentucky, and elsewhere; and (5)

radioactive materials, including uranium and thorium in several Western States. In addition, new and improved geochemical and other methods of modern field prospecting for specific mineral commodities are being developed, and increased emphasis is being placed on the compilation and analysis of data on resources of minerals and fuels and on the acceleration of work on the techniques bearing on the appraisal, discovery, and development of mineral and fuel resources. The data from the economic geology program, in addition to aiding directly in the search for new mineral deposits, provide information on the magnitude of our resources essential for national policymaking and planning related to economic development, utilization of the public lands (for example, wilderness-type areas), and national security. In addition, special studies and advisory services, required by the Office of Minerals and Solid Fuels, are also included in this subactivity.

(b) *Minerals exploration*

The estimate of $997,000 is a decrease of $43,780 from 1965. This work is currently being administered by the Office of Minerals Exploration but will be transferred to the Geological Survey July 1, 1965. The decrease consists of:

(1) A decrease of $72,000 due to program savings resulting from consolidation of the Office of Minerals Exploration with the Geological Survey; and

(2) An increase of $28,220 for an anticipated increase in exploration assistance contracts.

The estimate includes $769,000 new obligational authority and $228,000 transferred from "Salaries and expenses," Office of Minerals Exploration.

Importance of work.—As stated above, many of our essential minerals are in short supply. In recognition of this fact, the Federal Government has been providing financial assistance to private industry for exploration projects. This encouragement and assistance has been and will continue to be a vital factor in the discovery of important new sources of critical minerals.

Plan of work.—Under Public Law 85-701, the Federal Government stimulates exploration by private industry for domestic sources of selected critical minerals by contracting to pay a specified part of the cost of the authorized exploration work. Federal funds provided under a contract are repaid with interest by a royalty on production from the property. Funds available for loan in 1966 are $844, 220 as compared to $816,000 in 1965.

Under Government regulations, contracts are executed with firms and individuals for the exploration of new or unexplored sources of 35 mineral commodities. The Government contributes 50 percent (75 percent for silver)of the costs allowed as reasonable and necessary for performing the work authorized by the exploration contract. The time limit, for completion of work under most contracts, usually is less than 1 year and rarely exceeds 2 years.

Funds contributed by the Government are repaid with interest by a royalty on production from the property. If nothing is produced, there is no obligation to repay. A 5-percent royalty is paid on any production during the period the contract is in effect and, if the Government certifies that production may be possible from the property, the royalty obligation continues until the Government's contribution is repaid with interest, or for the 10-year period usually specified in the contract.

Simple interest is calculated at a rate not less than the rate which the Department would be required to pay if it borrowed from the Treasury, plus a 2-percent charge in lieu of the actual cost to the Government of administering the contract. The rate has ranged from 5¾ to 6½ percent.

Because of the higher quality of applications being received, about one out of every four processed results in a new contract. Both the number and quality of applications are expected to increase during the current year, and in fiscal year 1966, resulting in an increase in the number of contracts executed and assuring the obligation of all funds requested for exploration assistance.

(c) *Regional geology*

The estimate of $8,451,000 is an increase of $655,000 consisting of:

(1) A decrease of $19,000 for the nonrecurring financing in 1965 of the States' share of increased pay costs; and

(2) An increase of $674,000 for program acceleration.

Need for increase.—The program increase is needed to accelerate geologic and geophysical studies within the Transcontinental Geophysical Survey, to begin basic geologic, geochemical, and geophysical surveys and economic mineral evaluations of wilderness-type areas, and to begin a major program of earthquake study and analysis to implement the recommendations of the Federal Reconstruction and Development Commission for Alaska and the National Academy of Sciences Committee on the Alaskan Earthquake.

Importance of work.—Regional geologic studies are basic to any investigation that requires knowledge of the resources or processes at the surface or in the crust of the earth. In regional geology, the attack on geologic problems is through geologic and geophysical surveys. A geologic map is the foundation of geologic knowledge upon which are built the interpretations and analyses that apply the science to human problems. Yet only about 18 percent of the United States has modern geologic maps adequate for such vital needs as: resource appraisal; earthquake research; the search for new resources; engineering operations; or scientific probing of the earth such as that being attempted in the upper mantle program.

The demands for regional geologic knowledge have far outstripped the capacity of the Geological Survey and other institutions to provide it. For example, much of the wilderness system and possible additions to it are poorly known geologically; yet, evaluation of the mineral potential of these areas is now needed in a relatively short time. Modern geologic maps provide much of the information necessary for mineral evaluations of many areas.

The Alaskan earthquake of March 1964 reemphasized the serious consequences of this geologic phenomenon. Yet the earth processes that result in earthquakes are poorly known as are all the geologic events that accompany these earth shocks. The scale of major geologic features related to these processes is truly regional—the most dangerous fault in the United States is the San Andreas in California which is more than 600 miles long. A modern regional geologic study of the San Andreas is essential to understanding the geologic history of the fault, its current geologic behavior, and the geologic process that can be read in the rocks which it has displaced.

Related to major crustal events, such as earthquakes, are processes in the subcrust or upper mantle. The program of geologic map compilation and geophysical surveys, at a scale of 4 miles to the inch within the Transcontinental Geophysical Survey, began in fiscal year 1965 as part of the upper mantle program. Part of the proposed increase is for geologic compilation and reconnaissance in critical gaps in the Southeastern and Western States, and for increasing the pace of the required supplemental gravity and magnetic surveys.

Plan of work.—Because there is no substitute for a modern geologic map where geologic knowledge is required on a specific area or regional problem, regional geology subactivity is devoted to preparation of geologic maps and regional geologic studies. Regional geophysical surveys and paleontologic data are essential supports for these studies.

Regional compilations and reconnaissance will be started along the San Andreas fault and in the transcontinental geophysical survey. A special study of Montague Island will continue to take advantage of the geologic data provided by the Alaskan earthquake. Detailed geologic mapping will be started in key areas along the San Andreas as well as in wilderness-type areas where geologic knowledge is inadequate for resources appraisal. Geophysical surveys, particularly aeromagnetic and gravity studies, will be used to support the mapping where they are needed.

(*d*) *Experimental geology*

The estimate of $5,874,000 is an increase of $700,000.

Need for increase.—The program increase is needed to (1) expand experimental geological, geophysical, and geochemical studies of the earth's upper mantle and deep crust, and (2) implement the recommendations of the Federal Reconstruction and Development Commission for Alaska to initiate studies of the San Andreas fault.

The knowledge necessary for the understanding the mechanics of earthquakes is dependent upon our understanding of the nature of the earth's crust and upper mantle and the processes operating within them. This understanding can best be gained through an integration of fundamental crustal and upper mantle studies in the transcontinental geophysical survey with detailed geologic and geophysical investigations of the San Andreas fault.

Studies of the earth's upper mantle and crust, part of the upper mantle project, will include deep probings of the earth's crust and upper mantle by field geophysical techniques that include refraction seismic profiles; gravity, geomagnetic, heat flow, and electrical measurements; and laboratory investigations of rock-forming minerals at temperatures and pressures approximating those of the lower crust.

Funds will be required to expand and accelerate investigations of the San Andreas fault. We propose to initiate on the San Andreas a broad spectrum of field geophysical probings and laboratory studies in seismology, strain and deformation studies, heat flow, and behavior of rocks under elevated pressures and temperatures. These studies will be integrated with engineering and regional

geology studies in an accelerated long range program directed toward earthquake prediction.

Importance of work.—The earthquake of March 27, 1964, in Alaska, has once again highlighted the importance of fundamental studies in experimental geology aimed at increasing our knowledge of the composition and nature of the earth and our understanding of the processes going on within it. Attempts to understand and ultimately predict such destructive phenomena as earthquakes or volcanic eruptions can be fruitful only if our knowledge and understanding of the processes leading to such phenomena are clear and accurate. Such research also provides the basis for engineering studies aimed at minimizing possible damage resulting from destructive geological processes, as well as for the development of new geological and geophysical techniques and instrumentation. Fundamental studies in experimental geology span the breadth of earth sciences and provide the knowledge and understanding necessary to intelligent mineral resource development and appraisal and to the interpretation of geological observations recorded in regional and engineering geologic investigations.

Plan of work.—In experimental geology, a wide variety of studies are underway that are designed to integrate the fields of chemistry and physics with geology. These include investigations in (1) experimental mineralogy and geochemistry; (2) field geochemistry and petrology; (3) isotope geology (including geochronology and the geochemistry of various isotopes); (4) geochemical census (abundance and distribution of elements in the earth's crust); (5) crustal studies (the structure and nature of the earth's crust and upper mantle including research on earthquakes); (6) theoretical geophysics; and (7) research on chemical analytical techniques and analytical support.

(*e*) *Engineering geology*

The estimate of $1,230,000 is an increase of $550,000 consisting of:

(1) A decrease of $1,000 for the nonrecurring financing in 1965 of the States share of increased pay costs; and

(2) An increase of $551,000 for accelerated program.

Need for increase.—The increase is needed to expand and accelerate engineering geologic and geophysical studies within (1) the southeastern Alaskan coastal communities to appraise the potential hazards to these areas from future earthquakes; and (2) San Francisco, Calif. bay area to determine those engineering geologic properties of the rocks that underlie this area that are significant in predicting ground stability in event of future earthquakes; and to conduct research in geophysical methods for measuring engineering rock properties, and to undertake geologic studies to develop techniques in the application of geology to land utilization problems.

Importance of work.—Engineering geologic and geophysical studies of the southeastern Alaskan communities and the San Francisco Bay area will provide the information needed by many groups to appraise the possible effect of future earthquakes on structures and to aid in planning the efficient and safe development of urban areas. Our study of Anchorage, Alaska, prior to the Good Friday earthquake indicated that certain areas were potentially dangerous for housing developments; the results of the earthquake dramatically proved that the prediction was correct. The planned studies of the Alaskan communities and the San Francisco area are aimed at providing data similar to that obtained for Anchorage so that maximum data will be available for use in planning future development in these areas.

The behavior of rocks under natural stresses such as earthquakes or in manmade environments such as mining operations must be predicted if safe urban construction or mining practices are to be developed. Our research in engineering geophysical methods is leading to a better understanding of how rocks fail—an important step in prediction of rock behavior.

Plan of work.—In engineering geology, the geologic and geophysical data used in solving land utilization, rock behavior, and urban development problems are acquired through detailed geologic mapping and geophysical surveys supported by laboratory research. Studies will continue in 12 metropolitan areas and in 5 areas being developed for highways or flood control systems, and will be initiated in the southeastern Alaskan coastal communities and in the San Francisco Bay area in fiscal 1966 in response to recommendations of the Federal Commission on Reconstruction and Development for Alaska.

Research will also continue in development of new methods for measuring rock properties both in place and in the laboratory and in correlating these data with the geologic environment. In addition special studies to predict the occurrence of natural rock explosions and the nature and occurrence of landslides continue to be an important part of the engineering geology program.

3. Marine Geology and Hydrology

The estimate of $953,000 is an increase of $200,000 over 1965.

Major objectives of the Geological Survey's marine program are to map and define basic geologic and hydrologic conditions and resources in oceanic areas and to determine and evaluate processes that control or modify the conditions and resources. New knowledge resulting from these activities has broad applicability to development of the Nation's economy, to conservation of natural resources, to improvement of our Nation's security, and to assurance of man's future health and welfare. Specifically, it has direct importance and potential applicability to the following:

(1) The mining and petroleum industries which have interests in exploitation of the vast reserves of mineral and mineral fuels that are thought to exist on and beneath the ocean floor;

(2) Engineers who are engaged in coastal and offshore construction that requires data on foundation conditions, on sources and stability of construction materials, and on effects of earthquakes or other catastrophic events on coastal and marine structures;

(3) Industries in coastal areas which must have information on the occurrence, availability, and development of coastal water supplies, including determination of their specific chemical and physical characteristics;

(4) Communities and the recreation industry which are dependent on conservation of coastal water resources, the development and protection of beaches and other areas for development and recreation, and adequate measures for waste disposal and protection against earthquake and wave damage;

(5) Marine fishermen and farmers who are attempting to increase yields of marine biologic resources, such as oysters and lobster beds and feeding grounds for both commercial and recreation fish stocks;

(6) Defense agencies which need information concerning the properties and stability of the ocean floor in the search for and detection of enemy mines, submarines, and other submerged objects;

(7) Shipping industry and maritime agencies that need information for navigation, on harbor silting and development, and for the search for objects lost on the ocean floor;

(8) Oceanographers, other scientists, and laymen who require or desire information on discharge of fresh water and sediments to the oceans, on geochemical processes, or on other principles that apply to their specific problems or to their specific interests in knowing more about the earth on which we live and how man is changing his environment.

Need for increase.—The increase for the program is required to implement marine investigations recommended by the Federal Reconstruction and Development Commission for Alaska and the National Academy of Sciences, and endorsed by the Office of Science and Technology. Of the increase, $100,000 will be devoted to acquisition and operation of equipment aboard Geological Survey vessels engaged in continuing studies of submarine landslides in Prince William Sound, Alaska, in order to gain an understanding of the origin and mechanics of the catastrophic local waves and surges they generated. The remaining $100,000 will be used to initiate nearshore investigations of the California coast, including San Francisco Bay, to delineate major faults on the Continental Shelf, to determine areas of potential seismic submarine landslides, and to identify portions of the shore subject to greatest damage from seawaves that result from movement of the faults or landslides.

Plan of work.—Emphasis of the marine program will continue to be placed on current investigations of the Atlantic Continental Shelf and slope, a 5-year joint effort with the Woods Hole Oceanographic Institution which is supported by the Geological Survey. These investigations are now in their third year and are producing numerous new and valuable contributions to knowledge of the area. Modest support of other current activities will continue. These activities include compilation and evaluation of data collected by the petroleum industry within the Gulf of Mexico, investigations of bays and the Continental Shelf and slope along the west coast of the United States, and special studies of samples and data collected from oceanic areas by the Coast and Geodetic Survey and other agencies.

The earthquake studies in Prince William Sound, Alaska, and those to be initiated along the California coast are complementary and involve active cooperation and coordination with other agencies and institutions. Knowledge of effects of earthquakes such as the Alaska Good Friday earthquake is a necessary prelude to improved prediction of potential earthquake effects along the California coast; field equipment utilized aboard the Geological Survey's vessel to study sea-floor

conditions of the Alaska sounds during summer will be transferred to vessels of cooperating groups to study comparable sea-floor conditions off California during the fall, winter, and spring; laboratory analyses of samples and data at the Survey's Menlo Park Field Center will permit efficient integration of results from both areas. Cooperative and contract arrangements will be negotiated with other agencies of the Department of the Interior, the Coast and Geodetic Survey, and with Stanford University, various branches of the University of California, and others for field studies of nearshore areas along the California coast.

4. Water Resources Investigations

The estimate of $21,863,000 is an increase of $891,000 consisting of:

(*a*) A decrease of $429,870 for program savings and other nonrecurring items; and

(*b*) Program increases of $1,320,870.

The task of planning for the optimum development of our water resources for the long-term benefit of all citizens becomes greater each year. Competition for water in the United States, as a consequence of the growth in demand and the prospect that demand will continue to increase rapidly, has heightened national concern over every aspect of water development and use. In the past several years, an unprecedented number of plans relating to water—water supplies, river basin development, pollution, floods, saline water conversion, weather modification, to mention a few—have been before the Congress and the Nation.

Essential to the success of plans for development and use of water is adequate basic information about water as a resource. Of central concern are current plans to carry out comprehensive river basin planning. Facts concerning the supply distribution, variability, and chemical and physical quality of surface and ground waters are fundamental to the framework of water knowledge upon which all water projects should be based. Such facts make possible interpretive studies of areas of existing or potential water problems and the evaluation of alternatives for water development. Important economies in both human resources and dollars can be achieved and costly mistakes can be avoided by basing development on adequate facts.

It is the Geological Survey's responsibility to describe systematically the Nation's water resources systems—to obtain water facts. The Survey's long-range plan calls for obtaining basic descriptions of water resources and monitoring these resources to provide a continuing appraisal of them as extensively and intensively as the need for information requires. Basic descriptions of water resources include the collection, compilation, evaluation, and synthesis of water facts and the use of these facts to define natural and man-modified hydrologic systems. These form the basis for historical knowledge of stream behavior, the interpretation of the cause and effect relations of water in its environment, and thus provide the Nation's water users and managers with a basis for decisions between possible choices in the development and use of water.

Impressive progress has been made by the Geological Survey in collecting water facts, appraising and describing our Nation's water resources, and in discovering some of the fundamental principles of the occurrence of water on our planet. Facts concerning the flow of streams, water level fluctuation, and the quality of surface and ground waters are continuously being obtained at over 10,000 sites in the United States. Each year tens of thousands of pages of reports on a wide variety of water topics are released for public use. In spite of the Survey's record of accomplishments, the rate of accumulation of water information has lagged with respect to the need for such information. In keeping with the goals of its long-range program, the 1966 program of the Survey will respond to the increasing demand for water information upon which to base wise and economic water development and use.

Analysis by subactivities

Subactivity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
(*a*) Federal program	$8,520,947	$9,481,591	$10,257,461	+$775,870
(*b*) Federal-State program	9,877,635	11,420,000	11,550,000	+130,000
(*c*) Employee compensation payments	35,445	70,409	55,539	−14,870
Total	18,434,027	20,972,000	21,863,000	+891,000

(a) *Federal program*

The estimate of $10,257,461 is an increase of $775,870 consisting of—

(1) Decreases of $90,000 for Montana flood studies for which supplemental funds were appropriated in 1965, and $15,000 for program savings; and

(2) An increase of $880,870 to expand the program for obtaining water information and for increasing man's knowledge of water as it occurs in its earth environment, in keeping with the goals of the long-range plan of the Geological Survey.

The Federal program consists of investigations in which the national interest is dominant. Broad coverage in the collection of basic water data, research in hydraulic and hydrologic principles, areal investigations covering several States, and type studies of recurring water problems receive special attention. This program complements the cooperative programs which are financed in part by State and local governments.

Need for increase.—New or enlarged responsibilities and commitments in water data acquisition activities and background hydrology in support of comprehensive river basin planning, and areas of critical deficiencies in hydrologic research will receive special attention. Specifically, increases in 1966 will be directed toward the following:

(1) Coordination of Federal activities in the collection of water data: Bureau of the Budget Circular No. A–67, issued August 28, 1964, prescribes guidelines for coordination of Federal activities in acquiring water data from streams, lakes, reservoirs, estuaries, and ground waters. It assigns to the Department of the Interior leadership in the coordination of water data acquisition activities and the responsibility, in collaboration with other departments, for the design and operation of a national network for acquiring water data.

The Department of the Interior has outlined four basic elements for the achievement of the objectives sought by Circular A–67: Preparation of a general plan for an adequate national water-data network; establishment of a Federal Advisory Committee on Water Data in collaboration with Federal agencies concerned; establishment of an Advisory Committee on Water Data for Public Use in collaboration with non-Federal agencies concerned; and establishment of a Water Data Coordination Office.

With respect to implementation of Circular A–67, the Geological Survey has the following responsibilities:

Operation of the national network for water data.

Provision for the necessary staff required by the Federal Advisory Committee on Water Data in carrying out its responsibilities.

Provision for the staff help required by the Advisory Committee on Water Data for Public Use of which the Director of the Geological Survey is the Chairman.

Establishment within the Geological Survey of the Water Data Coordination Office. The Office will maintain a central catalog of information on national network and specialized water data and of Federal activities being planned or conducted to acquire such data. The catalog will include information on kinds of data being collected, where they are being collected, responsible agency, and the availability of the data.

The Geological Survey has initiated its administrative responsibilities with respect to Bureau of the Budget Circular No. A–67. These administrative responsibilities will increase in 1966.

Because the circular was not issued until August, there has not been sufficient time to determine the effect it will have on the data-collection program of the Survey. Meetings with other Federal agencies may develop needs for work beyond that planned in this budget.

(2) Basinwide water resource studies: National needs in comprehensive river basin planning efforts require appraisals of the water resources of river basins. These studies will emphasize the definition of the system of water occurrence and movement within the basin as a basis for the prediction of the effects of changes and, hence, as a guide to planning and management. The desirability of having such studies carried out in advance of planning studies by the action agencies lends urgency to the Survey's effort. In addition to initiating background hydrologic studies in two or three basins in 1966, the Survey will expand its studies in the Puget Sound and Willamette River Basins in accordance with interdepartmentally coordinated plans.

(3) Fundamental hydrologic principles and techniques: The Geological Survey's program of research aimed at increasing man's knowledge of water as it occurs in its earth environment is addressed to the following practical problems:

Supply and demand problems. Studies are aimed at increasing our ability to predict water quantities available at any particular location to meet a prospective demand.

Water management principles and techniques. Example: Analysis of alternative systems for coping with variable supply in each area—impoundment, combining ground water and surface water, recharge-pumping systems, etc.

Controls on water utility. Example: How increasing water use alters patterns of surface and ground waters.

Instability and changing aspects of landscape and rivers. Example: Studies of the effect of river regulation on downstream shape, size, and stability of river channels.

Problems of floods and droughts. Example: How can the frequency and intensity of floods be estimated from climatological and physiographic data.

Techniques for water exploration, water measurement, and water study. Research seeks better methods for measurement of streams, ground water, sediment transport, and water chemistry; better methods for recording and processing hydrologic data and for putting them in usable form; and increase in the application of analog and digital computers to solve complex water problems.

Within the above framework, the Geological Survey will expand its research in 1966 in two specific areas that have been singled out by the Federal Council for Science and Technology as requiring a high order of priority. They are:

Ground water-surface water relationships. The steadily increasing demand on all water resources is resulting in great numbers of new water development projects that alter the natural or preexisting relationships between ground water and surface water systems. Good water management planning must take account of these changing relationships in order that a new scheme of development may not have an adverse effect on an existing one. A typical problem results from drilling wells near a river channel with the result that part of the pumped water is supplied by induced infiltration from the river. Examples of studies to be pursued in fiscal year 1966: Ground water-surface water relationships in typical environments to further understanding required to predict the changes that may result from alternative types of water development action, flow in unsaturated soil zones, factors which determine what areas are suitable for recharge with floodwaters and waste waters, and development of methods for predicting response of ground water systems to increased use and to impoundment of associated surface waters.

Chemical relations within ground water bodies. Increasing demands on ground water supplies, disposal of waste water in deep wells, ponds, and irrigation systems, and use of nuclear devices in engineering developments, pose serious potential problems in ground water quality. Research is directed to understanding the chemical, physical, and biological reactions of water components in the saturated and unsaturated zones. Examples of work to be pursued in fiscal year 1966: The effects of surface and underground waste disposal on qualities of ground water supplies, geochemical sources of organic and anaerobic reactions in ground waters, geochemical studies of possible anaerobic sources of mine acid, and studies of travel and persistence of synthetic organics, such as pesticides, in ground water systems.

(4) International Hydrologic Decade: The water studies and basic data activities during the International Hydrologic Decade, in line with recommendations of the National Academy of Sciences-National Research Council and with plans developed by some 57 countries, coincide in general with domestic priorities of the United States and of the Geological Survey. President Johnson, in a public statement, recently endorsed the purposes of the decade and declared that the United States will participate wholeheartedly. In the initial stage of the program certain bench mark hydrological sites and other stations will be operated as "decade stations." Water inventory studies will be made in relation to specific water problems. Other studies will concern time trends in water supply, influences of urban development, development and evolution of stream channels, and overland flow—all in accord with recommendations of intergovernmental conferences.

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(5) Education and training: This program covers graduate and inservice training of Survey engineers and scientists in hydrology, financial support to selected graduate students for research work in hydrology and related sciences, assistance to universities in initiating or improving hydrologic training, and a 1-year on-the-job training program for new professional employees. This portion of the program is aimed toward improving hydrologic education and increasing the supply of trained hydrologists.

Plan of work.—To provide that fund of basic information which serves as the fundamental framework of water knowledge upon which water resources planning, development, and use depends, the Geological Survey will continue to collect, compute, and interpret data on streamflow, ground water, and the chemical and physical characteristics of both surface and ground water throughout the United States. It will appraise and evaluate available waters in river basins, regions, and ground water provinces, including consideration of water requirements for industrial, domestic, and agricultural purposes. The Survey will conduct research to discover fundamental principles of hydraulics, hydrology, and related fields of science and to improve the techniques for water exploration, water measurement, and water study. It will publish the data it collects and the results of its investigations.

(*b*) *Federal-State program*

The estimate of $11,550,000 is an increase of $130,000 consisting of—

(1) Decreases of $260,000 for the nonrecurring financing in 1965 of the States share of increased pay costs, and $50,000 due to program savings (Federal share) resulting from consolidation of field offices; and

(2) An increase of $440,000 to match an anticipated increase in State offerings for cooperative water resources investigations, especially basic data collection and analytical and interpretive studies.

Appraising the Nation's water resources is a large task. Because it is large, and because need for water information extends through all levels of government, it is advantageous to both the Federal Government and the States to share this task to the greatest extent possible consistent with their common interests and responsibilities. The size and scope of the cooperative program clearly reflects the interest of State and local agencies in being "partners" in this nationwide water resources appraisal task. All of the States plus American Samoa, Guam, Puerto Rico, the Virgin Islands, and the District of Columbia share in water resources investigations through financial cooperation with the Geological Survey. Over 300 individual State and local agencies participate. Federal-State cooperation began in 1895 and since that time Federal funds have been available annually for this purpose. Since 1929, the appropriation language has required that the Survey's share not exceed one-half the total cost of investigations.

Need for increase.—Plans for cooperative investigations are formulated at the local level, with cooperating officials and field representatives of the Survey working together to develop programs tailored to fit local needs and, at the same time, to contribute to the national need for a comprehensive appraisal of water resources. Discussions with cooperators reveal a need for substantial increases in many State and local cooperative programs; largely basic data collection and analytical and interpretive studies. The requested increase in funds to support this activity is based on estimates by cooperating agencies of increases in contributions requiring matching by the Survey. Among the kinds of work most in need of expansion, as shown by requests from cooperators, are: Definition of the extent and frequency of flooding in urban areas, chemical quality and sediment load of streams, streamflow records at critical locations, studies of flood characteristics of small streams—urgently needed as a planning aid in highway design and for other purposes, appraisals of ground water supplies, investigation of possibilities of artificially recharging ground water aquifers from surface water supplies, studies of the interrelationship of ground and surface waters to estimate the effects of water development on overall supplies, and studies of low-flow characteristics of streams as an aid in planning optimum development of surface water supplies.

Plan of work.—Much of the work done in the Federal-State program is to inventory and describe the quantity and quality of water resources of specific areas such as States, counties, cities, and particularly water problem areas. In addition the program includes a variety of interpretive studies. Examples are: Definition of the extent and frequency of flooding in urban areas, studies of flood characteristics of small streams, appraisals of ground water supplies, investigations of artificial recharge of ground water aquifers from surface supplies,

studies of interrelationship of ground and surface waters to estimate the effects of water development on overall supplies, studies of the chemical quality of both surface and ground waters in areas where contamination exists or threatens, salt water encroachment into ground water supplies, and salinity conditions in a stream basin. These studies, and many more in the Federal-State program although linked closely to local water problems, are of substantial national, as well as local, interest because they yield information that has applicability to similar problems elsewhere. More importantly, they comprise segments of the regional or national picture.

(c) *Employee compensation payments*

The estimate of $55,539 is a decrease of $14,870 from 1965. This provides for the Geological Survey payment to the Bureau of Employees' Compensation to cover payments made during fiscal year 1964 on account of Survey employees injured since December 1, 1960 (Public Law 86–767, sec. 209).

5. Soil and Moisture Conservation

The estimate of $198,000 is the same as for 1965.

Plan of work.—The Survey's program consists of two parts: (1) evaluation of specific sites as possible locations for water supply, and (2) research in arid-lands hydrology; such as, erosion and sedimentation principles, stability of river channels, effects of land-treatment measures, and relations between rainfall, runoff, ground water, sediment transport, and other hydrologic factors. During 1966, both parts of the program will continue at the current level. Some current projects will be completed during 1966; some will be expanded to increase the value of the final results; and several new studies will be initiated.

6. Conservation of Lands and Minerals

Analysis by subactivities

Subactivity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
(a) Supervising oil and gas leases	$2,264,974	$2,417,000	$2,478,000	+$61,000
(b) Supervising mining leases	549,993	583,000	583,000	
(c) Mineral classification	929,988	1,007,000	1,007,000	
(d) Waterpower classification	279,996	313,000	313,000	
(e) Connally Act compliance	375,995	397,000	198,000	−199,000
Total	4,400,946	4,717,000	4,579,000	−138,000

(a) *Supervising oil and gas leases*

The estimate of $2,478,000 is an increase of $61,000 for supervision of increasing exploration and development operations.

Need for increase.—To provide for still-further need of overwater transport to the increasing number of Continental Shelf leases and wells; for increased programing and utilization of the electronic data processing (EDP) equipment to bring royalty accounting to a current status; to provide additional petroleum engineers and supporting services for the steadily increasing exploration and development operations. The increase requested will permit the engineering and accounting work force to more nearly keep abreast with the workload and supervision required in the area of advanced primary- and secondary-recovery techniques and processes, the prevention of waste, and the determination of royalties due the United States.

Plan of work

	Estimate, 1964	Estimate, 1965	Estimate, 1966
Value of oil and gas produced	$1,319,000,000	$1,401,000,000	$1,490,000,000
Royalty accruals	$189,500,000	$202,000,000	$215,500,000
Available funds for supervision (including funds transferred from Navy)	$2,320,800	$2,460,300	$2,521,300
Average employment	245	261	264

Supervising operations and enforcing the operating regulations pertaining to oil and gas leases issued under the various mineral leasing acts is a continuing subactivity. The work involves supervision of exploration, development, and production of oil and gas on Federal and most Indian lands in the United States, and the determination and maintenance of an accurate account of the production and of the royalties due and, when appropriate, taking such royalties-in-kind and disposing of them pursuant to applicable laws and regulations.

Current developments pertaining to oil and gas potentials of the Outer Continental Shelf areas of the United States continue to have a significant bearing on the actual and anticipated future workloads of this subactivity. The interest previously manifested in new areas off the Atlantic and Pacific coasts has been sustained.

Sixteen permits have been issued for geophysical surveying of various areas of the Outer Continental Shelf of the Atlantic Ocean ranging from Florida to Rhode Island and extending seaward 150 miles or more.

Similar work under approved permits in the Pacific Ocean has continued in areas off Oregon, Washington, and California. These activities portend a substantial and gradual increase in the workload. A lease sale of areas off Oregon and Washington is planned for October 1964.

Transportation to offshore platforms remains a difficult phase of properly supervising Outer Continental Shelf development operations. Offshore platforms may be reached by boat, floatplane, or by helicopter. From the standpoint of efficiency and time saved, the helicopter is the best method. During the current year, the Survey is making increased use of helicopter charters and is substantially reducing its acceptance of free transportation offered by the various operating companies. Because of the high cost of boats and helicopters, the Survey has not purchased and operated such equipment in Outer Continental Shelf operations. Therefore, it is expected that a still-further increase in the use of chartered helicopters will be necessary during the budget year 1966.

The decision of the Supreme Court on December 12, 1960, established 3 nautical miles seaward of the coastline as the boundary of the States of Louisiana, Alabama, and Mississippi. The decision, however, did not establish the location of the coastline. The six-man committee, composed of three members appointed by Louisiana and three members appointed by the Federal Government, with a charter to resolve areas of disagreement as to the locations of the coastline, has completed its investigation and submitted its report. Unfortunately, there still remain areas of disagreement, particularly with reference to point-to-point delineation of embayments. There may be some progress in 1965. The final decision will affect the ownership of a goodly portion of the submerged lands. It should be noted that, if this dispute is settled in favor of the U.S. Government, all wells and leases lying seaward of a line 3 nautical miles from the coastline will become the sole responsibility of the Federal Government and will add substantially to the workload of supervisory functions of the Survey. Another important phase of the ownership dispute is the sum of approximately $700 million being held in escrow by the Federal Government, pending the outcome of the dispute.

On June 30, 1964, there were 887 Outer Continental Shelf leases under Federal supervision on which there were 3,891 oil and gas wells, 2 salt and 25 sulfur wells, completed or drilling off the coasts of Florida, Louisiana, and Texas. Production from these wells during fiscal year 1964 is estimated to have been: 114 million barrels of oil and condensate; 567 billion cubic feet of gas; 584,000 long tons of sulfur; and 216,000 tons of salt, all off the cost of Louisiana.

Application of the electronic data computer to royalty accounting is increasing rapidly and is approximately according to plan. The transition from annual royalty accounting to automated royalty accounting by EDP is approximately 40 percent completed. If the transition continues according to plan, it will be approximately 80 percent completed by the close of fiscal 1965 and virtually completed in 1966. As conversion to EDP continues, the workload of associated postaudit of accounts function will increase. Competent accountants will be shifted from manual royalty accounting to postauditing of royalty accounts.

As the number of new discoveries and the rate of making new substantial discoveries diminishes, it is increasingly important that we continue to obtain the optimum recovery of petroleum from those reservoirs already discovered. The Survey exercises constant vigilance to see that such new techniques as air drilling, sand fracing, pressure acidizing, and multiple completions are applied to primary recovery of petroleum from Federal and Indian leases, and that such accepted secondary recovery methods as waterflooding, repressuring, combustion in situ,

or miscible fluid drive are utilized wherever they are required. The complete and precise engineering work necessarily precedent to the application of any of these techniques becomes more complex each year and continues to require more and more time of the Survey's supervisory and engineering staff. Technically correct well spacing for maximum recovery in new areas or zones is also becoming a complex and time-consuming problem.

In practically every session of Congress, new amendments and supplements to the mineral-leasing laws are enacted with consenquent new regulations. Other changes in the regulations also occur each year. The result is that the complexity of and responsibility for administrative, regulatory, and engineering supervision substantially increase each year.

(*b*) *Supervising mining leases*

The estimate of $583,000 is the same as for 1965.

Plan of work

	Actual, 1963	Actual, 1964	Estimate, 1965	Estimate, 1966
Value of minerals produced	$168,494,000	$193,212,000	$211,000,000	$230,000,000
Royalty accruals	$8,374,000	$9,449,000	$10,000,000	$10,500,000
Available funds for supervision	$525,000	$550,000	$583,000	$583,000
Average employment	39	40	41	41

This is a continuing subactivity responsible for the enforcement of the operating regulations under the various mineral leasing acts governing the exploration, development, and production of mineral deposits from leases on Federal and Indian lands in the United States. This function is conducted in such a manner as to best serve the interests of conservation of the resources. The responsibilities include the maintenance of an accounting record of the minerals produced, the determination of the royalty liabilities, and the collection of lease rentals and royalties.

The work includes:

(1) The assembly of data from Federal and Indian lands under lease or permit being prospected for coal, potassium, phosphate, sodium, uranium, manganese, fluorspar, mica, lead, zinc, iron, copper, etc.

(2) The assembly of data on known and possible reserves in areas being mined

(3) The assembly of data on ore reserves of quality too low to merit beneficiation by present techniques, but which may be made marketable through research and improved beneficiation processes.

(4) Approval of mine development plans and supervision and regulation of development and production operations.

(5) Attention to protective methods for workmen exposed to radiation or other mining hazards.

The workload of this subactivity is a continuing responsibility and must be pursued with vigilance. Exploration for minerals (coal, copper, stone, and iron) on Indian lands is expanding at an accelerated rate. Also, there is increased interest in coal for thermal power and petrochemicals in Arizona and New Mexico and for thermal power in Colorado, Montana, and Utah, which will substantially increase the supervisory workload.

During the budget year, the Survey proposes to continue its examination program by making frequent inspections of all mining operations to effectively minimize mine hazards.

(*c*) *Mineral classification*

The estimate of $1,007,000 is the same as for 1965.

Plan of work.—This is a continuing subactivity responsible for classifying the Federal land as to mineral character for leasable minerals, and for recommending the restoration of such land from existing withdrawals after adequate geologic mapping and classification.

The primary objectives are:

(1) Geologic mapping and investigation to determine the quality, thickness, and depth of any leasable minerals in or near areas of public lands included in withdrawals and in areas of potential values for leasable minerals.

(2) The determination, from geological data and other evidence, of the actual or probable presence of mineral deposits of value in specific tracts or parcels of public land anywhere in the United States.

(3) The protection of the mineral values in such tracts or parcels by prevention, through timely notice or classification, from disposal under nonmineral land laws.

(4) The prompt referral to the administrative and supervising agencies involved, of the geologic determinations and counsel required to effectively discharge their responsibilities.

Under the mineral leasing laws, determination and definition of the "known geologic structures" of producing oil and gas fields are the basis for differentiating between lands subject to lease by application and those subject to lease by competitive bidding. For each lease application the Survey determines whether the land sought is within the known geologic structure of a producing field. The Survey, as required by law, reports to the Bureau of Land Management all discoveries of oil and gas under application-type leases and discoveries of new oil and gas fields, or deposits, for their effect on rental and royalty liabilities. Reports to the Bureau of Land Management are also made on the occurrence of other leasable minerals: coal, oil shale, phosphate, potash, sodium, sulphur, and asphaltic minerals. These reports involve State selections, forest exchanges, mineral permits and leases, nonmineral entries and lands under the jurisdiction of other Government bureaus and agencies.

Expansion of industrialization in the United States, particularly in many of the Western States, is resulting in an increasing demand for land and mineral resources. This demand has stimulated the search for and development of leasable minerals on Federal and Indian lands. Mineral land classification is an essential function in the administration of the mineral leasing laws which apply to Federal lands. The timely performance of this function is of particular importance if this Nation is to derive optimum benefits from the conservation, development, and production of its mineral resources.

Substantial increases in the workload in 1965 and the budget year 1966 are assured by factors already evident, such as:

(1) Increased number of patent cases.

(2) Increased Forest Service, Health, Education, and Welfare, General Services Administration, and Bureau of Indian Affairs requests for mineral reports.

(3) Increased State indemnity selections and exchanges.

(4) Increased participation in the Bureau of Land Management planning for resource conservation management areas.

(5) Increased submittal of completed mapping projects for publication.

Following is a résumé of the work planned for 1966:

(1) Prepare and revise maps showing the current status of development of about 520 producing oil and gas fields in 17 Western States where Federal lands are relatively abundant. Additional geologic mapping will be required in the Rocky Mountain and Midcontinent States.

(2) Continue the preparation and revision of maps showing mineral occurrences in public land States to aid in classifying the lands as to their mineral content.

(3) Continue geological studies of surface and subsurface features on lands involving leasable minerals in Alaska, Arizona, California, Colorado, Florida, Idaho, Kansas, Louisiana, Mississippi, Montana, Nevada, New Mexico, North Dakota, Oregon, Oklahoma, Utah, and Wyoming.

(4) Continue geologic mapping of withdrawn lands as a means of expediting classification for minerals. Nearly 40 million acres are withdrawn awaiting mineral classification. Systematic topographic mapping and geologic investigation and mapping are prerequisites to classification of mineral land and its elimination from classification and withdrawals where appropriate. Approximately 4 million acres formerly included in withdrawals were classified during fiscal year 1964 for coal, potash, and phosphate with appropriate notification to the Bureau of Land Management. The accelerated program of geologic mapping in aid of mineral classification, which commenced July 1, 1960, is proceeding on schedule. During the current year 36 geologists are engaged in mapping about 1,500 square miles in Montana, Idaho, New Mexico, California, Utah, Colorado, Oregon, and Wyoming in the aid of classification.

(d) Waterpower classification

The estimate of $313,000 is the same as for 1965.

Plan of work.—This is a continuing subactivity. The objectives are the location, investigation, and evaluation of prospective waterpower and water storage sites on public lands, and the classification of the lands in order to protect the Government's interest in such sites. Classification formally identifies those lands that have waterpower or storage potentials and establishes controls over their

disposition. Lands so classified may be selected and used for other purposes until they are needed for a water or power development. These objectives are reached through field investigations to gather the basic data and related information needed to locate and evaluate prospective waterpower and storage sites on the public lands and through subsequent office studies in which the basic data are analyzed and final reports are prepared. The reports provide the basis for scientific classification of lands with regard to their power and storage values. Maps and reports prepared during these investigations bring potential waterpower and storage sites to the attention of the public and are extensively used by industry and State and Federal agencies in the preliminary planning of proposed developments. They are of particular value to the Bureau of Land Management and the Federal Power Commission in fulfilling their responsibilities in the administration of the public lands.

The ever-increasing demand for water, and the need for its conservation through storage for optimum use, emphasize the need for the search for and classification of potential storage sites, even those of comparatively small capacity. Another facet in the classification of waterpower resources is the possible use of pumped storage for meeting peakload demands and a search is being carried on for sites where such type of development may be practicable.

The large unexplored waterpower potential in Alaska requires extensive field surveys and investigations for proper evaluation. These should be carried on at an expeditious rate in order that the information will be available for use in effectively selecting and planning projects that will be most beneficial to the development of the State. Also, the areas valuable for waterpower development should be identified and protected by classification of the lands affected as soon as possible in order to prevent their selection for speculative purposes. The survey and investigation of waterpower sites in Alaska is much more difficult and expensive than in the conterminous States due to unfavorable terrain, climatic conditions, and inaccessibility.

An important continuing objective of the Branch, begun in 1955, is the systematic review and reappraisal of all land classifications for waterpower and storage purposes. Lands previously classified that, on the basis of present information, do not have power value, or have insufficient power value to justify being continued in a classified status, are recommended for elimination from classifications. There are approximately 7 million acres classified or withdrawn for waterpower and storage sites, and about 1¼ million acres of this land have been reviewed since 1955.

The comprehensive report by the Senate select committee (Kerr committee), "Water Resources Activities in the United States," emphasized the need for the investigation, evaluation, and inventorying of all possible water development sites in order that the most effective plans can be made for the fullest possible utilization of the Nation's water resources. The Geological Survey has been engaged in a continuing program with these same objectives since 1909 in connection with its authority to classify the public lands for waterpower and water storage values.

Except for Alaska, most of the sites on the Nation's public land have been identified, investigated, and classified. Much work remains to be done, however, in refining these classifications to reduce the land affected to a minimum.

(e) Connally Act compliance

The estimate of $198,000, a decrease of $199,000, will be used to phase out, by June 30, 1966, operations of the Branch of Connally Act Compliance, which administered the Connally Act of February 22, 1935. The act was designed to assist certain oil-producing States through Federal policing of the interstate shipment of oil produced in violation of State oil and gas proration laws.

The Connally Act was applicable wherever State laws limit the rate of production and prescribed conditions for producing and handling the oil. Due to the small size of the Branch, most of its activity had been limited to 106 counties of Texas, all of Louisiana, and to Lea, Chaves, Eddy, and San Juan Counties in New Mexico.

The Branch occasionally strove to enforce provisions of the act in other States conveniently accessible from its offices in Texas and Louisiana and tried to extend such regulatory activity to other farther removed oil-producing States as well.

The following table shows some of the facets of the enforcement activities during the past 5 fiscal years:

	1960	1961	1962	1963	1964
Fields visited	479	739	1,518	3,820	3,974
Leases visited, checked, inspected, or gaged	7,879	8,671	5,515	4,757	22,176
Field interviews	1,551	1,189	1,392	1,510	2,262
Total fines paid	$52,900	$53,800	$8,650	$54,600	$64,100
Cases involved	7	11	13	24	22
Violations detected	12	29	35	74	25
Funds available	$208,978	$221,951	$228,994	$311,933	$375,995

7. General Administration

The estimate of $1,957,000 is an increase of $43,000, consisting of—

(*a*) A decrease of $3,000 due to program savings resulting from consolidation of the Office of Minerals Exploration with the Geological Survey; and

(*b*) A program increase of $46,000.

Need for increase.—Increased funds are requested to provide for executive direction and administrative support for the Bureau's $110 million program ($73 million in the direct appropriation). This increase will provide for that portion of the normal operating expenses necessitated by enlarged substantive programs of the Survey.

Plan of work.—This activity provides for the executive direction and overall management of the Geological Survey, as well as such essential services as organization and procedures, systems development, manpower utilization, budgeting accounting, voucher examination, internal audit, payroll, personnel, purchasing, property control, mail, and messenger. It is financed from funds appropriated directly and by an assessment against reimbursements from other Federal agencies and certain nongovernmental sources.

A comparison of funds for executive direction and administration, relative to the entire program of the Survey follows:

	Amount available 1964	Amount available 1965	Estimate, 1966	Increase (+) or decrease (−)
Direct appropriation	$1,808,794	$1,914,000	$1,957,000	+$43,000
Assessment against reimbursable programs	681,078	789,000	789,000	
Total general administration (obligations)	2,489,872	2,703,000	2,746,000	+43,000
Total Survey program (obligations, excluding special-purpose buildings activity)	96,271,098	106,225,780	109,731,000	+3,505,220
Ratio of general administration to total (percent)	2.59	2.54	2.50	

8. Special-Purpose Buildings

The estimate of $250,000 is $750,000 less than 1965.

Development of headquarter facilities for four field centers has been underway for over a decade. Much benefit accrues to a scientific organization if its men are headquartered at central locations embodying complete laboratory and library facilities. Ready exchange of ideas essential to scientific work is accelerated, and more technical and administrative support can be provided at less cost.

Menlo Park, Calif., and Denver, Colo., are now field centers for the Pacific and the Rocky Mountain areas, each with laboratory, library, and supporting services completed or planned. The eastern area field center is combined with the central headquarters at Washington for greatest efficiency. The location of the midcontinent field center has not yet been selected.

Funds requested below are to continue the development of the Denver Field Center in keeping with the original, now proven concept.

Analysis by projects

Project	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
(a) Special facilities, Denver Field Center			$250,000	+$250,000
(b) Nuclear Research Laboratory, Denver Field Center	$18,870	$1,000,000		−1,000,000
(c) Preliminary design of a Geological Survey building in Washington, D.C.	100,000			
Total obligations	118,870	1,000,000	250,000	−750,000

(a) *Special facilities, Denver Field Center*

The estimate of $250,000 provides for the design of special facilities at the Denver Federal Center.

During the last 3 years, lack of sufficient space at the Denver Federal Center has necessitated the removal of survey units from the Center to leased space several miles away, no satisfactory leasable space being available in the immediate vicinity. The leased facilities are housing at the present time 81 Survey employees. In addition to the advantages to be gained by bringing these personnel back into the Federal Center, it is necessary to begin preparations for the expanded scientific and supporting activities that the Geological Survey will undertake during the forthcoming years, and which are outlined in the Survey's long-range plan.

In order to provide laboratory and office space for the current and planned program, including the return to the Center of operations now in leased space, a new building is proposed for construction adjacent to presently occupied Building No. 25. An analysis of overall needs shows that this building should provide about 190,000 square feet (gross) of area. Buildings' representatives of General Services Administration have been consulted and it is their advice that cost per square foot will be approximately $25, or a total construction cost of an estimated $4,750,000. The requested $250,000 will provide for architectural and engineering design, with construction to begin in 1967. The construction cost estimates should be increased by $40,000 if fallout protection facilities are to be included.

Central headquarters buildings, Washington.—Upon receipt of instructions from the Director of the Bureau of the Budget to the Secretary of the Interior to proceed, steps were taken to carry out the preliminary studies provided for in the appropriation for fiscal year 1964 ($100,000). An architectural firm was engaged by the General Services Administration and it has initiated a careful analysis of the diverse activities and needs of the various divisions of the Geological Survey. This information is now being studied and will be combined into a unified plan embodying office and laboratory space to fit the Survey's unique needs.

Simultaneously, the same firm is making a study of six building sites in the area. The six sites under study were selected by a group representing the Department of the Interior, General Services Administration, National Capital Planning Commission, and National Capital Regional Planning Council.

Nuclear research laboratory.—Design work is very near completion on the laboratory building which will be utilized for research in isotope geology and hydrology, involving radiation-emitting equipment and materials as investigative tools.

The design work has involved long and careful study so that the building will adequately fill Survey needs and at the same time insure maximum safety and economy of construction.

It is anticipated that invitations to bid on the construction contract can be issued early in 1965 and that construction will require about 1 year.

Itemization of Estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$96,389,968	$107,225,780	$109,981,000	+$2,755,220
Unobligated balance available, start of year	−400,000	−400,000	−400,000	
Advances and reimbursements from:				
Other accounts	−16,896,401	−19,885,000	−19,206,000	+679,000
Non-Federal sources	−15,583,293	−16,957,000	−17,721,000	−764,000
Comparative transfers from "Salaries and expenses," Office of Minerals Exploration	−567,088	−1,049,780		+1,049,780
Unobligated balance transferred from "Salaries and expenses," Office of Minerals Exploration			−228,000	−228,000
Unobligated balance available, end of year	400,000	400,000	400,000	
Unobligated balance lapsing	356,814			
New obligational authority	63,700,000	69,334,000	72,826,000	+3,492,000
New obligational authority:				
Appropriation	63,700,000	67,255,000	72,826,000	+5,571,000
Proposed supplemental due to pay increases		2,079,000		−2,079,000
Obligations by objects:				
Direct obligations:				
11 Personnel compensation	44,282,690	48,345,000	50,250,000	+1,905,000
12 Personnel benefits	3,278,097	3,620,000	3,805,000	+185,000
21 Travel and transportation of persons	2,978,166	3,145,000	3,340,000	+195,000
22 Transportation of things	794,724	895,000	975,000	+80,000
23 Rent, communications, and utilities	1,823,728	2,005,000	2,310,000	+305,000
24 Printing and reproduction	1,283,266	1,360,000	1,445,000	+85,000
25 Other services	2,089,338	2,674,000	2,847,000	+173,000
Services of other agencies	552,033	525,000	575,000	+50,000
26 Supplies and materials	3,129,371	3,280,000	3,370,000	+90,000
31 Equipment	3,206,434	2,665,000	3,050,000	+385,000
33 Investments and loans	353,517	815,780	844,000	+28,220
42 Insurance claims and indemnities	29,517	60,000		−60,000
Subtotal	63,800,881	69,389,780	72,811,000	+3,421,220
Deduct quarters and subsistence charges	5,392	6,000	7,000	−1,000
Total direct obligations	63,795,489	69,383,780	72,804,000	+3,420,220
Reimbursable obligations:				
11 Personnel compensation	20,703,601	22,870,000	23,595,000	+725,000
12 Personnel benefits	1,517,032	1,690,000	1,730,000	+40,000
21 Travel and transportation of persons	1,866,822	2,000,000	1,945,000	−55,000
22 Transportation of things	702,878	830,000	830,000	
23 Rent, communications, and utilities	913,671	1,110,000	1,130,000	+20,000
24 Printing and reproduction	177,276	240,000	190,000	−50,000
25 Other services	2,611,659	3,452,000	3,072,000	−380,000
Services of other agencies	407,955	370,000	370,000	
26 Supplies and materials	1,340,621	1,625,000	1,465,000	−160,000
31 Equipment	2,234,662	2,655,000	2,600,000	−55,000
42 Insurance claims and indemnities	4,118			
Subtotal	32,480,295	36,842,000	36,927,000	+85,000
Deduct quarters and subsistence charges	601			
Total reimbursable obligations	32,479,694	36,842,000	36,927,000	+85,000
Allocation accounts:				
21 Travel and transportation of persons		1,000	2,000	+1,000
23 Rent, communications, and utilities	1,486			
24 Printing and reproduction		8,000	13,000	+5,000
25 Other services	113,299	36,000	235,000	+199,000
32 Lands and structures		955,000		−955,000
Total allocations	114,785	1,000,000	250,000	−750,000
Total obligations	96,389,968	107,225,780	109,981,000	+2,755,220

CONSOLIDATED ACCOUNTS AND CENTRAL SERVICES FINANCED BY BENEFITING ACTIVITIES

Services, supplies, or equipment which are in common need by two or more divisions are, for efficiency and economy, reported in consolidated accounts. Charges are initially made to these accounts, are ultimately charged to the activity benefited, and are justified in the budget document for those activities. The actual costs of these accounts for 1964 and the estimates for 1965 and 1966 are summarized below:

[In thousands]

	Actual, 1964	Estimate, 1965	Estimate, 1966
Consolidated accounts:			
Motor vehicle fleet operation	$1,442	$1,359	$1,301
Rental and maintenance of certain facilities at headquarters and field centers	621	700	710
Warehouse stock of common-use supplies and materials	760	898	835
Survey's proportionate share of departmental charges, safety committee, professional staffing committee, and contingencies arising from operation of field centers	147	128	105
Total consolidated accounts	2,970	3,085	2,951
Central services:			
Map reproduction	2,402	2,482	2,640
Editing and illustration of publications	2,379	2,571	2,630
Distribution of maps and reports, response to public inquiries and related functions	1,564	1,720	1,742
Property maintenance and instrument development	563	594	607
Computing and tabulating services	675	750	800
Total central services	7,583	8,117	8,419
Grand total	10,553	11,202	11,370
Less interoffice billings	763	751	782
Net cost	9,790	10,451	10,588

Financial support for these accounts and services is summarized as follows:

[In thousands]

	Actual 1964	Estimate 1965	Estimate 1966
Topographic surveys and mapping	$3,847	$3,967	$4,050
Geologic and mineral resource surveys and mapping	3,214	3,361	3,506
Marine geology and hydrology		47	59
Water resources investigations	2,396	2,672	2,664
Soil and moisture conservation	4	7	6
Conservation of lands and minerals	160	207	123
General administration	169	190	180
Net cost [1]	9,790	10,451	10,588

[1] Includes charges to direct appropriation and reimbursements.

AUTHORIZATION FOR THE PURCHASE OF 43 PASSENGER MOTOR VEHICLES FOR REPLACEMENT ONLY

The vehicles requested are used to transport men and equipment over all kinds of roads and terrain and in all kinds of weather, in the conduct of the field-work of the Geological Survey. These cars must give dependable service at all times, since a great deal of the transportation required is in areas where repair services are not available. Field use tends to shorten the efficient life of a vehicle.

The 43 vehicles to be replaced meet or exceed the age or mileage replacement standards prescribed by General Services Administration, and can no longer give

dependable and economical service. The vehicles will be used in areas not serviced by vehicle pools maintained by the General Services Administration.

Gross cost of vehicles to be purchased	$74,000
Allowance on old vehicles to be exchanged	16,000
Net cost	58,000
Number of old passenger vehicles still to be used	149

Classification	Number of cars meeting replacement criteria				Number of replacements requested in 1966			
	Mileage		Age	Total	Mileage		Age	Total
	60,000 to 80,000	80,000 or over			60,000 to 80,000	80,000 or over		
Automobiles	20	9	26	55	8	4	10	22
Station wagons	16	5	14	35	5	5	11	21
Buses								
Coupe pickups								
Total	36	14	40	90	13	9	21	43

EXPLANATION OF APPROPRIATION LANGUAGE CHANGES

Mineral exploration program

Adds proposed language to authorize the Geological Survey to carry out the functions of the minerals exploration program (30 U.S.C. 641–646), transferred in the 1966 budget, by the Secretary of the Interior, from Office of Minerals Exploration to the Survey. This language has been extracted from the fiscal year 1965 appropriation language of the Office of Minerals Exploration.

Lead and Zinc Stabilization Program

HIGHLIGHT STATEMENT

The Secretary of the Interior is authorized by the act of October 3, 1961, (Public Law 87–347) to establish and maintain a program of stabilization payments to small domestic producers of lead and zinc ores and concentrates produced during the calendar years 1962 through 1965.

The act authorizes maximum stabilization payments as follows:

Calendar year 1962	$4,500,000
Calendar year 1963	4,500,000
Calendar year 1964	4,000,000
Calendar year 1965	3,500,000

The fiscal year 1962 appropriation was $4,690,000 (no-year money) and the fiscal year 1963 appropriation was $2,450,000. (Unexpended funds revert to the Treasury.)

Of the funds appropriated in 1962, $2,993,000 remained available at the close of 1964. It is anticipated that this amount will be more than adequate to finance the program which will terminate on December 31, 1965.

Appropriation, 1964	
Unobligated balance available from prior years	$3,626,000
Obligations, 1964	−633,000
Appropriation, 1965	
Unobligated balance available from 1964	2,993,000
Obligations, 1965	−600,000
Appropriation, 1966	
Unobligated balance available from 1965	2,393,000
Obligations, 1966	−330,000
Unobligated balance lapsing	2,063,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
1. Stabilization payments	$588,000	$552,000	$298,000	−$254,000
2. Administration	45,000	48,000	32,000	−16,000
Unobligated balance lapsing			2,063,000	+2,063,000
Unobligated balance carried forward	2,993,000	2,393,000		−2,393,000
Total	3,626,000	2,993,000	2,393,000	−600,000

FILING WRITTEN STATEMENT

Chairman HAYDEN. Mr. Nolan, please file your written statement for the record and highlight it for the committee.

Mr. NOLAN. Thank you, sir: I do have a statement which I will be glad to put in the record. I can, I hope, summarize it rather briefly.

Chairman HAYDEN. We shall be glad to have you do that.

(The statement referred to follows:)

STATEMENT OF DIRECTOR THOMAS B. NOLAN

Mr. Chairman and members of the committee, I am pleased to have the opportunity to discuss the budget and program of the Geological Survey for fiscal year 1966.

The functions of the Geological Survey deal with resources that are among the most fundamental to the Nation's welfare and to its economy. Land, mineral, and water resources are so essential that the economy can continue to grow only if these resources can continue to be developed in quantities sufficient to sustain it. Fundamental facts necessary to the development of these resources are products of the Survey's programs.

TOPOGRAPHIC MAPPING

A primary mission of the Geological Survey is the preparation, maintenance, publication, and distribution of maps of the National Topographic Map Series of the United States, which constitute a fundamental part of the background information needed to inventory, develop, and manage the natural resources of the country. An increase of $311,000 is provided for this activity.

By the end of the 1965 fiscal year the country will be approximately 71 percent covered by standard topographic quadrangle maps at 1:24,000 and mile-per-inch scales, and at the present rate of progress coverage will be complete in the late 1970's.

Concomitantly, existing maps must be reviewed and revised when necessary to make them conform with extensive changes resulting from rapid development of metropolitan areas, highways, and other engineering projects. Revision is generally a minor operation compared to the production of an original quadrangle map; but because of the large number of maps involved in complete coverage of the country, the maintenance of these maps at all times in the most useful condition does become an overall operation of serious proportions.

The high priority requests for mapping consistently exceed our mapping capacity.

The preparation of the National Atlas is proceeding approximately on schedule and an increase of $60,000 is requested to bring the operation to an optimum rate of production.

GEOLOGIC INVESTIGATIONS

Geologic and mineral resource surveys and mapping activity encompass a very broad range of studies—from those that have a direct bearing on the Nation's welfare and development, such as studies directly related to resources of minerals and fuels, and to engineering construction and a large variety of land uses; to

those studies of less direct application, but equally important, that unravel and broaden our understanding of basic principles and processes in geology, geophysics, and geochemistry. Geologic investigations are, of necessity, complex and time consuming; the answers sought and the problems to be solved do not lend themselves to ready dispatch. This points up all the more the need to accelerate now geologic investigations that will insure the Nation's economic health and well-being in the years ahead.

New and accelerated studies provided by a net program increase of $1,885,000 are planned in earthquake seismology, in the Upper Mantle project, in resources of minerals and fuels (including resources in wilderness-type areas), and in engineering geology pertaining to land utilization and rock behavior.

The disastrous earthquake of March 27, 1964, in Alaska, dramatically emphasized the pressing need for increased knowledge of geologic factors associated with earthquakes, landslides, and similar phenomena. A substantial part of the increase requested for 1966 will be directed to a diverse program of investigations developed in recognition of this need, and in response to recommendations of the Federal Commission on Reconstruction and Development for Alaska and the National Academy of Sciences and endorsed by the President's Office of Science and Technology.

The discovery of new mineral deposits is becoming more and more dependent on increased knowledge of geologic conditions and processes and the development of new instruments and techniques that probe beneath the earth's surface. The leadtime generally necessary between inception of geologic investigations and the payoff in terms of discovery and actual production of new mineral resources must be emphasized.

The Wilderness Act passed in 1964 assigns responsibility for mineral appraisal to the Geological Survey and the Bureau of Mines, and it will take substantial new effort to make responsible appraisals in the short time available.

MARINE GEOLOGY AND HYDROLOGY

Our marine program is both an outgrowth of our domestic program and a natural extension onto the bordering continental shelves and submarine slopes.

Increasing demands on our coastal water supplies, preservation and development of beaches for recreation, the construction of permanent towers to replace lightships for navigation, and many other activities related to development of coastal and offshore resources require much more geologic and hydrologic information than we now have. And we have a constantly increasing need for knowledge of marine processes and sedimentation in order that we may gain a better understanding of the ways in which many rocks and resources of the land were formed.

WATER RESOURCES

The events of the past year have shown clearly the increasing importance of the orderly investigation and utilization of our water resources. The requested program increase of $1,321,000 represents a net increase of $891,000 including $165,000 for the implementation of Bureau of the Budget circular A–67.

The need for basic water data obtained by the Survey to be used both in research and in development becomes apparent in connection with programs relating to the economic recovery of depressed areas, the conservation movement, and the development of new water supplies for a rapidly expanding population. We have continued to expand our basic data network along the lines suggested by other Federal agencies and are working out techniques and methods for making the data more immediately available through automatic data processing systems.

Through Bureau of the Budget Circular A–67, the Department of the Interior was given responsibility for the coordination of the collection of basic water data and for the development of a system by which the basic data can be readily available to all users. The Survey was named the action agency and an organization has been established to carry out these functions and to maintain relationships to other groups active in the water field.

One of our efforts in the field of automation is the establishment of automated water quality stations to provide a constant record of the concentrations of certain elements in the water. Sixty of these stations are in operation and are giving a continuous record of the conductivity, dissolved oxygen, turbidity, pH, and water and air temperature.

By July 1 of this year we will have increased the number of automated stream-gaging stations to approximately 2,700. This represents one-third of the total of 8,200 stream-gaging stations maintained throughout the United States.

During the past year a map has been prepared showing the location of the shallowest acquifers containing water with more than 1,000 parts per million dissolved solids in the conterminous United States. The map is being printed and soon will be available for distribution.

Because of the interest in Appalachia, the Survey has assembled the available information from its files regarding the water resources of the Appalachia area. Some of the topics covered are flood frequency, water quality, ground water availability and storage reservoirs.

CONSERVATION OF LANDS AND MINERALS

The responsibilities of the Conservation Division mainly consist of two basic functions, (1) the supervision of leases for fuels and minerals on Federal and Indian lands and on the Outer Continental Shelves, and (2) the classification of Federal and Indian lands for surface development of water resources and for mineral potentials.

The increasing number of producing leases under supervision and the rate of increased annual royalty are measures of the growth of our responsibility. In the last decade the number of producing leases has doubled to 10,000 and the royalty returns, due in large part to the rapid development on the outer continental slope, has more than tripled to about $200 million.

Supervisory responsibilities of the Geological Survey on the Outer Continental Shelf started with the Outer Continental Shelf Act of August 11, 1953.

The budget request provides only a slight increase, $61,000, for supervising oil and gas leases, and no increase is shown for supervising mining leases.

The primary purpose of the mapping program in aid of mineral classification is to evaluate geologically approximately 35 million acres of potential mineral land remaining under Federal ownership, and to classify it as either mineral or nonmineral with respect to the leasable minerals, thereby aiding the administration of the public domain.

The purpose of classification of land for waterpower and reservoir sites is to prevent encumbrance of sites which have a unique value for development as reservoirs. Urban development, industrial development and highway construction in a reservoir area could add prohibitive costs to future development of a site.

The classification review program for waterpower sites, started in 1956, has covered about 1 million acres orginally classified on sparse and incomplete data with the result that more than half has been recommended for removal from classification.

Operations of the Branch of Connally Act Compliance, which administers the Connally Act of February 22, 1935, will be phased out by June 1966. The act was designed to assist certain oil-producing States through Federal policing of the interstate shipment of oil produced in violation of State oil and gas proration laws. Activities under the act were limited mainly to parts of Texas, Louisiana, and New Mexico. An estimated $198,000, a decrease of $199,000 under last year, is requested for the phaseout operation.

OFFICE AND LABORATORY FACILITIES

Housing remains a major problem for the Survey. The greater part of the Survey's operations is conducted from three main centers located in Washington, D.C., Denver, Colo., and Menlo Park, Calif.

Operations in the Washington area are carried out in over 30 separate buildings, most of which are rented and were not designed for their present uses. Preliminary plans and site studies for a new facility in the Washington area to house a central headquarters and an Atlantic field center are nearing completion, and we hope to have agreement in the near future on a satisfactory site. Funds are available through the General Services Administration for final plans and we hope that construction can be started soon to relieve a difficult situation of long standing in this area.

It is our plan to direct future growth to the maximum extent possible to facilities outside of Washington. Existing field centers are already overcrowded, however, and we have had to turn to rental space to provide sufficient housing there also. Existing and anticipated needs at the field center in Denver will be served by (1) a small, highly specialized building for research in the use of radioactive isotopes in geology and hydrology for which funds have been appropriated, plans have been drawn, and invitations for bids on construction are to be issued soon; and (2) office-laboratory building for which funds have been requested this year for preliminary planning.

FUNCTIONS OF GEOLOGICAL SURVEY

Mr. NOLAN. First of all, as I have said in previous years, the functions of the Geological Survey deal with resources that are among the most fundamental to the Nation's welfare and to its economy.

Land, mineral, and water resources are so essential that the economy can continue to grow only if these resources can be developed in quantities sufficient to sustain it. Fundamental facts necessary to the development of these resources are products of the Survey's programs.

TOPOGRAPHIC MAPPING

The first of these activities is that of topographic mapping. A primary mission of the Geological Survey is the preparation, maintenance, publication, and distribution of maps of the national topographic map series of the United States, which constitute a fundamental part of the background information needed to inventory, develop, and manage the natural resources of the country. An increase of $311,000 is provided for this activity.

Chairman HAYDEN. Will more detailed information on mapping be employed in the preparation of these maps than formerly?

Mr. NOLAN. Yes, indeed, sir. The topographic mapping of the country has gone from the original concept of 4 miles to an inch as an appropriate scale, through a scale of a mile to the inch, which is still used as the publication scale for the less highly populated areas. Now the standard publication scale is 2,000 feet to the inch for the more highly developed areas.

The 70-percent coverage that I mentioned represents the combination of the mile-to-the-inch mapping for the less populated areas, and the 24,000 scale for the more highly developed areas. We are discovering, as urbanization and development of the country progress, that there is greater and greater demand for the larger 2,000-foot-to-the-inch publication scale.

This resulted, as I mentioned, a year or so ago at one of these hearings, in the fact that we are now carrying on all of our original compilation for standard quadrangle mapping, except in Alaska, at the 2,000-foot-to-the-inch scale and publishing some of it, where justified, on the mile-to-the-inch scale.

One of the reasons for doing this was that we discovered that development was proceeding so rapidly in many areas that we barely finished the mile-to-the-inch map before we were being asked to produce a 2,000 foot-to-the-inch map. So, I think we are achieving a good deal of economy by having in hand the material to produce the larger scale map as soon as the demand arises rather than have to wait until later.

Senator YOUNG. Is this all done by photography?

Mr. NOLAN. Yes. All our mapping is done by photogrammetric methods.

IMPROVED PHOTOGRAPHY

Senator YOUNG. Do you use the improved photography that the military uses? They have greatly improved their photography in the last 5 years.

Mr. NOLAN. Our photography has been greatly improved too, sir. All of our photography, except possibly for some mapping we are doing for the military, is obtained by commercial contract. But the

photographs that we get by contract must adhere to very rigid specifications that we have developed in part at least with the military. These specifications reflect the improvements in cameras and in photography and film that is now possible.

In fact, in some instances we have required the commerical contract photography to be done with cameras that meet our specifications. I think we have taken full advantage of the advances that are made. We have continued to try to improve the quality of the photography.

We are experimenting now with infrared and color photography in an effort to achieve greater fidelity and accuracy in the material that is a basic element in photogrammetric work.

Senator YOUNG. I think we do a better job from a satellite 120 miles in the air than we used to do from the old planes.

Mr. NOLAN. It is amazing. In fact I think in part the Survey did some of the pioneering work in this increasing higher altitude photography because it provides greater economy in photogrammetric work. If you can photograph from a greater height and still obtain the necessary accuracy and fidelity in the photographs you save a great deal of money in the photogrammetric process because you have fewer models to set up.

MAP REVISIONS

In planning for this year's work, we are trying to provide for an increased need to revise existing maps. We expect that we will have to gradually devote a greater portion of our capacity and funds for topographic mapping to revision.

NATIONAL ATLAS

We are also continuing the preparation of the National Atlas. This is going on schedule. An increase of $60,000 is required to bring the operation to an optimum rate of production.

I sat in on a meeting day before yesterday that we held with the individuals who have been designated to act as liaison between other agencies of government and the National Atlas group in the Survey. We are obtaining a great deal of cooperation from other agencies of government, and are quite hopeful that the product we are beginning to produce now is going to be a very real contribution to the economy of the country.

GEOLOGIC INVESTIGATIONS

The second of our major activities is in the field of geologic and mineral resource investigations. These resource surveys and geologic mapping activities encompass a very broad range of studies from those that have a direct bearing on the Nation's welfare and development, such as studies directly related to resources of minerals and fuels and to engineering construction and a large variety of land uses, to those of less direct, even though equally important, application, that unravel and broaden our understanding of basic principles and processes in geology, geophysics, and geochemistry.

Geologic investigations are, of necessity, complex and time consuming; the answers sought and the problems to be solved do not lend themselves to ready dispatch. This points up all the more the need to accelerate new geologic investigations that will insure the Nation's economic health and well-being in the years ahead.

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EARTHQUAKE SEISMOLOGY STUDIES

New and accelerated studies provided by a net program increase of $1,885,000 are planned in earthquake seismology, in the upper mantle project, in resources of minerals and fuels, including resources in wilderness-type areas, and in engineering geology pertaining to land utilization and rock behavior.

The disastrous earthquake of March 27, 1964, in Alaska dramatically emphasized the pressing need for increased knowledge of geologic factors associated with earthquakes, landslides, and similar phenomena. A substantial part of the increase requested for 1966 will be directed to a diverse program of investigations developed in recognition of this need, and in response to recommendations of the Federal Commission on Reconstruction and Development for Alaska and the National Academy of Sciences and endorsed by the President's Office on Science and Technology.

DEPENDENCE UPON GEOLOGIC CONDITIONS FOR MINERAL DEPOSITS DISCOVERY

The discovery of new mineral deposits is becoming more and more dependent on increased knowledge of geologic conditions and processes and the development of new instruments and techniques that probe beneath the earth's surface. The leadtime generally necessary between inception of geologic investigations and the payoff in terms of discovery and actual production of new mineral resources must be emphasized. A good example of it is one that came to fruition this last year. Some aeromagnetic work that we carried on in southeast Missouri in the early 1950's resulted in the discovery of a large magnetic anomaly; this led to drilling and exploration by commercial companies and this in turn led to the opening of a new mine last spring.

There was thus a timelag of more than 10 years between the initial work carried out by the Survey and the coming into production of a major mine which, incidentally, is going to very materially add to t e wealth of Missouri. It highlights the need for careful anticipation and planning to assure that we have an adequate resource base for the country.

SILVER EXPLORATION

Chairman HAYDEN. Is there any way of distinguishing the different kinds of metals in the earth? I am particularly interested in the answer as it relates to silver.

Mr. NOLAN. We don't have a little black box yet that will do it. We have been very much interested in trying to improve our ability or capacity to explore for new deposits of the different minerals. One line of attack which I think is specifically applicable to your question is presented by some of the work we are doing in geochemical prospecting. We are devising means for detecting very small amounts of particular metals in the soil or in the stream gravels adjoining the outcrop areas.

We have only very recently developed a technique for determining very small quantities of silver, in the range of a few parts per million. This is going to be contributory to this point that you raised of seeking new silver deposits.

Chairman HAYDEN. There is presently such a demand for that metal that it is feared some of these speculators who have bought dollars might melt them down.

Mr. NOLAN. There may be a very real danger of that. I have been particularly interested in the possibility of improving our capacity to find silver deposits, partly because a good many years ago one of my early assignments was in the silver camp of Tonopah in Nevada.

ENVISIONED SUCCESS THROUGH NEW TECHNIQUES

I have been rather optimistic that we can improve our capacity by utilizing several new techniques, but not ones that will permit you to go out with a little black box and say, "Here is a major silver mine."

Chairman HAYDEN. I understand.

Mr. NOLAN. There is a need for techniques that will give you the ability to point out areas in which exploration can be carried on with some hope of success. For example, in many of the silver-rich deposits of the West, Nevada particularly, there is a very high heat flow, that is, a high geothermal gradient. Rocks containing silver deposits become much hotter with increasing depth than rocks elsewhere. This is believed to reflect the fact that there has been ore deposition in these areas. And our geophysical group has recently been doing a good deal of work in making possible the determination of heat flows that are larger than normal.

We will be able to do this, we think, with airborne equipment which will make it possible to carry out a reconnaissance over large areas and determine anomalous areas of high heat flow.

Then we have recently been working with a second device that we think can follow this initial one with some degree of hope. It is based on the fact that many, if not most, of the silver-rich deposits are accompanied by very small quanities of mercury. Mercury vaporizes rather easily. We have a device which can be used in the field to determine very small quantities of mercury. I am inclined to think that this combination of determination of areas of high heat flow, followed by the use of this mercury "sniffer" as we call it, may point out areas where we can productively explore for silver. But I didn't mean to get diverted into this.

Chairman HAYDEN. I wish you luck.

Mr. NOLAN. We hope there is silver there, too.

WILDERNESS AREA SURVEYS

The Wilderness Act passed in 1964 assigns responsibility for mineral appraisal to the Geological Survey and the Bureau of Mines, and it will take substantial new effort to make responsible appraisals in the short time available.

MARINE GEOLOGY AND HYDROLOGY

A relatively new activity is marine geology and hydrology. Our marine program is both an outgrowth of our domestic program and a natural extension onto the bordering Continental Shelves and submarine slopes. We are hopeful that from this program we will have improved knowledge of not only such immediate problems as methods of controlling and rectifying salt water intrusion of our coastal ground-

water supplies but even more significantly, it will continue to improve, as we are doing on land, our ability to detect mineral deposits.

Senator YOUNG. Mr. Chairman. May I ask a question?

Chairman HAYDEN. Yes.

LAND CLASSIFICATION

Senator YOUNG. I have a map from your department of areas to be mapped and classified. For what kind of minerals are you looking?

Mr. NOLAN. That particular map relates to an activity performed by our Conservation Division. Beginning about 1908, very large areas in the West were withdrawn by President Theodore Roosevelt in anticipation of the need to classify them as to their mineral-bearing characteristics, so that, when and if such lands were disposed of, the minerals could be reserved to the United States.

The particular minerals concerned are, currently, coal, oil and gas, saline deposits, potash, soda, oil shale, and phosphates.

Our accomplishments in this program are shown on this map, which shows the areas in which withdrawals have been made, and which we have, in recent years, been able to classify. This is resulting, incidentally, in restoring to the public domain nearly half of the areas that were originally withdrawn.

This item is discussed in a little more detail under the heading of "Conservation of lands and minerals" in the justification beginning with page GS–53.

MARINE GEOLOGY AND HYDROLOGY

Increasing demands on our coastal water supplies, preservation and development of beaches for recreation, the construction of permanent towers to replace lightships for navigation, and many other activities related to development of coastal and offshore resources require much more geologic and hydrologic information than we now have.

And we have a constantly increasing need for knowledge of marine processes and sedimentation in order that we may gain a better understanding of the ways in which many rocks and resources of the land were formed.

WATER RESOURCES

In water resources the events of the past year have shown clearly the increasing importance of the orderly investigation and utilization of our water resources. The requested program increase of $1,321,000 represents a net increase of $891,000 including $165,000 for the implementation of Bureau of the Budget Circular A–67.

The need for basic water data obtained by the Survey to be used both in research and in development becomes apparent in connection with programs relating to the economic recovery of depressed areas, the conservation movement and the development of new water supplies for a rapidly expanding population.

We have continued to expand our basic data network along the lines suggested by other Federal agencies and are working out techniques and methods for making the data more immediately available through automatic data-processing systems.

BUREAU OF THE BUDGET CIRCULAR A–67

Through Bureau of the Budget Circular A–67, the Department of the Interior was given responsibility for the coordination of the collection of basic water data and for the development of a system by which the basic data can be readily available to all users. The Survey was named the principal data collection agency and an organization has been established to carry out these information and coordinative functions and to maintain relationships to other groups active in the water field.

Because of the interest in Appalachia, the Survey has assembled the available information from its files regarding the water resources of the Appalachia area. Some of the topics covered are flood frequency, water quality, ground water availability, and storage reservoirs.

CONSERVATION OF LANDS AND MINERALS

The fourth of our major activities is called conservation of lands and minerals. It is the responsibility of the Conservation Division, and consists mainly of two basic functions, (1) the supervision of development and producing operations for fuels and minerals on leased Federal and Indian lands and on the Outer Continental Shelves, and (2) the classification of the public domain for waterpower and mineral potentials.

Senator Young, this is the activity shown on the map you mentioned a few moments ago.

The increasing number of producing leases under our supervision and the rate of increased annual royalty are measures of the growth of our responsibility. In the last decade the number of producing leases has doubled to 10,000 and the royalty returns, due in large part to the rapid development on the Outer Continental Shelf, has more than tripled to about $200 million.

The budget request provides only a slight increase, $61,000, for supervising oil and gas leases, and no increases are shown for supervising mining leases or for either of the classification activities.

The primary purpose of the mapping program in aid of mineral classification is to evaluate geologically approximately 35 million acres of potential mineral land remaining under Federal ownership, and to classify it as either mineral or nonmineral with respect to the leasable minerals, thereby aiding the administration of the public domain.

PHASING OUT CONNALLY ACT OPERATIONS

Operations of the Branch of Connally Act Compliance, which administers the Connally Act of February 22, 1935, will be phased out by June 1966. The act was designed to assist certain oil-producing States through Federal policing to prevent the interstate shipment of oil produced in violation of State oil and gas proration laws.

Activities under the act were limited mainly to parts of Texas, Louisiana, and New Mexico. An estimated $198,000, a decrease of $199,000 under last year, is requested for the phaseout operation.

Office and Laboratory Facilities

Housing remains a major problem for the Survey. The greater part of the Survey's operations is conducted from three main centers located in Washington, D.C., Denver, Colo., and Menlo Park, Calif.

Operations in the Washington area are carried out in over 30 separate buildings, most of which are rented and were not designed for their present uses. Preliminary plans and site studies for a new facility in the Washington area to house a central headquarters and an Atlantic field center are nearing completion, and we hope to have agreement in the near future on a satisfactory site.

Funds are available through the General Services Administration for final plans and we hope that construction can be started soon to relieve a difficult situation of long standing in this area.

It is our plan to direct future growth to the maximum extent possible to facilities outside of Washington. Existing field centers are already overcrowded, however, and we have had to turn to rental space to provide sufficient housing there also. Existing and anticipated needs at the field center in Denver will be served by (1) a small, highly specialized building for research in the use of radioactive isotopes in geology and hydrology for which funds have been appropriated, plans have been drawn, and invitations for bids on construction are to be issued soon; and (2) an office-laboratory building for which funds have been requested this year for preliminary planning.

Thank you. That concludes my summary.

Saudi Arabia Geological Surveying Project

Chairman Hayden. I note in the table setting forth the financing of Geological Survey programs, you indicate receipt of $719,000 in fiscal year 1965 and an expected receipt of $770,000 in fiscal year 1966 from the Kingdom of Saudi Arabia.

What work are you doing for that country?

Mr. Nolan. I had the pleasure of visiting that project just a month or so ago following the Geologic Congress in India. This represents a request that came to the Survey through the State Department from the Saudi Arabian Government. That Government requested that we assist them in setting up a Geological Survey equipped to do both field work and laboratory work, and to be carried out—this makes it unique in my experience—wholly at the expense of the Saudi Arabian Government.

No U.S. funds are involved. The project represents, if I can interpret the reasoning back of the request, a desire on the part of the Saudi Arabian Government to broaden the base of their economy which is presently so completely dependent on oil and gas.

The western part of Saudi Arabia is mountainous, and there is some evidence that other types of mineral deposits may occur in this area. The work is concentrated there.

Chairman Hayden. Do you have any interference from Mr. Nasser in Egypt in carrying on this work?

Mr. Nolan. Not so far as I am aware.

Off the record.

(Discussion off the record.)

AUTHORIZATION FOR WORK PERFORMANCE IN FOREIGN COUNTRIES

Senator YOUNG. Do you have authorization to do this kind of work anyplace in the world with or without repayment by the country involved?

Mr. NOLAN. We have authorization to carry on work elsewhere, but, in this particular instance, I believe the authorization came to us through the State Department and our men are in effect working at the request of that Department.

Senator YOUNG. If any country in the world makes this request, and the State Department approves it, then you can go ahead and do the work?

Mr. NOLAN. I think it is up to us to decide.

Senator YOUNG. Your department has the authorization?

Mr. NOLAN. We have the authorization (22 U.S.C. 2357) to receive reimbursements from friendly countries and international organizations for technical assistance.

Senator YOUNG. You haven't quite answered my question, Mr. Nolan. First, you are authorized to go into any country and, second, must they pay for it?

USE OF REGULAR APPROPRIATION FOR FOREIGN WORK

Mr. NOLAN. No, sir. We have authorization. I am not sure I have it at hand here, but several years ago, as a result of some requests that came to us through the Department, we were authorized to carry out work at our own expense. We have the legal references here which I can put in the record.

Where some work outside of the United States would be of benefit to the United States, we are authorized to do it.

Senator YOUNG. Who authorized you?

Mr. NOLAN. It was a congressional act (76 Stat. 427).

Senator YOUNG. Is that a continuing authorization?

Mr. NOLAN. Yes, sir. It carries with it a provision, if I remember rightly, to make a report twice each year to the Congress as to the extent to which it was utilized. There has been very little utilization of it so far to my knowledge. Most of our work abroad has been financed by funds that come to us from either the Department of Defense or State or AID.

Senator YOUNG. I don't question the program. I am concerned about the broad authorization.

Mr. NOLAN. There is a specific authorization. And if you wish, I can put the language of that authorization in the record.

(The authorization referred to follows:)

PUBLIC LAW 87-626 (76 STAT. 427)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the authority of the Secretary of the Interior, exercised through the Geological Survey of the Department of the Interior, to examine the geological structure, mineral resources, and products of the national domain, is hereby expanded to authorize such examinations outside the national domain where determined by the Secretary to be in the national interest.

SEC. 2. The Secretary of the Interior shall report to the Speaker of the House of Representatives and the President of the Senate on January 31 and July 31 of each year on all actions taken pursuant to this Act during the six months ending on the December 31 and June 30 immediately preceding the reporting date and on the results of such actions.

FUNDING OF PROJECTS IN FOREIGN COUNTRIES

Senator MUNDT. We would like to have you do that. That settles the authorization part. What do you use for money? Is there a line item for that?

Mr. NOLAN. No, sir.

Senator MUNDT. Do we appropriate some money or do you have some loose change available to do that?

Mr. NOLAN. This authorizes the use of our regular appropriation. But, as I said, to my knowledge so far, the use of this authorization has been very, very small. One instance that I recall, which led to the authorization, was the need several years ago to secure an appraisal of the fluorite deposit of Mexico, when there was some concern over our own resources of fluorite. We had a man go to Mexico for 2 weeks, financed, I believe, by transferred funds, to review the resources of fluorite in some newly discovered deposits there. This is the kind of use we wanted to be able to make of our own funds, where it is contributory to our own responsibilities.

Senator MUNDT. Some place there must be a kind of budgetary mechanism for this. If it is not a line item it must appear in your own budget. You must make an estimate because I am pretty sure you don't have a lot of extra money for that work.

Mr. NOLAN. Activities such as the fluorite work that I mentioned would come out of allotments for mineral work. The example of Saudi Arabia is the only instance I know of where a foreign country has proposed to finance completely the kind of technical assistance that would normally come through the AID program.

Senator MUNDT. I think it might very well be a good program but it comes as a surprise to me. I didn't know it, anyhow. It seems to me some place in the budgetary mechanism there would be funds set aside or some device for relocation of funds or something. How much does it amount to each year?

Let us take this Saudi Arabia.

Mr. NOLAN. As I say, that doesn't come out of our budget at all. We report it to you each year on these listings of transferred funds. There is no need in this particular instance for any earmarking. As I mentioned, the authorization for the use of survey funds was made several years ago, and its use is reported on twice each year to the Congress.

It has been used only about a dozen times since it was authorized in 1962. The amount of money involved, I would guess, has averaged on the order of about $2,000 for each project.

Senator MUNDT. Very incidental money?

Mr. NOLAN. Yes. So small that I would question whether it wouldn't cost more in the way of bookkeeping.

Senator MUNDT. You are not involved in 30 or 40 countries?

Mr. NOLAN. No. In fact, I would be very reluctant to see us embark on such a program. Part of the stimulus for the work for the Saudi Arabian Government has come from some of our own nationals as a result of rather deep involvement of this country in oil.

SCOPE OF AUTHORITY

Senator YOUNG. But your authorization is broad enough that if you had the money you could go into many countries to do this kind of work?

Mr. NOLAN. We could, but so long as I am Director, I don't think we would. In other words, I would have to interpret proposals such as this first of all in the light of our own objectives as set forth in our organic act and, second, in the light of the language, or of the intent as shown by the record that was made at the time this special authorization was given. The authorization is designed to assist us in carrying out our responsibilities domestically.

I would like to reassure you on that, Senator.

Senator YOUNG. I was wondering what might happen if some future Director would get ambitious.

Mr. NOLAN. I think he would be restricted by the same limitations: the combination of the organic act and the intent of the Congress in the authorization.

NATIONAL ATLAS

Chairman HAYDEN. I note that you include in your budget estimate additional funds for work on the "National Atlas." What is the total amount of funds you had available for this work last year and what will be available in 1966? How many more years, do you contemplate, will be required to complete the "National Atlas"?

Mr. NOLAN. I would like to put in the record, sir, the statement we have prepared and to summarize it here.

(The statement referred to follows:)

STATUS OF ATLAS

Atlas will be one volume, 14 by 19 inches, 400 pages, selling for approximately $50. Publication is expected late in calendar year 1967. Selected separate sheets to be available prior to final publication—some during next year. Project began in fiscal year 1962 but no work in fiscal year 1964.

Considerable progress: Of 350 special subject maps, 75 through advance planning (page layouts designed and source materials selected). Of these, 45 in compilation, 15 being scribed, 8 color proofed, 7 in reproduction—being held pending decision on binding.

Maps near completion are:

Shaded relief	Soils
Geology	Counties
Classification of land forms	Judicial districts
Climatic conditions	Time zones
Water resources	Population
Basic world map	Structure

By end of this fiscal year, expect press run of proof copies for:

Basic world map	Climatic conditions
Geology	Population
Classification of land forms	Shaded relief

During fiscal year 1966, expect up to 125 maps in compilation; 50 sheets published as separates.

Fiscal year	Man-years		Publication cost	Other costs [1]	Total cost
	Cost	Number			
1962	$16,197	2		$2,000	$18,197
1963	91,500	8	$1,500	9,000	102,000
1964	[2]				
1965	234,500	19	23,000	19,500	275,000
1966	285,500	23	37,500	12,000	335,000
1967	215,000	17	130,000	5,000	350,000
1968	85,000	7	65,000	75,000	225,000
Total	927,697	76	257,000	120,500	1,305,197

[1] Other costs include such items as travel and contractual services. In 1968, it is for binding.
[2] No work.

NOTE.—After publication—modest maintenance program of $85,000 per year.

ANTICIPATED REIMBURSEMENT THROUGH SALES

Mr. NOLAN. For the present year, fiscal 1965, there is an allowance of $275,000 for "Atlas." For next year, as I said, we propose $335,000. And for the 2 succeeding years, we estimate the requirements would be, in 1967, $350,000 and, in 1968, $225,000, at which time the work would be concluded.

Senator MUNDT. May I ask a question, Mr. Chairman, on that subject because that is kind of a rather "old friend of ours"? At one time, we thought we could induce private people, as I recall, to do it, which didn't work out. And then, as I recall, the committee language reported and your testimony, also, suggested making this as nearly self-supporting as possible.

Can you give us an estimate on how close we are going to hit that target at the moment?

Mr. NOLAN. As you recall, sir, we made what might be called a market survey to estimate the demand. As a result of that market survey, we felt there would be sales somewhere between 25,000 and 30,000 copies, at $50 a copy. The break-even point, according to estimates of total cost, would be sales of 26,000. I am personally fairly well convinced, from the results of our inquiries, that this number of copies of the "Atlas" will be sold and, as a result, the full cost will be returned to the Treasury.

Senator MUNDT. In other words, if we can sell 25,000 or 26,000 it will be about a break-even operation?

Mr. NOLAN. Yes.

Senator MUNDT. Who, in the main, buy these?

Mr. NOLAN. There are three main groups: Perhaps the most certain ones are libraries; the second are newspapers and publishing groups; and the third are large industrial organizations—groups that would have, you might say, libraries of their own—that regard this as a tool in their own activities. These were the three groups that we felt would provide the main market.

Senator MUNDT. Thank your, Mr. Chairman.

OFFICE OF MINERALS EXPLORATION

Chairman HAYDEN. The narrative supplied in connection with your geologic and mineral resource surveys activity indicates that you have taken over the program formerly administered by the Office of Minerals Exploration. Are you prepared to summarize the mineral exploration program of the past year?

Mr. NOLAN. Mr. Chairman, if I might, I would like your permission to call on Mr. George Fumich, who has been in charge of this activity and is here today.

Chairman HAYDEN. Mr. Fumich, we shall be glad to hear from you. Please state your summary briefly.

Mr. FUMICH. Sir, the administrative functions of the Office of Minerals Exploration program are going to be transferred. We are doing that for more efficiency in administration. We are requesting funding of $775,000, which is $75,000 less than the amount requested last year.

We expect to have a $228,000 carryover so we will have a total program effort of $1,003,000. So far this year we have executed eight contracts, for a gross of $687,000, and with several terminations,

a gross total of $533,000. We have about $550,000 left this year for exploration.

We also have 31 applications that we are now processing for a total of approximately $3½ million. So, you can see that we expect to use all of the funded money that we have available at the present time. Last year we had, I believe, a successful year. We executed 19 contracts of which 16, for your information, were for gold and silver, 9 for gold and 7 for silver.

We had a carryover because we terminated 18 contracts. So, we had a refunding of $428,000 even though we funded $781,000 under the program. We believe that we will use all of the money that we are requesting because as I think you know, we have raised the support money for silver to 75 percent and as a result we have had a great increase in silver applications.

Since gold and silver were included in the program, we have executed 28 contracts for gold and 16 for silver. Gold and silver now approximate 60 or 70 percent of our program.

MINERAL EXPLORATION OF SILVER

Chairman HAYDEN. Thank you.

With regard to your minerals exploration program as it applies to silver, as you know late last summer the Committee on Appropriations approved participation by the Government in exploration contracts to the extent of 75 percent of actual project costs for silver. Can you tell the committee whether it has been possible for you to enter into any larger number of exploration contracts because of this approval by the Appropriations Committees?

Mr. FUMICH. Sir, as a result of the approval by the Appropriations Committee of the silver addition we have signed 16 contracts for silver totaling approximately $780,000 worth of Government funds.

U.S. SILVER RESERVES

Chairman HAYDEN. Is there an indication that the known U.S. reserves of silver will be increased?

Mr. FUMICH. We might as well be frank. As far as our present program is concerned we are not going to make much of an impact. I think it is a step in the right direction, but frankly I think we all realize that two-thirds of our silver production is a byproduct or a coproduct.

Chairman HAYDEN. I understand that.

Mr. FUMICH. And with the limitations we have, not being able to get lead and zinc in our program——

Chairman HAYDEN. Gold and copper, too?

Mr. FUMICH. Yes, sir.

SILVER SUPPLY

Chairman HAYDEN. What is the present situation with regard to this country's silver supply?

Mr. FUMICH. The last few years as you know, we have been producing around 36 million ounces of silver. So far this year our coinage requirements are going to be approximately 200 million ounces. The world production is only about the same amount. So I think, being

candid about the thing, we are in pretty much of a critical situation, sir.

Mr. NOLAN. I would just like to interject there, Mr. Chairman. I think that if we are going to improve our domestic silver situation, it will have to come through the discovery of brand new silver-rich deposits which probably do not outcrop at the surface.

It is going to need the kind of new exploration ideas and tools that I mentioned in my opening statement. We will have to approach the problem, I believe, from a much broader background than we have previously.

TRANSFER OF MINERALS EXPLORATION PROGRAM TO GEOLOGICAL SURVEY

Chairman HAYDEN. When the minerals exploration program was transferred to you, was any change made in the list of 35 mineral commodities for which exploration assistance may be given?

Mr. FUMICH. Sir, I can answer the question. My understanding is that the only purpose in the transfer of the organization to the survey is to make a saving in administrative costs. The organization and the regulations under which it operates will remain the same.

The only purpose in making the change in the first place was to make a saving in administration of about $75,000. In other words, last year we requested $234,000 for this purpose. This year as you can see we have only requested $159,000 for administration.

MARINE GEOLOGY AND HYDROLOGY

Chairman HAYDEN. You are proposing an increase of $200,000 in fiscal year 1966 for marine geology and hydrology. For what will this increased sum be used?

Mr. NOLAN. The increase for marine geology and hydrology will to a considerable extent be used on the Pacific coast and will be designed first of all to expand or extend the seismological program that is mentioned under our geologic investigations.

The extension of some of the major faults which are the locus of the earthquakes, particularly the San Andreas rift, extends seaward, and we are hoping to work in the Pacific along the San Andreas.

The second area in which we hope to extend or expand our marine geology and hydrology is in more detailed work on submarine landslides. These, too, are tied in with the seismological work, and this work will have considerable significance particularly in the light of the Alaskan earthquake where there were large and abrupt changes in the submarine topography.

And, these in turn were the source of the devastating sea waves that damaged several coastal communities.

WATER RESOURCES INVESTIGATIONS

Chairman HAYDEN. For "Water Resources Investigations," you show a net increase in 1966 of $891,000. Some $430,000 is listed as program savings and other nonrecurring items. Would you please submit for the committee an outline of the program modifications which have resulted in these savings and the amount of savings assignable to each of them?

Mr. NOLAN. If I could put that in the record, sir, I will be glad to. (The statement referred to follows:)

NONRECURRING ITEMS

Program savings and other nonrecurring items of $429,780 in the water resources activity consist of four items:

Nonrecurring financing in 1965 of the States' share of increased pay costs	$260,000
Cooperative agreements made with the States call for a specified amount of work to be done, based on rates of pay in effect before enactment of the pay act providing for increased Federal salaries. The State agencies have little or no opportunity to get increased appropriations and have objected to reduction of the program to compensate for the increased costs. While the States are unable to match the supplemental funds in the 1st year, they will pay for the increased costs in 1966 and succeeding years.	
Supplemental appropriation in 1965 for Montana flood studies (nonrecurring)	90,000
Program savings resulting from consolidation of field offices and other work improvement	65,000
Revision of the Division's field organization, approved by the Secretary of the Interior, will combine 2 to 3 separate offices in approximately 20 States into 1 district office for a State within the next 18 months. Saving in Federal funds ($50,000) will be achieved through the elimination of administrative and operational support by the consolidation of these offices. Savings of $15,000 in the Federal program result other work improvements.	
Decrease in the required payment to the Bureau of Employees' Compensation, pursuant to Public Law 86-767, sec. 209	14,870
Total	429,870

BASIC WATER NETWORK DATA

Chairman HAYDEN. For the same activity you list gross increases in your program of over $1,300,000. Please indicate where these increases occur.

Mr. NOLAN. The increases that are proposed are largely in the Federal program and in lesser part in the Federal-State cooperative program. In the Federal program, part of the increase is designed to permit us to carry out the responsibilities that the Budget Bureau assigned to us this last year in improving the basic water network data.

We have already had one meeting with other Federal agencies, in order to determine their requirements for basic data in water and to ascertain the extent to which our program will meet their needs. We are currently developing plans for a meeting which will be held this spring with non-Federal agencies, both States and private groups; in this meeting also, we will seek to determine needs, and bring into the plan for a basic data network the requirements of those groups.

FEDERAL-STATE COOPERATIVE PROGRAM

Part of the increase is designed to meet the increased offerings that we anticipate from the States for the cooperative program. And, if you wish, sir, I have a tabulation of the proposed increases that are being offered which I will put into the record.

Chairman HAYDEN. If you will, please.

(The statement referred to follows:)

State and municipal offerings for cooperative water resources investigations

State	1964 obligations	1965 estimate	1966 estimate
Alabama	$178,884	$212,000	$224,000
Alaska	5,307	7,000	10,000
Arizona	292,800	350,000	380,000
Arkansas	120,167	121,000	138,000
California	864,489	970,000	996,000
Colorado	271,847	280,000	297,000
Connecticut	119,279	121,000	128,000
Delaware	18,402	18,000	22,000
District of Columbia	3,600	4,000	4,000
Florida	489,496	630,000	677,000
Georgia	194,326	187,000	198,000
Guam	8,000	8,000	8,000
Hawaii	230,736	232,000	239,000
Idaho	101,638	106,000	113,000
Illinois	151,487	168,000	178,000
Indiana	222,197	227,000	241,000
Iowa	177,723	201,000	209,000
Kansas	306,799	323,000	343,000
Kentucky	158,342	159,000	158,000
Louisiana	374,767	457,000	468,000
Maine	32,798	35,000	45,000
Maryland	123,391	150,000	149,000
Massachusetts	103,670	120,000	134,000
Michigan	166,921	223,000	237,000
Minnesota	139,313	185,000	197,000
Mississippi	106,319	148,000	154,000
Missouri	115,564	143,000	161,000
Montana	75,185	93,000	99,000
Nebraska	141,818	145,000	144,000
Nevada	135,748	154,000	159,000
New Hampshire	34,686	35,000	40,000
New Jersey	252,061	260,000	268,000
New Mexico	268,441	278,000	295,000
New York	422,520	530,000	573,000
North Carolina	249,794	277,000	294,000
North Dakota	211,687	187,000	198,000
Ohio	240,610	223,000	236,000
Oklahoma	96,440	84,000	89,000
Oregon	150,899	158,000	167,000
Pennsylvania	340,015	370,000	383,000
Puerto Rico	119,038	140,000	148,000
Rhode Island	46,686	38,000	44,000
Samoa	7,500	10,000	10,000
South Carolina	50,196	60,000	64,000
South Dakota	87,310	93,000	99,000
Tennessee	152,121	164,000	174,000
Texas	623,990	640,000	688,000
Utah	261,094	313,000	331,000
Vermont	11,999	12,000	18,000
Virgin Islands	33,265	33,000	35,000
Virginia	59,606	56,000	63,000
Washington	403,063	430,000	456,000
West Virginia	49,359	50,000	58,000
Wisconsin	131,863	150,000	169,000
Wyoming	142,379	132,000	140,000
Total	9,877,635	10,900,000	11,550,000
Offerings not requiring matching (not included above)	672,675	800,000	800,000

Colorado River Stream Gaging Stations

Chairman Hayden. Last year funds were included in your appropriation for rehabilitation of the stream gaging stations on the Colorado River at Lees Ferry or at Grand Canyon. I believe that that amount was $50,000. Testimony before the committee indicated that another $50,000 would be requested in fiscal year 1966. Which one of the two stations has been rehabilitated and is $50,000 included in this budget for rehabilitation of the second one?

Mr. Nolan. If I can, I will summarize that. I have a more detailed paper that I can put in the record.

Chairman Hayden. I would like to have you do that.

(The statement referred to follows:)

REHABILITATION OF STREAM GAGING STATIONS AT LEES FERRY AND GRAND CANYON

In accordance with the wishes of the Appropriations Committees, the Geological Survey is rehabilitating the stream gaging stations at Lees Ferry and Grand Canyon. All activities in this connection have been coordinated with the construction programs of the National Park Service at these localities, and, as a consequence, the structures will be compatible in appearance and both agencies share in the economies of a combined operation.

The portions of the stations that constitute residences are subject to limitations established by the House and Senate Committees on Appropriations.

The bid for construction of the Lees Ferry residence is within the limitation, and we understand that the contract has been let. The total cost of construction of the office-laboratory and the residence at Lees Ferry will approach $40,000.

The rehabilitation of the gaging station at Grand Canyon involves transporting men and materials over mule trails or by helicopter to a point 11 miles from the south rim village and 4,500 feet down into the canyon of the Colorado. The lowest combined bid for office-laboratory building and residence totals $50,000, and the residence portion amounts to $32,200. The bid exceeds the monetary limitation on housing and a request for an exception is being submitted to the Appropriations Committees for advance review and approval.

PLANS AND CONTRACTS

Mr. NOLAN. Of the two stations, plans for the one at Lees Ferry have been drawn and a contract let for the construction. In both the Lees Ferry construction and the Grand Canyon construction, we worked very closely with the Park Service which has jurisdiction over both areas.

The plans for the Grand Canyon station have been drawn in very close cooperation with the Park Service. The estimated cost for that station is $50,000, and the residential portion amounts to $32,200. The problem that we now face is that this exceeds the limitation that has been set by the Congress on construction of housing. We are currently preparing and will submit to the Appropriations Committees, for advance review and approval, the proposal that exceeds the cost limitations for the Grand Canyon site.

But, as I say, the plans for that have already been drawn, agreed on by the Park Service and ourselves, and as soon as we have, hopefully, the congressional approval, we will proceed to put that out for bids as well. The Lees Ferry residence has already been contracted for. The contract has been let. The total cost for that will be approximately $40,000, but only about half of that is for the residence. So, we are not under the necessity of going to the Congress for that.

PHREATOPHYTE STUDY

Chairman HAYDEN. I understand.

Last October you advised me by letter of a difficulty which you were experiencing in connection with your phreatophyte study in the Gila River above Coolidge Dam. As I recall, river floodwater had deposited sediment and trash which was affecting the operation of your gage at that place.

You indicated in your letter that you would bring to the committee your current evaluation of this situation and suggestions for a remedy. What can you tell me about this matter at this time?

Mr. NOLAN. I have a statement on that, sir, which I would like to put in the record. I can summarize it briefly by saying that the accumulation of trash as a result of the very high summer precipita-

tion that has occurred in the drainage basin has forced us to abandon the two lowest gaging stations of the group.

This means that currently we will be restricted in our appraisal of the effects of phreatophytes only to the upper portion, the upper half of the reach, in which the testing was made. In order to correct this, it would be necessary to rehabilitate the lowest of these gaging stations which would take a certain amount of construction. This is mentioned, I think, in the memorandum that I have here. I think perhaps it would be helpful if I could put this into the record.

Chairman HAYDEN. Please do.

(The statement referred to follows:)

GILA RIVER PHREATOPHYTE PROJECT

The main item of interest in 1965 on the phreatophyte study area at the head of San Carlos Reservoir is the heavy deposition of sediment in the channel of the Gila River. This has resulted in the abandonment of the lowest gaging station. It is the second time the lower station has been moved upstream and is the result of the exceptional runoff from the unusual summer rains in 1963 and 1964. There is no evidence of former channel filling during the previous 10 years.

We will now be unable to complete a water budget on the lower one-third of the full area because of inability to measure outflow. However we will be able to evaluate the loss of subsurface water during period of no riverflow.

Installation of ground water observation wells is complete and a detailed study of ground water movement is underway. Records of surface runoff on the main stream and on the major tributaries are being obtained. The study is now in the recordkeeping and analysis stage.

It is expected that the preliminary phase of the study will be completed in 1966. In fiscal year 1967 clearing operations will begin and will require additional allotments. Since the study area lies entirely within the San Carlos Indian Reservation, it is expected that clearing operations will be undertaken with the advice and cooperation of the Bureau of Indian Affairs. Experiments on plant eradication are being conducted by the Bureau and the University of Arizona with our assistance.

It should be noted that the filling of the river has created large areas where surface water is being evaporated. Water losses are very high but do not represent losses expected from use of water by vegetation. The situation and the possibility of salvage of water by draining these ponds has been called to the attention of local interests.

The area which will be cleared in the future will be dependent on the degree to which drainage is undertaken prior to the beginning of this phase of the study.

CONNALLY "HOT OIL" ACT

Chairman HAYDEN. I observe that you intend to phase out all of your activities under the Connally "Hot Oil Act" by June 30, 1966. Would you please indicate why you plan to do this? Will any other agency take over this activity?

Mr. NOLAN. In answer to the last question first, to a very considerable degree in recent years, individual States have set up mechanisms whereby they are, in effect, carrying out the requirements that were set up in the Connally Act. The act was the result of very large production from the newly discovered east Texas field; this caused the movement of a great deal of oil from east Texas into the rest of the country and seriously damaged the economy of the other oil-producing areas.

Since then each of the States that has any large oil production has set up their own organization, such as Texas with its railroad commission. As a result there has been less and less need for the Federal assistance.

Chairman HAYDEN. The States have done this for their own protection?

Mr. NOLAN. They are doing it for their own protection and as a result we have felt that the time has now come when the Federal Government can drop out of this activity.

PLANS FOR NEW BUILDING AT DENVER

Chairman HAYDEN. You are asking $250,000 for architectural and engineering design of a new building at the Denver Federal Center. Would you please describe what you have in mind at that location?

Mr. NOLAN. About 2 years ago when our housing problems began to be increasingly acute, both in Denver and Menlo Park, we made some studies as to anticipated space requirements. If I didn't at the time, I would like now to submit to this committee for its records this space study for Denver.

Chairman HAYDEN. It will be received.

Mr. NOLAN. The predictions that were made then have been borne out. We have now exceeded the capacity of the existing headquarters building in Denver and are renting space in several places in Denver. This request for $250,000 is to permit us to make more accurate and detailed plans as to the additional space that would be needed and which could be added to the present construction at Denver where we have our main Rocky Mountain headquarters.

STATUS OF BUILDING IN WASHINGTON, D.C.

Chairman HAYDEN. In fiscal year 1964, Congress appropriated $100,000 to the Geological Survey to be used for site procurement and building planning for a Geological Survey building in the Washington metropolitan area. Has a contract yet been let for architectural and engineering design on this building?

Mr. NOLAN. The final design has not been let. This past year, through the General Services Administration, we did let a contract for the amount of $100,000 to make a site study and a general plan for the Survey building here. It is my understanding that the final report on this study is due this week. I have prepared, for the information of the committee, a statement in regard to our whole Washington area housing which I would like, sir, to put in the record for your information.

Chairman HAYDEN. The statement will be received for the record.

Mr. NOLAN. We are very hopeful that the General Services Administration on the receipt of this final report from our advisers will be able to move promptly to procure the site that may be recommended by the study and to proceed then to the detailed engineering plans.

Chairman HAYDEN. Are sites in the nearby Washington area under consideration?

Mr. NOLAN. There were six sites that were included in the architectural and engineering study. One of the recommendations in this report, as I understand it, will be an appraisal of these six sites.

Chairman HAYDEN. When will a final determination on design and site be made and when will construction funds be requested through the General Services Administration?

Mr. NOLAN. I would hope they would be requested next fiscal year because the General Services Administration currently has in its possession funds amounting to some $2 million for the combination of site procurement and detailed preparation of plans. And when that is completed, then I believe GSA will come to the Congress for construction funds.

(The statement referred to follows:)

LOCATION STUDY

The Geological Survey arranged with the General Services Administration for the negotiation of a contract with an architectural firm for a preliminary design and site study for the Survey building. Six sites were selected for consideration, with representatives of GSA, the National Capital Planning Commission, the National Capital Regional Planning Council, the National Park Service ,and the Geological Survey participating in the selection. A contract was signed by GSA for the preliminary design and site study on June 29. 1964. The funds ($100,000) provided for this purpose in Department of Interior appropriation for 1964 were transferred to GSA to finance this contract.

An extensive analysis of the Survey's space requirements was made by the architects, to provide a basis for detailed design work that is to be done subsequently, and to provide part of the information needed in the analysis of the six sites. The study of the six sites proceeded concurrently, taking into account such things as communication and transportation problems.

A preliminary review of their analysis was presented by the architects in November, at a meeting attended by representatives of GSA, NCPC, NCRPC, NPS, Budget Bureau, and the Geological Survey. A similar presentation was subsequently made before Secretary Udall. It has now been concluded, after careful study, that the most suitable site is a tract of land near Great Falls, Md., where the purchase of the entire tract would permit rounding out the George Washington Memorial Parkway in that area and at the same time include ample land for the Survey building. The tract so selected is known as the "Goldmine" property. The architects' recommendation is that the area be developed as a "geologic park," with the Survey facility consisting of low-rise buildings in a parklike setting.

Preliminary negotiations are now under way for the purchase of land for the George Washington Memorial Parkway and a site for the Survey building. No price agreement has been reached, however, and it is too early to state what the outcome may be. The General Services Administration already has funds for that part of the tract that would be devoted to the Survey building. It is hoped that this matter can be successfully resolved within a few months, and that the detailed design work, funds for which were appropriated to GSA in 1964 will be placed under contract without further delay.

WATER MANAGEMENT AT LAKE POINSETT, S. DAK.

Chairman HAYDEN. Any further questions?

Senator MUNDT. I have two, Mr. Chairman. Putting first things first, Mr. Nolan, I have a South Dakota question here. Your discussion of water resources investigations on page 40 sounds very interesting to me in connection with a South Dakota problem that has been brought to my attention.

I have here a copy of a letter and a handbook forwarded to me by some of my constituents near the spot called Lake Poinsett. It relates to water management and connected waters. They have made some general recommendations and need a little guidance. I thought that in the interest of saving time I would give you this letter and this booklet with the hope that sometime within the next week or 10 days you might write me a letter and a report.

Mr. NOLAN. I would be very glad to, sir.

Senator MUNDT. I would like for you to return the documents.

Mr. NOLAN. We will be glad to.

ALASKAN EARTHQUAKE

Senator MUNDT. This talk of the Alaskan earthquake, you mentioned that your Bureau indicated that areas were dangerous for housing developments in the Alaskan areas. I wonder if after you sent out those warnings they were followed. Did they build them where they shouldn't? What warning did you give them on the basis of your know-how?

Mr. NOLAN. There are two parts to your question. The initial work some years ago led to the publication of a bulletin with a map showing the danger areas—where there had been land movements in the past and where there might be land movements in the future.

Although that was publicly distributed, much of downtown Anchorage had already been built by that time. I think the bulletin did not have any immediate effect on zoning regulations. Following this last earthquake, however, a small group of Survey engineering geologists have been in Anchorage working not only with the Corps of Engineers and the Federal group up there but also with the city authorities.

I believe that their recommendations were very closely followed in the reconstruction that followed this earthquake. In other words, I believe there has been, to the extent that the city authorities were able to control it, utilization of the results of this survey.

Senator MUNDT. Did the earthquake, when it occurred on Good Friday, pretty well occur in the target areas you had designated in your map?

Mr. NOLAN. Yes. In fact, several of the areas we had shown as previously active were badly damaged by new slides.

Senator MUNDT. When you find such an area is there anything you can do to head off damage from an earthquake, or do you have to sit and wait for your prophecy to come true?

Mr. NOLAN. I am afraid with the present state of our knowledge it is pretty much that. On the other hand, I think, having recognized the conditions that would permit this damage to be done, it should be possible to develop a building code that would permit remedial measures to be taken for some types of construction.

Anchorage is built on gravel that overlies a layer of rock which we call the "Bootlegger Cove Clay," which is a very fine grained and slippery substance, particularly when wet.

When earth movement occurs as a result of an earthquake, and if the slippery material is saturated and under a heavy load, the material on top of it starts sliding. With adequate knowledge, it may be be possible in the future either to outline areas which are too hazardous for building, or to indicate where clay is so close to the surface that a suitable piling arrangement can provide a fair degree of confidence in minimizing danger.

Again, this is the kind of thing where you need knowledge in advance before you can take the proper measures to avoid damage in the future.

LIAISON BETWEEN BUREAU OF RECLAMATION AND CORPS OF ENGINEERS

Senator MUNDT. On page 45 of your justifications you outlined the plans for effective river regulations, and problems of floods and droughts, and water exploration and management all of which seem

to get into the field primarily served by the Bureau of Reclamation and the Corps of Engineers. I wondered what liaison you have with them or what comments would you make on these matters involving waters and floods.

Mr. NOLAN. We had ties with both the Corps and Bureau. They have both, to a considerable degree, supported by transfers of funds, the activities of the Survey in the water field. These are primarily in the collection of basic data. But with both the Bureau and the Corps, there has been some support of our topical studies, the results of which they find can be applied.

Senator MUNDT. They come to you for certain kinds of scientific knowledge?

Mr. NOLAN. That is right.

Senator MUNDT. They don't do it themselves? There is no overlapping?

Mr. NOLAN. I think in general they tend to support our studies which have general application. Where there is need for research on problems applicable to specific projects they take care of that themselves. I think this is roughly the dividing line. Would you want to add to that, Dr. Leopold?

Mr. LEOPOLD. It is in the basic data field that practically all agencies concerned with development turn to the Geological Survey for information. The basic data field, however, is so closely associated with certain kinds of applied and basic research that in order to both improve knowledge of how to use basic data and improve general knowledge which can be used in development plans, we have a modest amount of research which goes along with a large basic data program.

PUBLICATION OF MAPS

Senator MUNDT. You get out a lot of wonderful maps, Mr. Nolan. I wonder what percentage is made available as a governmental service and what is sold for dollars and how close you come to breaking even.

Mr. NOLAN. The topographic maps are sold to the general public and this next fiscal year we anticipate there will be a return to the Treasury of just under a million dollars. I think our estimate is about $950,000. About a fourth, as I remember the figures, of the distribution is directed either to other Federal agencies or distributed through the Congress.

As you know, there is an allocation of maps to each Member of the Congress. But as I recall the figures, roughly three-quarters are sold and about one-quarter are for free distribution. The price that we set is the price that is designed to return to the Government the cost of printing and distribution. Receipts go to the Treasury, not to us.

Senator MUNDT. Of the maps that are sold?

Mr. NOLAN. Yes.

Senator MUNDT. Not of the whole map program?

Mr. NOLAN. No. As I remember when this procedure was started it was recognized that there is a Federal requirement for maps, and that this need is appropriately financed by Federal funds.

Senator MUNDT. How does the nine hundred and some thousand dollars relate to the total cost of the map printing and publishing program?

Mr. NOLAN. If my recollection of three-quarters and one-quarter is correct, this would be about the proportion.

Senator MUNDT. In other words, we appropriate or spend about $4 million annually making maps and get back roughly $1 million?

Mr. NOLAN. No, about three-quarters are sold, and one-quarter is free. The total appropriation for making maps is much larger, however. It is over $20 million. The part of the mapping process that goes into setting the price is not the whole series of mapping operations such as aerial photography, photogrammetry, and field surveys. It is just the part for printing and distribution.

Senator MUNDT. I understand.

Mr. NOLAN. As far as the maps that go to the public are concerned, the cost of printing and distributing these maps is designed to be returned to the Treasury through the price set.

Senator MUNDT. I had a letter from a constituent who has an idea that he promotes constantly that Government services should be as nearly as possible self-financing. But it is quite obvious from your standards that this would price your maps way out of any reasonable cost if you include the whole $20 million of cost.

Mr. NOLAN. Of course, what I suspect would happen in that event is that the Department of Defense would have to take over the mapping business, because they have been one of the largest users.

Senator MUNDT. They pretty much enjoy the position of having funds unlimited, too. So, they do very well.

Chairman HAYDEN. Any questions?

Senator BYRD. No, Mr. Chairman.

Chairman HAYDEN. We thank you for your appearance.

THURSDAY, FEBRUARY 18, 1965.

BUREAU OF OUTDOOR RECREATION

STATEMENTS OF EDWARD C. CRAFTS, DIRECTOR, LAWRENCE N. STEVENS, ASSOCIATE DIRECTOR; JOHN F. SHANKLIN, ASSISTANT DIRECTOR; A. HEATON UNDERHILL, ASSISTANT DIRECTOR; DANIEL M. OGDEN, JR., ASSISTANT DIRECTOR; HARRY W. RICE, ASSISTANT DIRECTOR; WILLIAM C. DENT, CHIEF, DIVISION OF NATIONWIDE PLANNING; ALBERT F. TITLOW, BUDGET OFFICER, BUREAU OF OUTDOOR RECREATION; AND HARVEY B. MACK, ASSISTANT DIRECTOR OF BUDGET

FOREST SERVICE

STATEMENTS OF M. M. NELSON, DEPUTY CHIEF; RUSSELL P. McROREY, DIRECTOR, DIVISION OF LAND ADJUSTMENT; RICHARD HARRIS, FORESTER; AND W. M. IRBY, BUDGET OFFICER

NATIONAL PARK SERVICE

STATEMENTS OF C. P. MONTGOMERY, ASSISTANT DIRECTOR; AND DONALD E. LEE, CHIEF, DIVISION OF LAND AND WATER RIGHTS

BUREAU OF SPORT FISHERIES AND WILDLIFE

STATEMENTS OF LANSING A. PARKER, ASSOCIATE DIRECTOR AND CARL V. FERMANICH, ASSISTANT CHIEF, DIVISION OF WILDLIFE REFUGES

THE 1966 BUDGET REQUEST

Chairman HAYDEN. We will hear the Bureau of Outdoor Recreation. Mr. Crafts, for the fiscal year 1966, the Bureau of Outdoor Recreation proposes an appropriation of $3,398,000, for Salaries and Expenses, which is $698,000 more than the amount which has thus far been appropriated for fiscal year 1965. There is pending a pay act supplemental in the amount of $80,000. The justification statement supporting this request will be placed in the record.

(The justification referred to follows:)

SALARIES AND EXPENSES

HIGHLIGHT STATEMENT

The budget for fiscal year 1966 covers the fourth full year of operations of the Bureau of Outdoor Recreation. To finance its programs for that year, other than those authorized by Public Law 88-578 which are set forth in a separate document, the Bureau is requesting $3,398,000, an increase of $650,000 over the amount available in fiscal year 1965. The increase will be used to accelerate the development of the nationwide outdoor recreation plan and to strengthen the Bureau's program concerning water resources projects and comprehensive river basin surveys.

The funds requested for fiscal year 1966 are compared with amounts available in fiscal year 1965 by subactivities:

Subactivity	Fiscal years—		Increase
	1965	1966	
Planning and surveys	$1,123,000	$1,673,000	$550,000
Cooperative services	507,000	507,000	
Federal coordination	1,036,000	1,136,000	100,000
Research and education	82,000	82,000	
Total	2,748,000	3,398,000	650,000

The major programs which the Bureau will conduct, and which are authorized by the act of May 28, 1963 (Public Law 88–29), are:

(*a*) Formulate a nationwide outdoor recreation plan as required by the act;

(*b*) Conduct studies of special areas offering significant recreation potential and the study of the recreation potential of water resources projects and major river basins;

(*c*) Provide technical assistance to States, local governments, and to the private sector;

(*d*) Promote coordination of Federal programs concerned with outdoor recreation; and

(*e*) Conduct research and assist colleges and universities in developing courses in education which will prepare students for professional work related to outdoor recreation.

The nationwide outdoor recreation plan, among other things, will set forth the needs of the public for outdoor recreation and the current and foreseeable availability in the future of outdoor recreation resources to meet those needs. The plan must be completed and submitted to the President for transmittal to the Congress within 5 years from the date of the act. The increase of $550,000 under "Planning and surveys" will be used to accelerate the preparation of this plan so as to meet the deadline set by Congress for its completion. The magnitude of this task requires an acceleration of present levels of effort if the deadline is to be met and if the plan is to be of a quality sufficient to guide future Federal recreation expenditures. The major areas of concentration will be the conduct of studies on the effect of a number of socioeconomic factors in shaping demand of the public for outdoor recreation opportunities and the forecasting of future trends in demand. The determination of demand is the essential key to the development of the nationwide plan.

Studies will continue on special areas to determine their suitability for outdoor recreation purposes. Certain areas on which some work has been done will continue to be studied in the fiscal year 1966. These include:

North Cascades Mountains, Wash.
Sawtooth Mountains, Idaho.
Allagash River, Maine.
Pictured Rocks, Mich.
Raystown Reservoir, Pa.

Studies of special areas are usually conducted jointly with other concerned Federal agencies to determine whether they should be preserved for outdoor recreation purposes, to determine whether they should be national recreation areas or some other type, and to recommend the agency to be charged with their administration.

The Bureau will increase its recreation planning efforts on water resources projects and in river basins. Studies will be made to identify the demands and needs for water-oriented recreation opportunities, to evaluate the recreation potential and to formulate comprehensive recreation plans for the utilization of water resources. These studies generally will be conducted as a part of the comprehensive river basin review being undertaken by various Federal agencies under coordinated direction. The increase of $100,000 under Federal coordination will be used to expand the Bureau's efforts to meet its responsibilities in formulating, coordinating, and reviewing the recreation aspects of water resources projects and river basin studies.

Upon request, the Bureau will provide technical assistance to States and local agencies concerning the broad aspects of outdoor recreation matters, including providing assistance in the development of the statewide plans. Reviews also will be made of applications from States and local bodies to acquire surplus Federal lands or certain public domain for recreation purposes. The Bureau will review the applications and determine the suitability of the area for recreation development and make recommendations accordingly.

The Bureau will continue to move forward in promoting the coordination of Federal programs related to outdoor recreation. This will be accomplished primarily through the review of programs, budgets, and proposed legislation of the Federal agencies. In an attempt to provide uniformity among the Federal agencies, efforts will be made to integrate the efforts of all Federal outdoor recreation programing and budgeting to be used by the agencies conducting outdoor recreation programs. This will provide the means for a better evaluation of the programs as to need, priority, balance, and consistency. It will insure better planning in that proposed investments over a period of years will be scheduled and can be evaluated in relation to meeting regional needs.

The review of proposed legislation, related to outdoor recreation, will give the Bureau an opportunity to provide its views on the need for the legislation, its adequacy, and the degree to which this legislation would further the Nation's outdoor recreation program.

The workload imposed upon the Bureau, in its capacity as a staff to the Recreation Advisory Council, is expected to be heavy during the fiscal year 1966. It is anticipated that five major and several minor studies will be undertaken during that fiscal year. These studies will range from the development of procedures to establish and assure consistency among various grants-in-aid programs to the development of recommendations for improved tax policies on outdoor recreation enterprises. Indications point to an additional 20 studies which will possibly be considered by the Council during fiscal year 1966. This indicates a significant additional workload on the Bureau.

The Bureau will continue its research and education program at the current level. The efforts of the small research staff will be devoted primarily to support of the nationwide outdoor recreation plan. Information is needed on what people like to do in outdoor recreation; economic aspects of outdoor recreation; and other matters of direct importance in the development of the nationwide outdoor recreation plan. Material of this nature should be developed under the guidance of research-oriented personnel. The Bureau will continue on a limited scale to work with colleges and universities in developing curricula which will provide students with education and training in various aspects of outdoor recreation.

Under date of September 5, 1964, the President approved the Land and Water Conservation Fund Act of 1965 (Public Law 88–578). This act established a fund to which will be credited certain revenues from recreation user fees and admission fees, sales of surplus real and related personal property, and taxes on motorboat fuels. These revenues, when appropriated, are available to three Federal agencies for acquisition of land and water areas, as otherwise authorized by the Congress, and are available to States and local governments as grants for recreation planning, acquisition, and development. Under delegated authority, the Bureau of Outdoor Recreation is responsible for the conduct of a major portion of this program.

The act became effective January 1, 1965, but, prior to that time, considerable planning and preliminary actions had to be taken. These included meeting with States, Federal agencies, and private organizations to discuss the act, the preparation of user-fee regulations, preparation of guidelines to States in developing comprehensive State plans, designing and printing automobile bumper stickers, drafting regulations for States to obtain matching funds, and many other actions.

Senate Report 971 on the "Interior Department and related agencies appropriation bill, 1965," contains the following statement:

"It is the feeling of the committee that the agencies included in this bill have not made maximum use of excess personal property available through the General Services Administration. The committee urges all agencies to make vigorous efforts during the coming year to utilize General Services Administration property and, when fiscal year 1966 budget estimates are justified, to make a report on accomplishments and comparisons with previous years."

The Bureau of Outdoor Recreation has made a special effort to utilize available surplus personal property. This is indicated by the following tabulation showing the source of property and the amounts received for fiscal years 1963 and 1964.

The Bureau was organized in April 1962. For that reason, it would have no information on earlier fiscal years.

Source	Fiscal years	
	1963	1964
General Services Administration	$1,462.88	$3,755.00
Interior	15,590.47	12,234.04

As in previous years, the employees of the Bureau have performed many hours of uncompensated overtime and have lost accrued annual leave. During the past 12 months, employees have devoted over 7,000 hours of uncompensated overtime to their assignments at a value of approximately $30,000 and have forfeited accrued annual leave of over 1,200 hours valued at approximately $5,500. In addition, the Bureau has forgone travel related to its programs totaling over $100,000 and has not been able to perform important work involving requests for assistance from States, studies of water resources projects, and other recreation-related activities in the neighborhood of 50 man-years of effort. The increase requested for the fiscal year 1966 will help materially in achieving a closer balance of work needs to staff capability.

The efforts of the Bureau are directed to the tremendous task of meeting the present and future needs for outdoor recreation areas and facilities. The Bureau will seek to accomplish this objective through coordinated action on the part of Federal, State, and local governments and the private sector. Such coordinated action is essential and is recognized by the Congress as expressed in the preamble to the act of May 28, 1963 (Public Law 88–29):

"* * * That the Congress finds and declares it to be desirable that all American people of present and future generations be assured outdoor recreation resources, and that it is desirable for all levels of government and private interests to take prompt and coordinated action to the extent practicable; * * * To conserve, develop, and utilize such resources for the benefit and enjoyment of the American people."

Most outdoor recreation areas now are overcrowded and inadequate to meet current demands and these demands are increasing at a very rapid rate. With the Nation's population expected to reach 350 million by the year 2000, just 36 years from now, it is important that immediate action be taken to make additional areas and facilities available. The increase in demand is illustrated in the following tabulation which compares visitations to certain areas in 1952 and in 1963:

Areas	Number of visitations		
	1952	1963	Percent increase
	Millions	*Millions*	
Corps of Engineers water projects	30.0	147.0	390
Forest Service areas	33.0	122.5	271
National Park Service areas	47.4	94.1	99
National wildlife refuges	4.3	13.7	219
Tennessee Valley Authority projects	19.8	45.5	130
Bureau of Reclamation projects	7.7	34.7	351
State parks	149.3	[1] 304.6	104
Total	291.5	762.1	161

[1] Actual 1962 figures were increased 7 percent.

EXPLANATION OF LANGUAGE CHANGE

The proposed language includes a new phrase, "not otherwise provided for." This language is needed for the "Salaries and expenses" appropriation to insure that the Bureau will not be limited to that appropriation in financing its expenses. In addition to the "Salaries and expenses" appropriation, the Bureau will receive

financing in 1966 from the land and water conservation fund of those expenses necessary in administering that program.

Appropriation, 1964		$1,900,000
Appropriation, 1965		2,700,000
Pay cost supplemental		80,000
Total appropriation, 1965		2,780,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration (building rent)		−32,000
Total available, 1965		2,748,000

SUMMARY OF INCREASES AND DECREASES, 1966

Planning and cooperative services:		
To provide for expansion of work on the nationwide outdoor recreation plan. The major portion of the increase is for studies concerning demand for outdoor recreation, inventory of private outdoor recreation facilities, and for automatic data processing work to store and analyze data collected	$569,000	
Nonrecurring item for building rent	−19,000	
		+550,000
Coordination, education, and research:		
For additional work on water resources planning projects of various Federal agencies	113,000	
Nonrecurring item for building rent	−13,000	
		+100,000
Net increase, 1966		650,000
Budget estimate, 1966		3,398,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers [1]	Amount available
(1) Planning and cooperative services	$1,229,553	$1,600,000	$49,000	−$19,000	$1,630,000
(2) Coordination, education, and research	664,532	1,100,000	31,000	−13,000	1,118,000
Unobligated balance lapsing	5,915				
Total	1,900,000	2,700,000	80,000	−32,000	2,748,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
1. Planning and cooperative services	$1,229,553	$1,630,000	$2,180,000	+$550,000
2. Coordination, education, and research	664,532	1,118,000	1,218,000	+100,000
Unobligated balance lapsing	5,915			
Total	1,900,000	2,748,000	3,398,000	+650,000

[1] Represents transfers to General Services Administration.

1. PLANNING AND COOPERATIVE SERVICES

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
(a) Planning and surveys	$735,273	$1,123,000	$1,673,000	+$550,000
(b) Cooperative services	494,280	507,000	507,000	----------
Total	1,229,553	1,630,000	2,180,000	+550,000

(a) *Planning and surveys*

The estimate for 1966 is $1,673,000, an increase of $550,000 consisting of—

(1) An increase of $569,000 for expansion of work on the nationwide outdoor recreation plan;

(2) A decrease of $19,000 due to nonrecurring building rents.

Need for increase.—The increase requested is to accelerate the development of the plan within the time limit set by Public Law 88–29. The main areas of concentration to be financed with the increase will be the conduct of studies on the effect of a number of socioeconomic factors in shaping the demand for outdoor recreation activities and the forecasting of future trends in demand. This is the key to the development of the nationwide plan.

Plan of work.—Funds for this subactivity will provide for continuing the preparation and development of the nationwide outdoor recreation plan which ranks among the first in order of priority among Bureau responsibilities. This plan will provide a statement of —

1. Present and potential supply of outdoor recreation recources, classified according to a uniform system.
2. Present and future demand for outdoor recreation opportunities.
3. Determination of outdoor recreation needs.
4. Critical outdoor recreation problems.
5. Recommendations and programs for meeting outdoor recreation needs.

It will provide the framework for the review and assessment of the efforts of all Federal, State, and local agencies and the private sector in meeting outdoor recreation needs of this Nation. The plan will recommend action programs by Federal agencies and will identify broad actions that should be taken by State, and local agencies and private interests to meet the needs of outdoor recreation. It will aid in providing assistance to interested governmental and private agencies; facilitate interstate and regional cooperation in planning, acquisition, and development of outdoor recreation resources; and provide a basis for relating outdoor recreation resources to other uses of the Nation's natural resources.

The following chart provides a visual portrayal of the steps to be taken in developing the plan.

NATIONWIDE OUTDOOR RECREATION PLANNING PROGRAM

PHASE I. PROGRAM DEVELOPMENT, COORDINATION, AND DIRECTION

This is the overall development and administration of the program needed to produce a nationwide plan. It is recognized as a specific phase to identify administrative and coordinative manpower and time needs required by all phases but not accountable to the specific programs and projects of these phases.

PHASE II. EVALUATION OF DEMAND

Present and future demand for outdoor recreation will be determined and evaluated. The relationship of factors such as population, participation, preferences, socioeconomic conditions, mobility, and leisure time to present and future demand will be analysed.

PHASE III. EVALUATION OF SUPPLY

Federal, State, local, and private recreation areas and facilities are to be inventoried and evaluated in relation to current and projected demands. Capabilities of Federal, State, and local agencies and the private sector are being determined and their role in providing recreation opportunities identified.

PHASE IV. IDENTIFICATION AND ANALYSIS OF NEEDS AND PROBLEMS

The relationship of demand to supply will indicate needs for areas, facilities, and programs. This phase includes the identification and analysis of critical problems in relation to the capability of Federal, State, and local agencies and private enterprise to meet the demand for recreation opportunities.

PHASE V. DEVELOPMENT OF RECOMMENDATIONS AND PROGRAMS

Based on the evaluation of data and studies from phases 1, 2, 3, and 4, recommendations for action programs will be prepared.

PHASE VI. PREPARATION OF REPORTS AND GRAPHICS

This phase of operations is primarily concerned with the production of the main and supplementary reports and revisions to nationwide plan.

During fiscal year 1966, the Bureau will summarize by States the results of an inventory expected to be completed in 1965 of outdoor recreation areas and facilities administered by Federal, State, and local governments. Tabulations of the inventories will be furnished the States upon request to assist them in the development of statewide outdoor recreation plans.

Very little information on a nationwide basis is available on the present and potential contributions of the private sector in meeting the needs for outdoor recreation areas and facilities. Using sampling methods, the Bureau will inventory the private sector's enterprises in order to assess the potential of the private sector in meeting future needs and to recommend, where appropriate, ways and means of enhancing its capability in this regard.

In order to formulate a meaningful nationwide plan that will provide a sound basis for developing recreation programs by all administering agencies, the Bureau in 1966 will conduct surveys to obtain data on actual participation in outdoor recreation, on the willingness of the public to substitute activities and/or locations in satisfying demands, on the effect of a number of socioeconomic factors on shaping the demand of the public, and on the desires of the people for various kinds of outdoor recreation opportunities. Most of these data are expected to be obtained by contract through (a) Bureau of Census-type techniques to update the Outdoor Recreation Resources Review Commission data on participation and preferences; and (b) origin and destination studies. Also, the assistance of other Federal agencies will be utilized for the projection of population and certain other socioeconomic factors. Comparisons of these need-and-demand data in relation to supply of resources will be made and evaluated.

To handle this large volume of varied data efficiently and effectively and to interplay the major components for complete analysis, the use of automatic data-processing techniques and equipment becomes essential. The Bureau does not contemplate acquiring equipment for this purpose, but will utilize existing facilities of the Department and other Federal agencies.

The nationwide outdoor recreation plan is required to be submitted to the President and the Congress by May of 1968; however, it is planned to have this work completed sometime before that date. Increases in professional staff will be required, mainly in the regional offices, to conduct the planning and coordination necessary to develop data for the plan.

A function closely related to the nationwide outdoor recreation plan and one in which the Bureau will continue to be involved in 1966 is the study of special areas to determine whether they are suitable for outdoor recreation purposes, whether they should be managed for public outdoor recreation purposes and, if so, to recommend the type of development that should be undertaken and the proper agency to administer the areas. These studies are undertaken upon requests from various sources, including the Secretary of the Interior, the Recreation Advisory Council, and Members of Congress. Also, certain areas are expected to be found as part of the nationwide planning effort in inventorying potential supply that will require special study. The special area studies vary in complexity, and some are handled as joint projects with other agencies, both Federal and State. The specific areas expected to be reviewed will not be known until the Bureau has received assignments. Based on past experience, at least

six new studies will be undertaken during 1966. In addition, work will be continued on studies of the following areas which are presently underway:

Fort Robinson, Nebr.
North Cascades Mountains, Wash.
Sawtooth Mountains, Idaho.
Allagash River, Maine.
Apostle Islands, Wis.
Pictured Rocks, Mich.
Raystown Reservoir, Pa.

Status of planning and surveys program.—The Bureau developed and distributed a comprehensive manual containing the forms to be used and guidelines for assimilating data and preparing the nationwide outdoor recreation plan. This document was submitted to Federal and State agencies with a request that an inventory of existing areas and facilities be compiled. It is anticipated that the major portion of the inventory phase will be completed by April 1, with the remainder to be completed by early summer.

A contract has been completed under which sampling methods were developed for inventorying recreation areas and facilities provided by the private sector. Procedures provide for taking samples of selected counties throughout the Nation and determining the supply of recreation resources in these counties. Through the use of statistical methods, based on the sample involved, projections would be made of the total recreation resources of the Nation provided by the private sector.

The Bureau has entered into a contract with the Bureau of Standards for developing automatic data processing techniques for analyzing supply and demand data. This preliminary work is particularly important since the details of programing information into the machines and retrieving information needed are complex. The development of the techniques in advance of the actual processing will save considerable time.

The Bureau has been involved extensively in the review of special areas which offer recreation potential. Most of these areas are of relatively large size and would meet the needs of a large number of recreationists.

The following are examples of some of the areas in which the Bureau has been involved and the actions which have been taken based on recommendations and the coordinating efforts of this Bureau:

Area	*Action*
Between-the-Lakes, Tenn	Congress has appropriated money to TVA to begin this work. It will be a demonstration project to show how recreation can be an asset to a region.
Fire Island, N.Y	Legislation establishing Fire Island as a national recreation area was enacted September 1964.
Assateague Island (Maryland and Virginia); Big Horn Canyon (Montana and Wyoming); Whiskeytown-Shasta-Trinity area (California); Spruce Knob-Seneca Rocks (West Virginia).	Bills were introduced in the 88th Cong. to establish these areas for Federal administration, and are expected to be reintroduced in the 89th Cong. Continuing attention will be needed by the Bureau pending congressional action.
Allagash River, Maine; Guadalupe Mountains, Tex.; and Islandia, Fla.	Recommended for Federal administration. Continuing attention will be needed by the Bureau pending any congressional action.
Allegheny Reservoir (New York and Pennsylvania).	Not recommended for national recreation area. Recommended that Forest Service administer the lands and develop recreational potential; recommendation approved by Recreation Advisory Council and now being implemented.

There are other areas which still are being considered or studied by the Bureau, some of which probably will not be completed until fiscal year 1966. Examples include a proposed Redwoods National Park, Calif., a proposed Voyageurs National Park, Minn., a proposed Prairielands Parkway, and proposed national recreation areas at Flaming Gorge, Utah and Wyo., and Glen Canyon, Ariz. and Utah.

Under this subactivity, the Bureau is also engaged in other special projects which relate to the nationwide outdoor recreation plan. Examples of such projects are the wild rivers study, the Lewis and Clark Trail plan, and the Appalachian Trail.

Beginning in the spring of 1963, the Departments of the Interior and Agriculture jointly began a study of some of the Nation's rivers that are still in a relatively undeveloped condition. The methods developed in this study will be used in achieving one of the basic objectives as recommended by the Secretaries of the Interior, Agriculture, Army, and Health, Education, and Welfare. The objectives of the study have been to define the need to protect a share of the Nation's rivers or segments of rivers and to identify rivers that have outstanding wild characteristics. Approximately 80 rivers have been considered in this study, either on the basis of actual field investigation or from information available as a result of other studies. The initial field studies have been completed and a report to the Secretaries of the Interior and Agriculture will be issued in the near future. This report will present the findings and recommendations of the wild rivers study team with regard to the rivers considered and point out steps that might be taken to protect the wild qualities of the rivers in future planning. These studies could lead to proposed legislation to establish a national wild river system and to protect and enhance their outdoor recreation opportunities.

The Lewis and Clark Trail plan involves the conservation, recreation, historic, and fish and wildlife values in the 10 States along this historic route from Missouri to the Pacific Northwest. The Bureau is conducting this study in cooperation with several other Government agencies, other Interior bureaus, the 10 States, and with local and private interests. The purpose of this project is to identify and develop the recreation and related resources of the trail for public use. A final report will be available in fiscal year 1965. The Congress has recently passed legislation to establish a Lewis and Clark Trail Commission, which, among other things, will advance public awareness and knowledge of the far-reaching and historic significance of the Lewis and Clark Expedition and thereby encourage long-term conservation objectives in the public interest, as well as the public use and outdoor recreation benefits therefrom.

The Appalachian Trail runs from Maine to Georgia along the crest of the White, Green, Berkshire, and Appalachian Mountains. It has been constructed and maintained largely by volunteers, even where it traverses public lands. There is increasing danger that the continuity of this trail may be permanently broken by encroaching real estate developments and road construction. The Bureau is studying possible means of preserving this trail for outdoor recreation.

On a reimbursable basis, the Bureau conducts special studies on tourism for the Area Redevelopment Administration. This work involves the review of certain areas of the Nation to determine the degree to which recreation opportunities can be developed which in turn would improve the economic position of the community. During the past year, the Bureau has completed studies and submitted reports with recommendations to the Area Redevelopment Administration on 12 areas as listed:

Idaho Panhandle area.
Olympic Peninsula, Wash.
Shawnee State Forest area, Scioto County, Ohio.
Monroe County, Ohio.
West Virginia Panhandle.
Suwanee River, Fla.
Western North Carolina.
Lake Champlain, N.Y. and Vt.
Southern Laurel highlands (carried out by northeast region).
Juaniata Mountains area, south-central Pennsylvania.
Pine Ridge Indian Reservation area, South Dakota.
Eastern Shore area, Maryland.

(*b*) *Cooperative services*

The estimate for 1966 is $507,000, the same amount as is available for 1965.

Plan of work.—There is an increasing awareness by the States of the importance of outdoor recreation and of the responsibility that rests upon the States for meeting the needs. A great many States are taking action to meet these needs. Statewide plans are being developed, more funds are being made available by many, and a concern is being felt by all. In attempting to meet the demands being made upon them for outdoor recreation opportunities and facilities, the States, in turn, are asking the Bureau for more technical assistance to aid them in their job of providing recreation opportunities.

The funds requested will provide for technical assistance to aid the States in the development of sound statewide recreation plans and to a limited extent, will permit assistance to States, local governments, and private interests in broad recreation planning.

As pointed out by the Outdoor Recreation Resources Review Commission, the most important single force in outdoor recreation is private endeavor. There are tremendous opportunities for development of outdoor recreation facilities on private lands despite the fact that there has been a large growth in private facilities in recent years. The Federal Government, States, and their subdivisions should encourage and assist private interests as one means of helping to meet outdoor recreation needs. The Bureau will encourage expanded private efforts and will provide limited technical assistance to the private sector in 1966.

The Bureau will provide assistance to Federal agencies as shown:

(1) State and local governments can, under certain conditions, obtain grants from the Housing and Home Finance Agency to assist in providing recreation, conservation, and scenic areas within urban complexes. The act provides that, in reviewing applications for such grants, the Administrator of the Housing and Home Finance Agency shall consult with the Secretary of the Interior on the status of recreation planning for the areas to be served by the open-space land acquired with the grants. The Secretary's responsibility under this act has been delegated to the Bureau of Outdoor Recreation.

(2) Applications received by the General Services Administration from States or local governments to purchase surplus Federal lands for park and recreation purposes are reviewed by the Bureau and recommendations are made to GSA on the suitability of the area for such purposes. For a period of 20 years after any transfer, this Bureau is responsible for enforcing compliance with the terms and conditions in the deeds of transfer of these properties (approximately 285 as of December 1964). This work is accomplished by review of the grantees' biennial reports and by inspection of the property itself. In certain instances, a grantee may request relief from the conditions of the deeds of transfer, and such requests must be carefully reviewed to determine whether the granting of such requests would be desirable and in conformance with the requirements of law.

Because of the accelerated pace in the deactivation of military bases, it is expected that the workload in reviewing applications and investigation reports will increase substantially, possibly doubling the number now reviewed each year.

(3) The Bureau will continue to assist the Bureau of Land Management in reviewing applications from States and local governments to acquire public lands for recreation purposes. An increasingly heavy workload is expected as a result of the inventory that the Bureau of Land Management is making of public lands and the classification of lands suitable and desirable for park and recreation use.

Status of cooperatives services program.—The Bureau's assistance to States during the past year has been limited to providing help in connection with outdoor recreation planning and, particularly, to providing advice and assistance in the development of statewide recreation plans. The Bureau has issued a technical manual entitled, "Guidebook for State Outdoor Recreation Planning," which provides information and technical assistance to States in their planning activities. Many of the States expressed a need for such a manual, and it is expected that it will be extremely useful in developing uniformity of planning efforts and particularly useful in providing guidance to those States that do not have highly skilled recreation planners.

The Bureau has also prepared a technical document entitled, "Requirements for Comprehensive State Outdoor Recreation Plans." This is a document for State guidance for qualifying for participation in the grants-in-aid program authorized by Public Law 88-578. In the fiscal year 1966, publications and other instructional material relating to the land and water conservation fund will be financed from funds made available out of the fund.

The Bureau has made a review of its activities in relation to the recreation activities of other agencies of the Government. This review was conducted as a result of the statement in conference report 1519 on the Department of Interior and related agencies appropriation bill, 1965. The statement is quoted:

"The conferees are aware of efforts now being made to assure that activities of the Bureau of Outdoor Recreation do not duplicate or overlap activities of other agencies of the Department of the Interior, and concur in the Senate report language requiring a report on the criteria to be established to eliminate and avoid duplication."

It was found that the possibilities of overlap or duplication of activities existed mainly in planning efforts of the agencies concerned. As a result of the review,

agreements were prepared which delineate the planning responsibilities of the various agencies. Agreements have been prepared between the Bureau of Outdoor Recreation and the National Park Service, between the Bureau of Outdoor Recreation and Bureau of Sport Fisheries and Wildlife, and a draft agreement has been prepared between the Bureau of Outdoor Recreation and the Housing and Home Finance Agency.

The Bureau reviewed and reported on 24 applications from States and local governments at the request of the General Services Administration concerning acquisition of surplus lands for park and recreation purposes and made on-site inspections together with reports on the inspections covering 120 properties. In addition, the Bureau reviewed 138 compliance reports submitted by State and local governments. During the year, the Bureau was involved in 12 major compliance cases, some of which involved the preparation of exchange deeds or release documents.

The Bureau also reviewed for the Bureau of Land Management approximately 60 applications from State and local agencies for public domain lands for park and recreation areas. These applications involve 15,000 acres of public domain lands. At the time the administration announced the proposed closing of a number of military bases, the Bureau made a preliminary evaluation of approximately 80 of these bases to obtain a general indication of their recreation potential.

2. Coordination, Education, and Research

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
(a) Federal coordination	$588,407	$1,036,000	$1,136,000	+$100,000
(b) Research and education	76,125	82,000	82,000	
Total	664,532	1,118,000	1,218,000	+100,000

(a) *Federal coordination*

The estimate for fiscal year 1966 is $1,136,000, an increase of $100,000, consisting of:

(1) An increase of $113,000 for studies of water resource projects and major river basins;

(2) A decrease of $13,000 due to nonrecurring building rents.

Need for increase.—The increase requested is to provide additional staff to carry out the Bureau's heavy responsibilities for reviewing the recreation potential of various water resource projects and for conducting studies of major river basins.

Plan of work.—The Bureau's Federal coordination responsibilities are authorized by Public Law 88–29, which provides in part:

"* * * (1) Cooperate with and provide technical assistance to Federal departments and agencies and obtain from them information, data, reports, advice, and assistance that are needed and can reasonably be furnished in carrying out the purposes of this act, and (2) promote coordination of Federal plans and activities generally relating to outdoor recreation * * *."

During fiscal year 1966, the Bureau will continue its reviews of the programs, budgets, proposed legislation, authorities, functions, and operations of some 20 Federal agencies (natural resources and other) engaged in outdoor recreation activities. Agencies which are directly concerned with Federal outdoor recreation resources programs and with which the Bureau will be working in correlating the planning for the development of the full recreation potential of their projects include, among others, the Corps of Engineers, the Tennessee Valley Authority, several agencies of the Department of Agriculture, and agencies of the Department of the Interior, such as the National Park Service, the Bureau of Reclamation, and the Bureau of Sport Fisheries and Wildlife. This correlation will also apply to programs of Federal agencies not involved directly in the management of natural resources but which have programs of significant importance to recreation—such as Public Health Service, Bureau of Public Roads, Area Redevelopment Administration, General Services Administration, and Small Business Administration.

The Bureau's review of coordination problems within the Federal Government which require study shows that priority should be given to six major categories:

1. Planning;
2. Land acquisition and facility development;
3. Research;
4. Technical and financial assistance;
5. Management and operations; and
6. Revenues.

The review of the first item, Federal recreation planning, has been completed and a report is scheduled for issuance in the near future. Studies will commence on the other categories as soon as possible.

The Bureau will take the lead in the development of long-range Federal recreation programs. Such long-range programs are essential in establishing an orderly Federal effort in meeting recreation needs. Criteria will be formulated that will be helpful to all Federal agencies in developing long-range programs and in preparing the annual outdoor recreation budgets. Long-range programing will provide the Bureau of the Budget and the Congress with information on Federal agency plans and, within the framework of the nationwide outdoor recreation plan, will provide the means for establishing priorities, developing proper balance, and giving information on the possible financial requirements over a span of years. Reviews will be made by the Bureau of long-range programs developed by individual Federal agencies, and recommendations for adjustments will be made as necessary.

Guidelines and methodology concerning the recreation aspects of water resource projects will be developed. This work will be related to Senate Document 97 and will assure that recreation is given due consideration in all Federal water resource development and management projects. Work under these activities will include:

1. The projection of population growth and demand for recreation opportunity for specific basins and project service areas;
2. Preparing guidelines for evaluating the recreation component of Federal water resource development projects;
3. Determining the benefits and costs of water resource development projects;
4. Calculating supply and demand imbalances for outdoor recreation in specific geographic areas;
5. Determining priority systems to guide economic investments in outdoor recreation facilities; and
6. Making recommendations on lands to be acquired for recreation purposes.

The Bureau will continue to provide the necessary staff assistance to the Recreation Advisory Council.

This Council was established by Executive Order 11017, issued April 28, 1962. The order states, in part, as follows:

"The Secretary of the Interior, in consultation with the other members of the Council, shall be responsible for developing methods and procedures for improved interagency coordination in the development and carrying out of national outdoor recreation policies and programs."

The principal responsibility for supplying staff work on Recreation Advisory Council assignments rests with the Bureau of Outdoor Recreation. Depending on the nature of the assignment undertaken at the request of the Council, professional assistance is quite frequently obtained from other departments or agencies. For example, assignments in the fields of public health, water pollution, and scenic highways, during fiscal year 1964, required the assignment of competent personnel from the Department of Health, Education, and Welfare, and the Department of Commerce.

During the fiscal year 1966, it is anticipated that the Bureau will be called upon to conduct approximately four major studies under the auspices of the Council. These studies include:

1. Procedures to establish and assure consistency among various grants-in-aid programs involving the planning, acquisition, or development of outdoor recreation areas and facilities;
2. Development of a statement recommending improved tax policies on outdoor recreation enterprises;
3. Utilization by State or local governments of federally owned lands through long-term leases or other means; and
4. Development of a statement of the scope and objectives of the Recreation Advisory Council and staff, as well as detailed operating procedures for both.

In addition to the foregoing, there are some 20 additional items which have been proposed for consideration by the Council. It can be expected that others

will be added from time to time. Some of these may be undertaken during fiscal year 1966 if time and staffing permit.

A very important coordinating function of the Bureau is its review and analysis of proposed legislation by Federal agencies related to outdoor recreation. The Bureau provides an impartial review of such proposals and makes recommendations to the Secretary or to the Bureau of the Budget on whether or not legislation should be supported and, if so, whether it should be submitted as is or be amended. In its review, the Bureau considers the need for the legislation in relation to other proposals and their relative priorities considering the general limitation on the possible available Federal funds for recreation purposes.

Efforts will be continued to coordinate the information programs of the various Federal agencies as they relate to outdoor recreation. The Bureau has established a procedure for gathering all available booklets, brochures, and related materials published for public consumption by Federal agencies having outdoor recreation responsibilities and has begun to familiarize itself with other information operations of departments and agencies throughout the Federal Government. Increased attention will be devoted to this matter during fiscal year 1966 with the objective of eliminating duplicate materials and assisting in establishing methods whereby publications issued provide the utmost value to the consuming public.

The Bureau's participation in comprehensive river basin studies, evaluation of individual water resource projects, and the coordination and review of recreation studies of other agencies will be expanded in fiscal year 1966. Federal water resource projects and comprehensive plans for the utilization of the water resources offer significant potential for meeting the increasing demand for water-oriented recreation opportunities. Under coordinated leadership, the Bureau will participate in comprehensive river basin studies sponsored by the Ad Hoc Water Resources Council or by a Federal agency. The Bureau's responsibilities include:

1. Exercising leadership in the formulation, evaluation, and review of plans for the recreational use and development of water and related land resources;
2. Cooperating with and providing assistance to other Federal agencies engaged in water resource planning;
3. Coordinating its planning activities with all Federal, State, and local interests; and
4. Encouraging appropriate actions to insure recognition of outdoor recreation in the water resource planning program. The increased attention that the administration is giving to river basins throughout the Nation requires this Bureau to actively participate in overall studies, so that recreation is given adequate consideration with other possible uses.

Status of Federal coordination program.—The Bureau's coordination responsibilities are being accepted generally by the various Federal agencies conducting programs related to outdoor recreation. The Bureau's effectiveness cannot be measured solely by the number of studies completed. It is in daily contact with the various Federal agencies conducting recreation programs and, through these contacts, plays an important part in shaping the Federal efforts in outdoor recreation. Excellent cooperation is being received from most Federal agencies and constructive actions have been possible. Some of the significant studies conducted by the Bureau during the past fiscal year include:

1. The review and appraisal of proposed acquisitions from the land and water conservation fund of land and water areas for fiscal year 1966 by certain Federal agencies. This review covered a proposed expenditure of about $50 million. A report on the review with recommended adjustments was made to the Bureau of the Budget.

2. A study of outdoor recreation elements of the fiscal year 1965 land acquisition, and development and or construction Federal agency budgets and the fiscal year 1964 Federal loan and grant budgets having outdoor recreation impact, was initiated in June 1964. The purpose of the study was to provide data to the Bureau of the Budget which would be helpful in that agency's review of the 1966 budgets. A report covering the study was prepared and submitted to the Bureau of the Budget in late fall 1964. Concerned Federal agencies also received a copy. This study involved the budgets of 13 Federal agencies. The report illustrated by census regions where additional Federal recreation opportunities should be developed and also indicated the regions which have a relatively adequate supply of Federal recreation resources.

3. A review of the recreation planning activities of 17 Federal agencies. Consideration was given to the possibility of duplication: to the kind of recreation

planning that is being done; its uniformity; the adequacy of resources devoted to the task; the dependency of one agency on the others for planning services; and the furnishing of such services to non-Federal interests. This study also takes into consideration the relationship of these efforts to this Bureau's nationwide planning responsibilities. A report on this study should be issued in the near future and will include recommendations for strengthening and clarifying Federal policies and practices relating to recreation planning activities to help assure that total Federal expenditures for this purpose are used to best advantage.

4. The Bureau assisted in the preparation of three policy circulars which have been endorsed by the Recreation Advisory Council. These circulars are:

(*a*) RAC Circular No. 2, "General Policy Guidelines for Outdoor Recreation";

(*b*) RAC Circular No. 3, "Policy Governing the Water Pollution and Public Health Aspects of Outdoor Recreation";

(*c*) RAC Circular No. 4, "A National Program of Scenic Roads and Parkways."

5. The Bureau expects to have completed within a year or two a comprehensive report encompassing the recreation activities of the entire Federal Government. This report will point out: overlaps and gaps in the Federal effort; effectiveness of Federal expenditures; omissions and conflicts in Federal policy; and recommend adjustments that are believed to be needed in administrative responsibility, budgets, policy clarification, Federal-State relations, and legislative needs.

6. The Bureau is participating in the interdepartmental program of comprehensive river basin planning. The Bureau is primarily responsible for the recreation component of plans for 20 major regions and subbasins including the evaluation of the recreation aspects of specific projects selected for detailed study by the coordinating agencies.

The Bureau has agreed to report on the recreation aspects of all projects scheduled for study by the Bureau of Reclamation requiring reconnaissance or feasibility planning reports in fiscal year 1966. This involves a minimum of 38 individual investigations and reports imposing a greatly increased workload on the Washington Office and Regional Office staffs. Part of this work is done on a reimbursable basis.

7. The Bureau has developed recreation user-fee regulations for use in connection with the administration of the land and water conservation fund program and has assisted in other studies underway or completed as shown:

(*a*) Uniform method of measuring recreation use of Federal areas—approximately 95 percent complete;

(*b*) Role of the private sector in providing outdoor recreation including needed public services—report finished and under review by Federal agencies;

(*c*) Non-Federal management of recreation facilities on Federal lands and waters—report finished and under review by Federal agencies;

(*d*) Outdoor recreation policy for Federal water resources developments—in first draft; and

(*e*) Land-management responsibilities of Federal agencies at land and water resource projects—report substantially complete.

8. The National Association of County Officials has published "County Parks and Recreation . . . a Basis for Action" as a result of suggestions presented to the organization by the Bureau of Outdoor Recreation in a series of conferences. The 326-page handbook is the first and only document on the subject directed specifically to county recreation needs. Most counties in the Nation have purchased copies. In addition, the Bureau of Outdoor Recreation has distributed copies to key State outdoor recreation and conservation officials to further their understanding of county outdoor recreation problems.

In a collateral action, the Bureau of Outdoor Recreation helped write a technical advisory report on all forms of Federal technical and financial assistance in outdoor recreation available to counties. The National Association of Counties printed the information in booklet form and make it available to all counties as a technical publication.

9. A 27-minute color documentary film needed to show the public what wild rivers are, how they contribute to recreation enjoyment, and how they may be threatened is being prepared for distribution as a result of an agreement initiated by the Bureau of Outdoor Recreation with the Humble Oil & Refining Co. The Outdoor Recreation Resources Review Commission and the Senate Select Committee on National Water Resources have recommended that segments of certain rivers be set aside and protected to enhance their outdoor recreation opportunities. The Bureau is contributing $20,000 worth of field-camera work and related effort to the film, while Humble is paying more than $50,000 for other produciton,

duplication, and distribution expenses initially. In addition, Humble will be obligated for an annual expenditure of $12,000 for distribution for the life of the film.

10. The Bureau of Outdoor Recreation, this year, has promoted coordination of Federal Government outdoor recreation information activities by establishing a governmentwide file of outdoor recreation photographs of high quality. Photographs in the file are provided on a continuing basis by most Federal agencies which have major recreation responsibilities. Representatives of newspapers, magazines, book publishers, conservation organizations, students, and local, State, and Federal agencies draw pictures from this file; they find a single source of good pictures much easier to use than having to go through the involved process of gleaning files of the 20 or more agencies from which the pictures come.

11. In an effort to provide the public, Congress, and State and Federal agencies with a single source of information about the various programs of technical and financial assistance in outdoor recreation which are available from Federal sources, the Bureau of Outdoor Recreation has published a 41-page booklet entitled "Federal Assistance in Outdoor Recreation." This publication was gathered from all Federal agencies in various departments which have programs of recreation assistance. More than 50,000 copies of the publication have been distributed in answer to inquiries from individuals and organizations, by Members of Congress, other Federal agencies, many State agencies, and a number of nonprofit conservation organizations. The booklet has saved hundreds of hours of executive and clerical time which otherwise would have been required in responding to the heavy volume of inquiries for information about Federal programs of technical and financial assistance in outdoor recreation.

12. The Bureau has gathered all available booklets, brochures, and related materials produced for public consumption by departments and agencies with outdoor recreation responsibilities and has begun to familiarize itself with other information operations of departments and agencies throughout the Federal Government. This work is being done in connection with the Bureau's assignment to promote coordination of Federal outdoor recreation programs and activities. The material gathered, in addition to serving its primary purpose, is providing a useful source of ideas and techniques which the Bureau of Outdoor Recreation passes along to various Federal and State agencies as occasion warrants.

13. The Bureau has in preparation a listing of guidebooks to major regional, State, and Federal outdoor recreation areas. No single source of such information now exists. The guidebook listing publication will be valuable to Federal and State agencies and conservation organizations in handling inquiries from the public.

(b) Research and education

The estimate for fiscal year 1966 is $82,000, the same amount as was available in 1965 for this activity.

Plan of work.—During fiscal year 1966 the Bureau's research efforts will be devoted primarily to (1) providing support to the development of the Nationwide recreation plan, and (2) analyzing outdoor recreation research being conducted by Federal, State, and private agencies, (3) developing techniques to aid recreation studies of proposed parks, recreation areas, and water resource projects.

The analysis of research programs will be a continuation of work started in fiscal year 1965. Information will be developed on the types of research being conducted, the agencies involved, and the gaps in knowledge. These efforts will be evaluated by the Bureau and recommendations for the direction of new research efforts will be made as necessary.

The Bureau's research staff will aid the nationwide recreation planning efforts in 1966 by contributing to the development of methods and procedures for determining public demand and need for outdoor recreation resources.

Special emphasis will be given to developing methods for determining the economic impact of recreational development upon the local area affected and the economic benefits and costs of recreation features.

To the extent possible, the Bureau's research staff also will continue to work with colleges and universities in developing curriculums. Studies conducted by the Bureau show that the demand for college-trained recreation specialists will increase sharply in the coming years. The Bureau will advise colleges on balanced courses of studies which will provide the caliber of professionals needed.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$1,894,085	$2,748,000	$3,398,000	+$650,000
Unobligated balance lapsing	5,915			
Transferred to: General Services Administration		32,000		−32,000
Appropriation	1,900,000	2,700,000	3,398,000	+698,000
Proposed supplemental appropriation		80,000		−80,000
Obligations by objects:				
11.0 Personnel compensation	1,424,104	2,010,000	2,204,000	+194,000
12.0 Personnel benefits	104,033	154,000	166,000	+12,000
21.0 Travel and transportation of persons	116,504	199,000	211,000	+12,000
22.0 Transportation of things	10,154	22,000	23,000	+1,000
23.0 Rent, communications, and utilities	64,760	54,000	59,000	+5,000
24.0 Printing and reproduction	38,799	93,000	81,000	−12,000
25.1 Other services	25,994	114,000	475,000	+361,000
25.2 Services of other agencies	33,734	35,000	115,000	+80,000
26.0 Supplies and materials	33,165	27,000	28,000	+1,000
31.0 Equipment	42,838	40,000	36,000	−4,000
Total obligations	1,894,085	2,748,000	3,398,000	+650,000

Chairman HAYDEN. We will first consider your estimate for salaries and expenses following which we will go into the estimate to implement the land and water conservation fund. If you desire to do so, you may file your written statement and highlight it orally. I think that it would be helpful for you to describe generally the work which you do, and to indicate the uses to which your increase in appropriations will be put.

STATEMENT OF DIRECTOR CRAFTS

Mr. CRAFTS. Thank you, Senator Hayden. I do have a general statement that I would like to make. Perhaps I should introduce the gentlemen who are sitting here at the table with me.

Mr. Stevens on my right, is Associate Director of the Bureau, Mr. Rice, Mr. Ogden, Mr. Underhill, and Mr. Shanklin, are Assistant Directors.

I believe the committee has already received the justification statements in connection with the organic act for the Bureau.

Chairman HAYDEN. They have been placed in the record.

Mr. CRAFTS. And also the justification statements in connection with the Land and Water Conservation Fund Act, and the Lewis and Clark Trail Commission. I have furnished the committee with a formal statement which I hope will go into the record, and I will highlight the statement in the interests of time and point out the things that I think are important with your permission.

Chairman HAYDEN. That will be done.

(The statement referred to follows:)

FINANCING PROGRAMS

Mr. Chairman and members of the committee, we are glad to have the opportunity to appear before you today in support of funds to finance the programs of the Bureau of Outdoor Recreation for fiscal year 1966. This year, we are seeking funds to administer programs authorized under three separate statutes—the act of May 28, 1963, Public Law 88–29, which we consider the Bureau's Organic Act; the act of September 3, 1964, Public Law 88–578, entitled the "Land and Water Conservation Fund Act of 1965"; and the act of October 6, 1964, Public Law 88–630, which established the Lewis and Clark Trail Commission.

Total funds requested amount to $128,423,000 and will be used as indicated:

Programs authorized by Public Law 88–29	$3, 398, 000
Programs authorized by the land and water conservation fund act of 1965, Public Law 88–578	125, 000, 000
Programs authorized by Public Law 88–630, Lewis and Clark Trail Commission	25, 000
Total	128, 423, 000

PROGRESS REPORT

I would like to give you a progress report on how we carried out our authorized programs during the past year and what we propose to do in fiscal year 1966.

Under the act of May 28, 1963, the Bureau is charged with the responsibility for formulating and maintaining a comprehensive nationwide outdoor recreation plan, for providing technical assistance to States, local governments, and private interests, for sponsoring and engaging in research and cooperating with educational institutions, and for promoting coordination of Federal plans and activities generally relating to outdoor recreation.

The Bureau is nearing the completion of the first phase in formulating a nationwide plan. This involves developing an inventory of existing and potential outdoor recreation areas and facilities of the public agencies. Within the next few months, it is expected that we will have received all needed inventory data from Federal, State, and local levels. We are in the process of summarizing and analyzing data already obtained. As summaries are completed, and where requests are received from States for inventory information, tabulations will be made available to the States in order that they may use the data in developing their statewide plans. Methods have been developed for conducting an inventory of present and potential supply of outdoor recreation areas and facilities of the private sector. The determination of the Nation's overall present and potential supply of areas and facilities is necessary before further steps can be taken in evaluating supply in relation to needs and demand of the American people.

The Bureau has been involved in the study of special areas of the Nation which have a potential for providing recreation opportunities on a regional or national scope and has also been involved in the review of water resources projects and river basin studies to evaluate the recreation potential of these areas and to insure that recreation is considered as one of the principal uses of the area. Some of the special areas which the Bureau has reviewed or is presently reviewing include North Cascades Mountains, Wash.; Sawtooth Mountains, Idaho; Allagash River, Maine; Pictured Rocks, Mich.; and Assateague Island, Md.

The Bureau is taking the lead in the study of some of the Nation's rivers that are still in a relatively undeveloped condition. It is anticipated that these studies may lead to proposed legislation to establish a national wild rivers system and to protect and enhance their outdoor recreation opportunities. Approximately 80 rivers have been considered either on the basis of actual field investigations or from information available as a result of other studies. The initial studies have been completed and the report to the Secretaries of the Interior and Agriculture will be issued in the near future.

The Bureau has been active in working with the States in inventorying recreation resources and has provided assistance to the States in the development of statewide plans. General guidelines to assist the States in this respect have been developed and made available to States.

In July 1964, the Bureau, in cooperation with Syracuse University, cosponsored a national conference on professional education for outdoor recreation. The conference, among other things, covered present and future manpower needs in the field of outdoor recreation and present curricula and training methods with suggestions for improving professional education in outdoor recreation. There was much interest in this conference and the proceedings of the conference have been printed and distributed.

A review is being conducted of Federal agency activities in the field of recreation information. Publications of all agencies related to outdoor recreation are being reviewed by the Bureau with the objective of avoiding duplication and influencing the development of needed materials.

The Bureau's efforts in promoting coordination of Federal programs have been effective, and the Bureau's responsibilities in this regard have been accepted by the Federal agencies involved and full cooperation from them has been obtained.

The coordinating activities are continuous on a day-to-day basis and cannot be evaluated solely by the number of reports or other written material produced. Some of the studies the Bureau has made and prepared reports thereon include:

1. A study of outdoor recreation elements of the fiscal year 1965 land acquisition and development/construction Federal agency budgets. The purpose of the study was to provide data to the Bureau of the Budget which would be helpful in that agency's review of the 1966 budgets. The study disclosed by census regions where additional Federal recreation opportunities should be developed and where there are adequate Federal resources. A report on the study was submitted to the Bureau of the Budget.

2. A review of the planning activities of 17 Federal agencies. Consideration was given to the possibility of duplication, to the kind of recreation planning that is being done, and to the adequacy of resources devoted to the task. A report on this study is under preparation.

3. A review of the 1965 and 1966 proposed land acquisitions of certain Federal agencies from the land and water conservation fund. The review covered individual proposed acquisitions that exceeded $100,000. A report, with recommended adjustments, was submitted to the Bureau of the Budget.

In addition, the Bureau has taken the lead in the preparation of four policy circulars which have been endorsed by the Recreation Advisory Council. These circulars are identified as (*a*) "Federal Executive Branch Policy Governing the Selection, Establishment, and Administration of National Recreation Areas," (*b*) "General Policy Guidelines for Outdoor Recreation," (*c*) "Policy Governing the Water Pollution and Public Health Aspects of Outdoor Recreation," and (*d*) "A National Program of Scenic Roads and Parkways."

Five additional studies are being conducted and when completed will be submitted to the Recreation Advisory Council for endorsement. These are:

(*a*) Uniform method for measuring recreation use of Federal areas.

(*b*) Role of the private sector in providing outdoor recreation including needed public services.

(*c*) Non-Federal management of recreation facilities on Federal land and waters.

(*d*) Land management responsibilities at land and water resources projects.

(*e*) Scenic roads and parkway study.

A 27-minute color documentary film needed to show the public what wild rivers are, how they contribute to recreation enjoyment, and how they may be threatened is being prepared for distribution in cooperation with Humble Oil & Refining Co.

The Bureau has taken some implementing actions to carry out the programs under the Land and Water Conservation Fund Act of 1965.

(*a*) Meetings have been held with the States, with Federal agencies, and with private organizations to discuss the program, to obtain ideas for its administration, and to encourage the fullest cooperation of all levels in its effective conduct.

(*b*) Guidelines have been prepared and distributed to the States which set forth the standards for developing comprehensive statewide plans which the States must adopt and the Bureau must approve before grants may be made available to the States for acquisition and development of recreation areas.

(*c*) An automobile bumper sticker, which will admit the driver of a noncommercial private automobile and other occupants to enter certain designated Federal recreation areas without additional charge, has been designed and printed.

(*d*) User fee regulations have been prepared, and an Executive order concerning policies on administering the program has been prepared, and is expected to be issued soon.

(*e*) The Bureau is engaged in the development of guidelines and procedures for use by the States in submitting proposals for matching funds to carry out planning, acquisition, and development projects.

As required by law, the first meeting of the Lewis and Clark Trail Commission was held within 90 days after approval of the Lewis and Clark Trail Commission Act. The meeting, held in Washington on January 4, was primarily concerned with organization of the Commission, and the members elected a Chairman, Vice Chairman, and Executive Officer. The elected officers include Mr. Sherry R. Fisher as Chairman, Mr. Marcus J. Ware as Vice Chairman, and Mr. Edward C. Crafts as Executive Officer. Mr. Fisher is an insurance executive and vice president of the J. N. "Ding" Darling Foundation at Des Moines, and Mr. Ware is an attorney of Lewiston, Idaho.

PLANS FOR FISCAL YEAR 1966

During fiscal year 1966, the Bureau will move into the second phase of formulating the nationwide outdoor recreation plan. Studies will be conducted on the effect of a number of economic factors in shaping the demand for outdoor recreation activities, and the forecasting of future trends in demand. This is the key to the development of the nationwide plan. The Bureau is requesting an increase of $550,000 which will be used to accelerate work on the plan and which is needed in order to meet the statutory deadline for completing the plan.

We will continue to study special areas that appear to offer significant potential for outdoor recreation purposes. These studies will determine the suitability of the areas for recreation, whether they should be maintained for public outdoor recreation purposes, and, if so, to recommend the type of development that should be undertaken and the proper agency to administer the areas. These studies are essential in planning to meet future needs for national and regional outdoor recreation areas.

The Bureau expects a heavy workload in fulfilling its responsibilities for reviewing and approving statewide outdoor recreation plans. States have been encouraged to move forward in developing State plans in order that State needs are given proper recognition. Furthermore, the adoption of a comprehensive State plan and its approval by the Bureau of Outdoor Recreation is a prerequisite to a State's obtaining acquisition and development moneys under the Land and Water Conservation Fund Act of 1965.

In view of the announced decisions to close a number of military bases throughout the Nation, the Bureau will be involved in reviewing these Federal areas as to their recreation potential. Applications from States and their political subdivisions to acquire such properties will be reviewed by the Bureau, and recommendations will be submitted to the General Services Administration.

The Bureau will continue its reviews of the programs, budgets, proposed legislation, authorities, functions, and operations of some 20 Federal agencies engaged in outdoor recreation activities. Special studies will be made of certain aspects of outdoor recreation activities that apply to many agencies such as management and operation of areas, technical and financial assistance programs, and land acquisition policies. The Bureau will take the lead in clarifying a long-range Federal land acquisition program. Criteria will be formulated which will be helpful to Federal agencies in developing individual programs and in preparing the annual outdoor recreation budgets.

Special attention will be given to the investigation of water resource projects and to major river basins to assure that recreation is considered as one of the principal uses of the land and water areas involved. Water-based outdoor recreation is in great demand, and it is important that opportunities at Federal water resource development projects are given adequate consideration. About $100,000 of the increase requested for 1966 will be used in expanding this program.

The Bureau will continue its review of Federal publications concerning outdoor recreation and the research efforts of Federal agencies on programs related to outdoor recreation. Recommendations will be made as appropriate in regard to each aspect of this review.

In providing staff services to the Recreation Advisory Council, the Bureau will be involved in a number of studies conducted under the auspices of the Council. The Council is expected to inaugurate at least four major studies during 1966 and possibly some 20 additional items may require consideration.

The heaviest added workload on the Bureau is the States grants-in-aid program and the Federal land acquisition program authorized by the Land and Water Conservation Fund Act of 1965. Many States are expected to submit comprehensive State plans to the Bureau for approval and subsequently to submit applications for grants to assist in financing acquisition of recreation areas and the development of these areas for public use. The States have reported that approximately $300 million of State and local government funds will be available in 1966 for outdoor recreation purposes. The Bureau will be able to match only a portion of the total funds available. However, the amount of State and local funds which are reported to be available indicates that much State-Federal activity will be involved during fiscal year 1966.

Memorandum of Understanding Between Bureau of Outdoor Recreation and Other Related Interior Bureaus

Mr. Crafts. There was also submitted to the committee in response to a statement in the committee's report of a year ago with respect to possible duplication between the activities in the Bureau of Outdoor Recreation and some of the other bureaus of the Department of Interior, a memorandum of understanding that has been executed between the Bureau of Outdoor Recreation and the National Park Service, and also a memorandum of understanding between the Bureau of Outdoor Recreation and the Bureau of Sport Fisheries and Wildlife. These have been made available to you and we will be glad to discuss those if you wish.

Nationwide Outdoor Recreation Plan

Now, with respect to the activities which you mentioned which relate to the act of May 28, 1963, we have asked for an increase of about $650,000 and a total appropriation of $3,398,000. One of the principal activities and the activity to which most of this increase would go is in connection with the preparation of the comprehensive nationwide outdoor recreation plan. This plan involves the development of estimates of recreation supply, recreation demand, and projections for future need. It covers not only the Federal aspects, but the State and local aspects, and private aspects. We are under a directive from the Congress that we are to submit a report on this plan to the Congress by 1968. The increase that we are asking relates mainly to development of the demand phases of this plan. This is an important activity because in connection with the act under which we are operating, the other agencies of the executive branch are directed to carry out their recreation activities in conformance with this plan.

Studies of Special Undertakings

One of the other major activities to be carried out under the organic act relates to the studies of special areas.

We are not asking for an increase in this program, but I think you might be interested in an enumeration of some of the types of activities that are carried on in this particular undertaking.

One is an appraisal of the North Cascades Mountains in Washington, the Sawtooth Mountains in Idaho, the Allagash River in Maine, Pictured Rocks in Michigan, Assateague Island in Maryland, the Apostle Island in Lake Superior. We will be involved in activities connected with the Potomac Basin survey mentioned in the President's natural beauty message and in a White House conference on natural beauty and also in a joint survey with the Department of Defense of surplus lands, lands that are declared surplus by the Department of Defense, and the undertaking of an appraisal of the desirability of establishing a national system of trailways. Also there has been some attention brought to the possibility of establishing a system of wild rivers. Legislation is under preparation in this regard at the present time. It has not yet been submitted to the Congress but I think it will be in the reasonably near future.

Authorized Research

In connection with this same act, the act to which you referred, we are authorized to carry on certain activities in research and in cooperation with educational institutions. Perhaps the main activity which we have carried out in this field in the past year has been in cooperation with a large number of universities in staging at Syracuse University a conference of educators with a view to considering the type of education that would be most useful and beneficial in meeting the demand for professional workers in this field. We have a rather large report on this activity which we would be glad to make available to the committee if you would like to have it.

Coordination of Federal Recreation Programs

Another activity also under this act is the promotion of coordination of Federal programs in recreation. Now there are a large number of agencies that in one way or another are engaged in outdoor recreation at the present time. It is receiving an increasing amount of attention. This is one reason for the establishment of this Bureau. It was established in an attempt to achieve some coordination which was felt desirable by the Outdoor Recreation Resources Review Commission, chaired by Mr. Lawrence E. Rockefeller some years ago.

In the area of Federal coordination we have completed an analysis of capital investments in outdoor recreation by Federal agencies and submitted this report to the Bureau of the Budget with certain recommendations. This report has not been made available to the committee. There is no reason why it should not be. We would be happy to make this report available to the committee. I would not suggest it be included in the record. It is too voluminous. But I think perhaps the committee ought to have it.

Chairman Hayden. You may submit copies. We will be glad to look at them.

Mr. Crafts. Thank you. We will do that. One thing I will say here, we have recommended in this report some adjustment in the regional allocations of Federal funds. We think they are being spent in the wrong places to some degree. This, in my judgment, is a rather consequential report and is one of our main accomplishments during the past year under the organic act.

It seems to me that the committee would probably wish to devote most of its attention to our request for funds under the Land and Water Conservation Fund Act which is our first appropriation request under this act, which was passed last fall. So I will conclude my remarks at this point in connection with this first request.

Chairman Hayden. I have a series of prepared questions.

Land and Water Conservation Fund

How much of your time, percentagewise, do you devote to the land and water conservation activities?

Mr. Crafts. Are you speaking of me as an individual?

Chairman Hayden. Yes.

Mr. Crafts. I would say that since the passage of the act that I have probably devoted about 75 percent of my time to the land and water conservation fund trying to plan for its implementation. This is just a guess off the top of my head.

Water Resource Planning

Chairman HAYDEN. You indicate that you will increase your recreational planning efforts on water resources, stating that the studies will be conducted as part of the comprehensive river basin review being undertaken under coordinated direction. Just how do you plan to increase your efforts and under which Federal agency is the river basin review being conducted?

Mr. CRAFTS. Financially the increase proposed is $100,000. We propose to spend in the next fiscal year $250,000. The total including reimbursable funds is about half a million dollars.

Technical Assistance to States

Chairman HAYDEN. Do you spend a good part of your time in working on problems of technical assistance to various States and to local agencies?

Mr. CRAFTS. Yes. We would like to spend more. Most of the technical assistance functions that we have carried out in the last 9 months have been with respect to working with the States in what they need to do to meet the requirements of the Land and Water Conservation Fund Act, particularly the preparation of an acceptable statewide plan. There are certain other things that we do in the technical assistance field but that is the primary activity.

Recreation Areas and Facilities Inventory

Chairman HAYDEN. On page 13 of your justifications you say that an inventory of existing recreation areas and facilities is being compiled and that the major portion of it will be completed by April 1. Do you mean this year or in 1966?

Mr. CRAFTS. I do not find that quickly, but Mr. Rice tells me that means this year.

Senator MUNDT. Does that include anything beside Federal areas? Does that include State, private, and other areas?

Mr. STEVENS. It includes the Federal, State, and local, and then we will have a separate study of the private sector, Senator Mundt, which will come in a little later. We have just completed the procedures for inventorying the private sector.

Senator MUNDT. But your first report will include all kinds of public areas?

Mr. STEVENS. Yes, sir; and the private sector will include everything we can get our hands on of a private nature, and it will be unprecedented, because there has never been a comparable inventory of private facilities before.

Senator MUNDT. You ought to be able to sell that one.

Mr. STEVENS. Then the two will, of course, be combined and become the basic inventory of the nationwide plan, and that material will also be made available to the States for their use.

Funding of Instructional Material

Chairman HAYDEN. On page 17, there is a statement that the publications and other instructional material relating to the land and water conservation fund will be financed from that fund. Do you

include this in your administrative expenses presentation for that fund?

Mr. CRAFTS. Yes, this would be in the $1,440,000.

Chairman HAYDEN. How much do you estimate will be expended for this purpose in fiscal year 1966?

Mr. CRAFTS. The total amount that we have asked for is $1,440,000. As to how much of this will be expended for instructional materials I would have to ask Mr. Rice, if he could make an estimate on that.

Mr. RICE. Mr. Chairman, we estimate that about $46,000 of the $1,440,000 would be used for printing and reproduction of the various reports and so forth that have to be printed.

Mr. CRAFTS. I might say, Mr. Chairman, we are very cognizant of the prohibition in the act, and we will abide by it, and must abide by it. Section 7 of the act makes it very clear that moneys are not to be available for publicity purposes.

Senator MUNDT. May I inquire, you must have some public relations people or advertising, do you not?

Mr. CRAFTS. We cannot use money from the funds for publicity purposes. We have to draw a distinction between basic instructional materials, which the States must have in order to operate, and publicity materials.

Senator MUNDT. It would be a most unusual agency if you do not have any informational people at all. You must have that under some other fund.

Mr. CRAFTS. We have an information officer, and he is funded from appropriations under our organic authority.

Senator MUNDT. How big a staff does he have?

Mr. CRAFTS. He has two people.

Senator MUNDT. Do you use any private public relations firms under contract?

Mr. CRAFTS. No, sir.

Senator MUNDT. Just three people is all you have?

Mr. CRAFTS. Yes, sir.

CRITERIA TO ELIMINATE AND AVOID DUPLICATION OF ACTIVITIES

Chairman HAYDEN. Last year the Senate committee and the conference committee reports contained directives that there be established criteria to eliminate and avoid duplication of activities of the various agencies of the Department of the Interior and the Bureau of Outdoor Recreation.

Would you please submit copies of these criteria for the record and summarize them briefly for the committee?

Mr. CRAFTS. Yes, sir.

(The information referred to follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., February 3, 1965.

HON. CARL HAYDEN,
Chairman, Committee on Appropriations,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: Senate Report No. 971 on the Department of the Interior and related agencies appropriations bill, 1965, contains the following statement:

"The committee is concerned that there be no duplication of activities of the various agencies of the Department of the Interior and the Bureau of Outdoor Recreation. The committee therefore suggests that a report be presented at the

fiscal year 1966 budget hearings indicating criteria established to eliminate and avoid duplication."

A review of the activities of the Bureau of Outdoor Recreation and the relationship of its activities to the activities of the National Park Service and the Bureau of Sport Fisheries and Wildlife has been completed. As a result of the review, the responsibilities of these Bureaus, in the field of outdoor recreation planning, have been delineated and agreements between the Bureaus involved have been consummated. Copies of these agreements are enclosed and have my approval. We believe that the responsibilities of the Bureaus are clearly defined in the agreements and the possibility of overlap or duplication has been eliminated. If additional information is desired, we will be pleased to supply it upon request.

Copies of these agreements are being supplied to the chairman of the House Appropriations Committee.

Sincerely yours,

JOHN A. CARVER,
Under Secretary of the Interior.

FEBRUARY 3, 1965.

Hon. GEORGE H. MAHON,
Chairman, Committee on Appropriations,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Senate Report No. 971 on the Department of the Interior and related agencies appropriations bill, 1965, expresses the concern of the committee that there be no duplication of activities of the various agencies of the Department of the Interior and the Bureau of Outdoor Recreation. The committee suggested that a report be presented at the fiscal year 1966 budget hearings indicating the criteria which the Department has established to eliminate and avoid duplication. The conference report on the same bill contains a statement that the conferees concur in the Senate report which requires the Department to submit such a report.

A review has been completed of the activities of the Bureau of Outdoor Recreation and the relationship of its activities to the activities of the National Park Service and the Bureau of Sport Fisheries and Wildlife. As a result of the review, the responsibilities of these Bureaus in the field of outdoor recreation planning have been delineated. Agreements have been signed by the respective Bureau heads and have received my approval. Copies of these agreements are enclosed. We believe that the responsibilities of the Bureaus, as set forth in these agreements, are clearly defined and should eliminate the possibility of overlap or duplication. If additional information is desired, we will be pleased to supply it upon request.

Copies of the agreements are being transmitted to the chairman of the Senate Appropriations Committee.

Sincerely yours,

JOHN A. CARVER,
Under Secretary of the Interior.

MEMORANDUM OF UNDERSTANDING BETWEEN BUREAU OF OUTDOOR RECREATION AND NATIONAL PARK SERVICE

This memorandum of understanding is intended to clarify the responsibilities and functions between the two agencies, as follows:

1. *National park system planning.*—The National Park Service is responsible for national park system planning, including national recreation areas to be administered by it. The national park system is a part of the nationwide recreation plan of the United States which is the responsibility of the Bureau of Outdoor Recreation. Accordingly, to facilitate the greatest possible coordination between the two agencies in performing their respective functions, the National Park Service shall notify the Bureau of Outdoor Recreation of any study proposal the Service undertakes and the Bureau will notify the Service of any study proposal it undertakes that is likely to involve or affect the Service and its plans. To enable the National Park Service and the Bureau to discharge their respective responsibilities, each shall provide the other with copies of their professional reports on any area proposed as a national recreation area.

2. *Federal water project studies.*—The Bureau shall be responsible for the recreation aspects of comprehensive river basin planning as sponsored by the Ad Hoc Water Resources Council or by a Federal agency and preauthorization recreation planning for projects outside of the river basin concept, including the updating of feasibility planning where warranted.

The Service shall (*a*) have primary responsibility for the historical, archeological, and natural science aspects of all comprehensive river basin planning and shall (*b*) provide technical assistance for the Bureau in its preauthorization studies in those established fields of endeavor where the Service is experienced; such as, general development planning and related activities.

The Service shall also be responsible for all postauthorization assistance involving development planning, site planning, consultation pertaining to the development, interpretation, and operation of recreation areas, reservoir management planning, negotiation of agreements for administration of reservour recreation areas, and in the follow up on administration of such agreements.

3. *Federal contacts and activitie:*—The Bureau of Outdoor Recreation will assume primary responsibility for: (1) surveys or studies relating to the formulation of the nationwide outdoor recreation plan; (2) special studies involving several Federal or non-Federal agencies having outdoor recreation responsibilities; (3) determining an area's suitability for designation as a national recreation area and, if suitable, recommending which Federal agency should administer; or (4) special studies assigned by the Secretariat or the Recreation Advisory Council.

The National Park Service will assume primary responsibility for studies or surveys which: (1) involve historic, archeologic, and special natural science themes; (2) are initiated to evaluate potential additions to the national park system; (3) are requested by other Federal agencies to provide assistance in development, operation, interpretation, and planning for proposed or existing specific areas or systems of areas and provision of consultative assistance on same subjects; or (4) special studies assigned by the Secretariat.

In the event that field investigation or subsequent review reveals the desirability of shift of primary responsibility from one agency to another, such shift will be made. Should as the result of such study, or any other study conducted by the Bureau of Outdoor Recreation, the National Park Service be recommended as the agency to administer a particular existing or potential national recreation area, and upon approval of such recommendation by the Secretary of the Interior, the Service will from that time on have the primary responsibility for all basic followup planning and action on the proposal.

4. *Other contacts and activities.*—The Bureau shall be responsible for cooperating with, assisting, and advising other Federal agencies, States, local governmental entities, and others, on broad recreational planning including the nationwide recreation plan, the allocation of grants-in-aid funds, etc.; and basic coordination and liaison between Federal agencies and non-Federal interests in matters pertaining to outdoor recreation. (This should not prevent direct contacts between Federal agencies and State or local agencies of like disciplines.)

The Service is responsible for cooperating with, assisting, and advising other Federal agencies, States, local governmental agencies, and others, with respect to specific area planning, management, interpretation, protection, maintenance, and operating problems, including development of specific projects, parks recreation areas, etc.

EDWARD C. CRAFTS,
Director, Bureau of Outdoor Recreation.
GEORGE B. HARTZOG,
Director National Park Service.

Approved September 2, 1964.

STEWART L. UDALL,
Secretary of the Interior.

MEMORANDUM OF UNDERSTANDING BETWEEN BUREAU OF OUTDOOR RECREATION AND BUREAU OF SPORT FISHERIES AND WILDLIFE

In view of the mutual necessity for close cooperation between the Bureau of Outdoor Recreation and the Bureau of Sport Fisheries and Wildlife to insure that fish and wildlife resources and outdoor recreation make the greatest possible contribution to the welfare of the American public, it is mutually agreed that the two Bureaus will carry out their respective programs with full coordination and shall specifically operate in the following manner.

1. *Planning.*—In the development of program plans, there will be frequent consultation between planning offices of the two Bureaus. As plans are completed, each Bureau will furnish one or more copies to the other. Site plans of the Bureau of Sport Fisheries and Wildlife—master plans for refuges, hatcheries, and

laboratories—will be furnished only when they have a bearing on a cooperative endeavor between the two Bureaus.

2. *Planning related to water resource development programs.*—The purpose of this section is (1) to promote sound planning for recreation related to fish and wildlife and other outdoor recreation in connection with Federal water development projects and programs and with similar projects subject to Federal license or permit; and (2) to establish procedures which will avoid duplication of effort and insure inter-Bureau coordination.

A. The Bureau of Sport Fisheries and Wildlife will conduct investigations and prepare reports to construction agencies concerning the fish and wildlife aspects of water development projects. These reports will include, among other things, recommendations for the conservation, development, and utilization of fish and wildlife resources for recreation and other purposes, including commercial uses. The Bureau will also prepare and report data described in C below.

B. The Bureau of Outdoor Recreation will conduct investigations and prepare reports to construction agencies concerning the total outdoor recreation aspects of water resource projects. These reports will include, where appropriate, data on fish and wildlife to be supplied by the Bureau of Sport Fisheries and Wildlife. These reports will include, among other things, recommendations concerning the conservation, development, and utilization of project land and water for all types of outdoor recreation activities.

C. The Bureau of Sport Fisheries and Wildlife will furnish upon request by the Bureau of Outdoor Recreation report information concerning the conservation, development, and utilization of fish and wildlife resources for sport fishing, hunting, and other related recreation purposes. This information will cover such specific subjects as: Future demand for hunting, fishing, and other recreation uses of fish and wildlife; prospective supplies of fish and wildlife resources; recommended measures for the conservation, development, and utilization of fish and wildlife resources; and anticipated benefits in dollars and/or other measures. To the extent appropriate, the Bureau of Outdoor Recreation may refer to the findings and recommendations of the Bureau of Sport Fisheries and Wildlife in its report.

D. The Bureau of Outdoor Recreation will furnish upon request by the Bureau of Sport Fisheries and Wildlife report information concerning the conservation, development, and utilization of land and water for general and specialized outdoor recreation purposes. This information will cover such subjects as: Present and future demand for all recognized outdoor recreation activities; existing and prospective supplies; recommended measures for the protection, development, and utilization of recreation opportunity; and anticipated benefits in dollars and/or other measures. To the extent appropriate, the Bureau of Sport Fisheries and Wildlife may refer to the findings and recommendations of the Bureau of Outdoor Recreation in its reports.

E. In recognition of the problems of separating hunting, fishing, photograghy, and nature study from other closely associated general recreation activities such as camping, boating, and picnicking, the reporting officers will make a special effort to identify such areas of mutual interest and take them into account in the planning process. Where hunting, fishing, and other recreation use of fish and wildlife resources are experienced by visitors to a project area, the extent and value of this use will be determined by the Bureau of Sport Fisheries and Wildlife. The extent and value of other uses of recreation opportunity afforded by a project area including such activities as camping, which may be experienced in conjunction with hunting, fishing, and allied uses of fish and wildlife resources, will be determined by the Bureau of Outdoor Recreation and included in its reports.

F. To the extent practicable, the Bureau of Outdoor Recreation and the Bureau of Sport Fisheries and Wildlife when reporting on a specific river basin or project area will employ the same or equivalent basic data relating to population, mobility, income levels, and other economic factors in their determination of needs, resource requirements, and recommended action.

G. Reports of the two Bureaus on a given water resources project shall be consistent one with the other insofar as the effects of the project on conservation, development, and utilization of fish and wildlife are concerned.

H. Reporting officers of the two Bureaus shall cooperate closely with a view toward attaining compatible use of water resource projects for various outdoor recreation activities including fishing and hunting.

I. Information made available by one Bureau to the other under the terms of this agreement shall be treated as preliminary and subject to revision until the Bureau supplying the information has released or is prepared to release such

information in its own reports and/or has granted approval of its release by the other agency.

3. *Financial assistance to States for program development.*—Under the Land and Water Conservation Fund Act of 1965, the Bureau of Outdoor Recreation will make financial assistance available to States for the preparation and maintenance of comprehensive statewide outdoor recreation plans required by that act as a prerequisite to receiving acquisition and development grants. Under authority of the Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act) and the Federal Aid in Fish Restoration Act (Dingell-Johnson Act), the Bureau of Sport Fisheries and Wildlife expects to make financial assistance available to States for the preparation of statewide programs for the utilization and development of fish and wildlife resources which would be important segments of the State outdoor recreation plans.

In view of the close relationship of these two types of financial assistance, the two Bureaus agree to keep each other informed as to these matters and to coordinate their efforts in the review and approval of the two programs.

The Bureau of Outdoor Recreation will also keep the Bureau of Sport Fisheries and Wildlife informed of "701" planning grants made to States by the Housing and Home Finance Agency which are expected to be a major source of funding for recreation planning.

When possible, the Bureau of Outdoor Recreation will finance fish and wildlife planning under its grants to the extent such planning contributes to the overall recreation plan and will seek to insure that fish and wildlife planning is included in HHFA grants to the same extent.

4. *Studies of demand for outdoor recreation.*—The Bureau of Outdoor Recreation conducts studies of demand for outdoor recreation in connection with the nationwide outdoor recreation plan which it is preparing in accordance with the directive of the Congress in Public Law 88-29. The Bureau of Sport Fisheries and Wildlife conducts hunting and fishing surveys under the authority of the Fish and Wildlife Act of 1956, as amended, and Fish and Wildlife Coordination Act, as amended.

In view of the close relationship between these types of demand studies, each Bureau agrees to inform the other in writing as to its plans for the conduct of such studies, and to consult with the other as to the content of the studies in order to promote maximum coordination of demand data and to avoid duplication of effort.

5. *Threatened species.*—One of the purposes of funds allocated to Federal agencies under the Land and Water Conservation Fund Act is the preservation of habitat for species of fish and wildlife threatened with extinction. The Bureau of Sport Fisheries and Wildlife will—

A. Compile all available information on such species.

B. Prepare plans to insure preservation.

C. Support Bureau of Outdoor Recreation budget requests as agreed upon.

D. Ascertain, acquire, and manage such lands, and will designate them as national areas for this purpose, and, wherever possible, will develop their utility for wildlife-oriented outdoor recreation.

6. *Regional liaison and cooperation.*—Since both Bureaus are organized on a regional basis (although not congruent) and since broad authority has been delegated to the respective regional directors, active liaison and cooperation will be fostered at the regional level. As specific procedures are formulated, such will be incorporated in the respective Bureau operating instructions or manuals.

7. *Tenure.*—The agreement shall be in effect until June 30, 1966, at which time it shall be reviewed by both Bureaus.

LAWRENCE N. STEVENS,
Director, Bureau of Outdoor Recreation.
JOHN S. GOTTSCHALK,
Director, Bureau of Sport Fisheries and Wildlife.

Approved February 3, 1965.

JOHN A. CARVER, Jr.,
Under Secretary of the Interior.

EXCHANGE OF MATERIALS BETWEEN AGENCIES

Mr. CRAFTS. The committee has already received copies of the material in the form of a memorandum of agreement between this

Bureau and the National Park Service and another memorandum between this Bureau and the Bureau of Sport Fisheries and Wildlife.

Basically I can say that they provide for an exchange of materials between agencies. They provide that where the National Park Service and this Bureau are involved the Park Service would do the planning for the national park system, the basic and detailed site planning, and that this Bureau would do the more generalized overall comprehensive planning.

With respect to the recommendation involving the Bureau of Sport Fisheries and Wildlife, I was ill at the time that was consummated. I am not as familiar with that, and I would like to ask Mr. Stevens to comment on that, if he would.

Mr. STEVENS. Yes, sir.

The agreement between our Bureau and the Bureau of Sport Fisheries and Wildlife covers three functional areas. The first is in the study of river basins and water resource projects.

The agreement provides that they will make the studies of fish and wildlife resources, and turn their data over to us. We will not duplicate it, but we will utilize it in our reports. It provides that we will exchange data freely and use the other data to the maximum extent possible.

It also provides for keeping each other fully informed and meshing our respective reports covering the studies.

The second major functional area is in the grants to States. Our grants would be those that Director Crafts has just described under the land and water conservation fund.

The agreement provides that grants that Bureau makes under the Dingell-Johnson and Pittman-Robertson Act will be coordinated with our grants to the States.

The third functional area concerns what we call "demand studies," in which we make studies of demands for various types of outdoor recreation on a nationwide basis.

That Bureau has made two studies of the demand for fishing and hunting, and are currently contemplating a new version. The agreement provides for full integration of these type of studies by the two Bureaus and for maximum cooperation.

WILD RIVER

Senator MUNDT. Mr. Chairman, in this business of studies, I came across the words quite often, "wild river." What is a wild river? Will you define for us what you mean by a "wild river"?

Mr. CRAFTS. Yes, sir. It does not go to the question of navigability. The definition of a "wild river" is under consideration right now in connection with legislation which may soon be submitted. Basically, it is a free-flowing river. It is a river that has not been dammed, or significant portions of the river have not been dammed.

Senator MUNDT. How about the portion above the dam? Is that wild?

Mr. CRAFTS. If it is above the impoundment, if it is free flowing, and if the immediate shoreline is reasonably undeveloped, it would qualify as a wild river.

In the wild river proposal that is under consideration at the present time, there is no prohibition contemplated with respect to lumbering

or mining or roads or other activities. It is proposed that the primary management or utilization of the immediate strip along the shore, which may be anywhere from 300 feet to a quarter, and in some cases half a mile wide, but not very often that wide, would be for recreation purposes and for enjoyment of the river and shore.

Senator MUNDT. Where would the Missouri River fit into your program? From Sioux City to Fort Peck, about a thousand miles, it is not free flowing, because it has impoundment, but it has hundreds of miles of undeveloped shoreline which are available for public enjoyment. What is there about a moving water that makes it more attractive for that development than a still water?

Mr. CRAFTS. I do not know as it necessarily makes it more attractive to all persons in all cases. The basic philosophy is that the rivers of our country, and properly so, under the activities of the corps, the private utilities, the Bureau of Reclamation, are being impounded more and more for flood control, for hydroelectric power, and so on.

Senator MUNDT. One of the features of that is recreation.

Mr. CRAFTS. That is correct. The philosophy in this wild river concept, and I am not sure this is a good term, but it is a term that is being commonly used, is that, along with the impoundments, looking to the future there should be certain segments of certain rivers that are designated by the Congress as free flowing along with other segments that are designated for impoundment. This is the philosophy that is basically behind this.

CONTEMPLATED LEGISLATION

To come back to your question on the Missouri, I might say that here again this is a tentative thing, because this has not been crystallized, but in the legislation that is being contemplated to be offered on this subject, there are two classes of rivers. There are very few rivers of which segments are proposed to be established as wild rivers—only four, as a matter of fact.

There is another group which are proposed to be studied. After a period of years, and the completion of the study, recommendations will then be submitted to the Congress.

Now, the Missouri, or at least part of the Missouri, above South Dakota, is in the second group that is designated for study.

Senator MUNDT. Part of the impoundments, a good portion of the impoundments, are above South Dakota. Fort Peck is above South Dakota.

Mr. UNDERHILL. The section that is proposed is that from the headquarters of Fort Peck upstream to Fort Benton, Mont., that segment which is still through the Badlands of Montana, or the Missouri Breaks.

Senator MUNDT. I take it what you have in mind by wild river is a sort of aquatic wilderness area set aside and preserved in its natural state.

Mr. UNDERHILL. Not completely, sir. It could be a wilderness area, but it could also be a stream which is flowing through relatively developed countryside, but which has a fringe of natural growth along it so that from the river itself it gives the impression of an undeveloped or pastoral-type stream.

Senator Mundt. Is the Missouri a wild river from Sioux City to New Orleans?

Mr. UNDERHILL. I would not say so, sir, because there has been a considerable amount of change, alteration, and development of the river through that stretch.

But the bill that Director Crafts was referring to would not make a wild river part of the national system unless a particular segment had been so designated by the Congress.

Mr. CRAFTS. There is some restriction contemplated that brings it close to what you refer to as a wilderness-type river, but it is not contemplated that it would be as restrictive as those in the wilderness bill.

Senator MUNDT. Probably one factor would be pollution.

Mr. CRAFTS. That is mentioned, yes.

COOPERATION BETWEEN FOREST SERVICE AND BUREAU OF OUTDOOR RECREATION

Chairman HAYDEN. Is there a problem at all with the Forest Service insofar as duplication of efforts on the recreation activity is concerned? If so, have you worked out any criteria with that agency to avoid duplication?

Mr. CRAFTS. I used to be with the Forest Service. I was with the Forest Service for 29 years, and was Assistant Chief for 10 years. I know of no duplication between the activities that this Bureau is carrying out at the present time and the activities of the Forest Service. As a matter of fact, we are cooperating very closely.

TRANSFERS TO BUREAU OF OUTDOOR RECREATION

Chairman HAYDEN. Does the Bureau of Outdoor Recreation receive funds by transfer from other Federal appropriations or in the form of contributions? If so, will you please file for the record a statement showing the estimates of these funds by sources, amounts, and purposes for fiscal year 1965 and fiscal year 1966?

Mr. CRAFTS. Yes, sir. We do receive a small amount of transfer funds, and we will be glad to file that for the record.

(The statement referred to follows:)

BUREAU OF OUTDOOR RECREATION

Estimated reimbursements, 1965–66

Source of funds	Estimated amounts	
	1965	1966
1. Corps of Engineers	$211,000	$246,500
2. Bureau of Reclamation	60,000	30,300
3. Public Health Service	48,000	40,000
4. Area Redevelopment Administration	111,000	
5. General Services Administration	15,000	15,200
Total estimated reimbursements	445,000	332,000

USE OF FUNDS

The funds under items 1, 2, and 3 will be used in comprehensive river basin planning, individual project planning, and review of reports consistent with the act of May 28, 1963 (77 Stat. 49), and in response to Interagency Agreement on Coordination of Water and Related Land Resources Activities approved by the President, May 26, 1954.

The basic objectives of the Bureau's planning studies are to—

(*a*) Formulate or to assist in the formulation of plans that will provide the best use, or combination of uses of water and related land resources to meet foreseeable short- and long-term recreation needs.

(*b*) Obtain, analyze, and assemble soundly based outdoor recreation information in suitable form for timely use by those agencies.

Funds under item 4 are used to conduct studies and report on tourism and recreation potentials of areas which are selected for study by the Area Redevelopment Administration.

Work performed for General Services Administration involves the review and report on applications made by State and local agencies to acquire Federal surplus real property to be used for public parks, recreation, and historic monument purposes.

LAND AND WATER CONSERVATION FUND

Chairman HAYDEN. Mr. Crafts, there will be placed in the record the justifications in support of the fiscal year 1966 estimate in the amount of $125 million to implement the Land and Water Conservation Fund Act, which was passed last year, and which you have described.

(The justifications referred to follow:)

BUREAU OF OUTDOOR RECREATION

LAND AND WATER CONSERVATION HIGHLIGHT STATEMENT

Under date of September 3, 1964, the President signed the Land and Water Conservation Fund Act of 1965 (Public Law 88-578). The provisions of this act make available, subject to appropriations, an estimated average of about $180 million annually for planning, acquisition, and development of outdoor recreation areas and facilities. For fiscal year 1966, the request for appropriations from the fund totals $125 million. Of the total request, $74,136,000 will be available to States, under conditions set forth in the act, for recreation planning, acquisition, and development; $49,424,000 will be available to certain Federal agencies to acquire areas for outdoor recreation purposes or for the preservation of endangered wildlife species, and $1,440,000 will be available to the Bureau of Outdoor Recreation for coordinating and administering the program.

This act creates a fund from which appropriations can be made to provide outdoor recreation areas and facilities at State, local, and Federal levels. It became effective January 1, 1965. The life of the fund is limited to 25 years. Its purpose is to provide a means of bringing our national efforts abreast of our most urgent outdoor recreation needs, principally by assisting the States to acquire and develop lands with high recreation potential before such lands are put to other uses or become prohibitively costly to acquire.

This fund derives revenue from (1) admission and user fees at Federal recreation areas designated, in accordance with criteria approved by the President, as areas at which fees may be charged, (2) net proceeds from the sale of Federal surplus real and related personal property, and (3) existing Federal taxes on motorboat fuels. Provision is also made for advance appropriations up to an average of $60 million annually during an 8-year period beginning with fiscal year 1968. Advance appropriations will be repaid from other fund sources beginning the 11th year. Moneys in the fund not appropriated within 2 years following the fiscal year in which they are credited to the fund shall be transferred to miscellaneous receipts of the Treasury.

Excluding amounts for administrative expenses, and in the absence of a provision to the contrary in the act making an appropriation from the fund, 60 percent of annual appropriations from the fund will normally be available to the States, but the President during the first 5 years may vary such percentage by 15 points either way. As provided in the authorizing act, grants-in-aid to States may not exceed 50 percent of the cost of planning, acquisition, and development of land and water areas for public outdoor recreation purposes. Appropriations requested herein for State purposes will be used for grants-in-aid up to 40 percent of the costs of these projects. An approved comprehensive statewide outdoor recreation plan is a prerequisite to a grant for State acquisition and development projects. Funds may be transferred by a State to its political subdivisions for their projects if the latter are in accord with such plan.

The remaining portion of the fund—normally 40 percent—will be available to the National Park Service, Forest Service, and the Bureau of Sport Fisheries and Wildlife for acquisition of certain needed recreation areas or for areas to preserve threatened species of wildlife, and for payment into miscellaneous receipts of the Treasury to help offset capital costs of future Federal water development projects which are allocated to public recreation and fish and wildlife enhancement.

Possibly other bureaus of the Department of the Interior may, in the future, obtain acquisition money if they are designated to administer Federal recreation areas hereafter authorized.

The interest in this program on the part of States and local agencies is impressive. This is reflected not only by the budget information submitted by the States, but by the heavy volume of correspondence received in the Bureau since the passage of the act. In response to an inquiry made in November 1964, of the States, territories, and the District of Columbia as to the amounts of funds expected to be available to them in fiscal year 1966 for matching Federal grants for planning, acquisition, and development under this program, a total of over $300 million was reported. The amount reported by some States substantially exceeds the maximum of 7 percent available to any State under the act.

ESTIMATED REVENUES

The following tabulation shows the estimated revenues, by source, expected to accrue to the fund for fiscal years 1965 through 1969:

[In thousands]

Item	Fiscal year—				
	1965	1966	1967	1968	1969
Auto sticker	$2,000	$25,000	$34,000	$39,000	$40,000
Other entry fees	3,000	8,000	9,000	10,000	11,000
User fees	7,000	8,000	9,000	10,000	11,000
4-cent motorboat fuel tax	3,000	24,000	25,000	27,000	28,000
Sale of surplus property	30,000	60,000	60,000	50,000	50,000
Total estimated revenues	45,000	125,000	137,000	136,000	140,000
Advance appropriation				60,000	60,000
Total estimated availability	45,000	125,000	137,000	196,000	200,000

Section 3 of the act provides that:

"Moneys covered into this Fund not subsequently authorized by the Congress for expenditures within two fiscal years following the fiscal year in which such moneys had been credited to the Fund, shall be transferred to miscellaneous receipts of the Treasury."

Under this provision, any unappropriated revenues which remain in the fund for 2 fiscal years after the fiscal year in which they were deposited will cease to be available for apprpriation. Because of the urgency of the need for funds to provide recreation opportunities, it is extremely important that all revenues deposited during the coming years be appropriated for purposes of the act rather than allow any portion of them to revert to miscellaneous receipts of the Treasury.

The proposed appropriation language for fiscal year 1966 is drafted in such a manner that moneys accruing to the fund that year will be available for obligation as they accrue. Unless such authority is available, an effective program could not be carried out. Schedules of projected revenues show that amounts in the fund at the beginning of fiscal year 1966, after providing for a proposed supplemental appropriation for fiscal year 1965, would not be adequate to meet the fiscal year 1966 requirements.

ACCOMPLISHMENTS

Since September 3, 1964, the date of approval of the act, considerable progress has been made toward implementation of the act.

(*a*) A meeting was held in October with representatives of the States, to explain the program and to obtain their views.

(*b*) Meetings have been held with concerned Federal agencies and with private organizations interested in the program.

(*c*) An automobile bumper sticker has been designed and printed. This sticker will allow the driver nad all occupants of a noncommercial passenger automobile to enter certain designated areas without paying additional entrance fees.

(*d*) Guidelines and requirements for comprehensive State outdoor recreation plans have been developed and issued.

(e) Proposed regulations on admission and user fees and the posting of Federal areas where fees would be charged have been developed in the form of proposed Executive and secretarial orders. The Federal agencies concerned have been requested to develop signs for posting areas and to take other actions needed to administer the program.

(f) A manual of instructions to States on procedures for participating in the program has been prepared and will soon be ready for release.

(g) A review has been made by the Bureau of the proposed land and water areas included in this budget which the Federal agencies propose to acquire.

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
1. Assistance to States			$74,136,000	+$74,136,000
2. Federal programs			49,424,000	+49,424,000
3. Administrative expenses			1,440,000	+1,440,000
Total			125,000,000	+125,000,000

1. Assistance to States

	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
Assistance to States			$74,136,000	+$74,136,000

1. Assistance to States

A total of $74,136,000 is requested for grants-in-aid to States to assist in financing not more than 40 percent of the cost of preparing outdoor recreation plans, acquiring land and water areas, and developing areas for outdoor recreation purposes.

Need for funds requested.—The funds requested will assist the States financially in meeting urgent needs at State and local levels for more outdoor recreation areas and facilities. This Bureau firmly supports, and is proceeding in accord with, the following views expressed by the Outdoor Recreation Resources Review Commission, "All levels of government share an interest in and responsibility for meeting the outdoor recreation needs of the Nation. However, the State governments have dominant public responsibility and should play the pivotal role." The Bureau's objective is to stimulate State activity and encourage States to assume a leading role in meeting the recreation needs of their people. The Federal assistance provided with the funds requested will serve as a strong incentive to the States to move forward in this area.

Plan of work.—During the early part of fiscal year 1966, it is expected that the States will emphasize planning activities, whereas requests for acquisition and development funds will increase in the latter part of the year.

Based on information received from the States, about $7 million of grant funds are needed in 1966 to assist in financing State recreation planning activities. The act provides that an approved comprehensive statewide outdoor recreation plan shall be a prerequisite to consideration by the Secretary of financial assistance for acquisition or development projects. The need for adequate planning in the field of outdoor recreation, as in any other major undertaking, is recognized by the Congress, the States, and the Federal agencies.

The importance of planning is well stated in House Report 900 on the Land and Water Conservation Fund Act as follows:

"The importance of insisting on sound comprehensive statewide planning is self-evident and the bill makes it a prerequisite to any land acquisition or develop-

ment projects for which Federal assistance is requested or given. In the absence of detailed and reliable statewide estimates of such factors as population and leisure-time growth, the types of recreation which people now enjoy and toward which they are moving, the land and water resources that are and will be available for this purpose, and the cost of acquiring and developing these resources, acquisition programs and actual development will be spotty and inadequate, parks and other recreation facilities are likely to be placed where the people are not, suitable and available sites may be overlooked or not used to advantage, and the extent to which people will need and make use of facilities of the sort it is proposed to provide will not be accurately foreseen. In short, planning is essential to avoid unwise use of both State and Federal funds."

About $67 million of the 1966 request is expected to be used to assist States in acquiring and developing land and water areas.

The need for additional outdoor recreation areas and facilities is well documented. Visits to all State recreation areas are increasing markedly, and most of the existing areas are seriously overcrowded. Facilities for recreationists are generally inadequate. There are not enough camping and picnicking facilities, boat launching ramps, swimming areas, hiking trails, or other outdoor recreation facilities. There is a need for more parks, seashore areas, and open spaces for public enjoyment. The President's state of the Union message recognizes this and points to the need for action:

"We must act now to protect this heritage. In a fruitful new partnership with the States and cities the next decade should be a conservation milestone. We must make a massive effort to save the countryside and establish—as a green legacy for tomorrow—more large and small parks, more seashores and open spaces than have been created during any period in our history."

The funds requested for assistance to States will help substantially in a "first step" effort to close the gap that exists between the need and the supply of areas and facilities.

Status of assistance to States program.—Based on the statewide outdoor recreation plan requirements recently issued by this Bureau, practically all the States are taking action to initiate, review, or complete their outdoor recreation plans. Although Federal funds have not been appropriated as yet to assist the States, many States have incurred or are incurring costs which they expect to be shared in part from funds appropriated from the land and water conservation fund.

Section 5(c) of Public Law 88–578 states in part: "No payment may be made to any State for or on account of any cost or obligation incurred or any service rendered prior to the date of approval of this act." The Bureau has received advice from the Office of the Solicitor, Department of the Interior, that under the authority of this provision, costs or obligations incurred by the States since September 3, 1964, the date of approval of the act, and which are related to the purposes of this act may properly be considered for partial reimbursement by the Bureau, subject to the availability of appropriations therefor a portion of the funds requested herein will be used to reimburse the States for those costs which are determined to be appropriate.

The Bureau has taken several significant steps in developing procedures and regulations and in organizing to administer the grants-in-aid program. These actions are listed on page 26 of this document.

In November 1964 the States, territories, and the District of Columbia were requested to inform the Bureau of the anticipated State and local government funds expected to be available in 1966 to match Federal funds. The information received is summarized below and totals over $300 million. This total figure includes amounts for several States which exceed by far the 7-percent limitation on total grants-in-aid funds that may be made available to any one State.

STATE AND LOCAL MATCHING FUNDS ESTIMATED TO BE AVAILABLE IN FISCAL YEAR 1966

States	Planning	Acquisition and development	Total
Alabama			
Alaska	$135,000	$610,000	$745,000
Arizona	25,000	1,400,000	1,425,000
Arkansas	250,000	4,500,000	4,750,000
California	1,732,851	86,199,100	87,931,951
Colorado	171,925	2,325,700	2,497,625
Connecticut	25,000	27,615,550	27,640,550
Delaware	15,000	1,504,750	1,519,750
Florida	50,000	2,200,000	2,250,000
Goergia	45,000		45,000
Hawaii	60,000	1,250,000	1,310,000
Idaho	38,000	729,000	767,000
Illinois	35,000	26,000,000	26,035,000
Indiana	25,000	3,528,650	3,553,650
Iowa	275,000	4,225,000	4,500,000
Kansas	44,500	757,800	802,300
Kentucky	50,000	5,500,000	5,550,000
Louisiana	133,000	1,000,000	1,133,000
Maine	5,500	777,100	782,600
Maryland		13,000,000	13,000,000
Massachusetts		2,000,000	2,000,000
Michigan	94,955	9,220,392	9,315,347
Minnesota	525,000	7,524,000	8,049,000
Mississippi	25,000	125,000	150,000
Missouri		4,000,000	4,000,000
Montana	20,000	165,000	185,000
Nebraska	70,568	2,240,773	2,311,341
Nevada	100,000	5,300,000	5,400,000
New Hampshire		1,480,000	1,480,000
New Jersey	170,000	25,200,000	25,370,000
New Mexico	13,500	1,720,500	1,734,000
New York	100,000	5,090,000	5,190,000
North Carolina	150,000	2,350,000	2,500,000
North Dakota	25,000	875,000	900,000
Ohio	500,000	20,000,000	20,500,000
Oklahoma	15,000	1,500,000	1,515,000
Oregon	90,000	2,682,000	2,772,000
Pennsylvania	170,000	2,730,000	2,900,000
Rhode Island	50,000	6,450,000	6,500,000
South Carolina			
South Dakota	5,000	250,000	255,000
Tennessee	300,000	1,700,000	2,000,000
Texas	43,420	3,021,634	3,065,054
Utah	110,000	1,090,000	1,200,000
Vermont		1,200,000	1,200,000
Virginia	24,000	1,200,000	1,224,000
Washington	311,659	1,069,849	1,381,508
West Virginia	510,000	1,510,000	2,020,000
Wisconsin	200,000	6,000,000	6,200,000
Wyoming	100,000	400,000	500,000
Subtotal, States	6,838,878	301,216,798	308,055,676
District of Columbia and territories:			
District of Columbia		1,585,000	1,585,000
Puerto Rico			
Virgin Islands			
Guam			
American Samoa			
Subtotal, District of Columbia and territories		1,585,000	1,585,000
Total	6,838,878	302,801,798	309,640,676

NOTE.—Estimates were not received from those States or territories listed but for which no funds are shown.

2. Federal program

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
Federal program			$49,424,000	+$49,424,000

2. Federal program

A total of $49,424,000 is requested for 1966 to provide funds for the acquisition of land and water areas by the National Park Service, Forest Service, and the Bureau of Sport Fisheries and Wildlife. The amount to be made available to each agency is shown:

National Park Service	$26, 031, 000
Forest Service	20, 279, 000
Bureau of Sport Fisheries and Wildlife	3, 114, 000
Total	49, 424, 000

Need for funds requested.—The funds requested for acquiring land and water areas are to assist in meeting the needs of an increasingly heavy visitor load on Federal recreation areas and to acquire areas suitable for preserving certain species of wildlife threatened with extinction.

Sec. 6(a) of the Land and Water Conservation Fund Act of 1965 authorizes the use of moneys appropriated from the fund for acquisition of land, waters, or interests in land or waters. There are, quoted below, provisions of the act applicable to this program.

"*National Park System; recreation areas.*—Within the exterior boundaries of areas of the national park system now or hereafter authorized or established and of areas now or hereafter authorized to be administered by the Secretary of the Interior for outdoor recreation purposes.

"*National forest system.*—In holdings within (*a*) wilderness areas of the national forest system, and (*b*) other areas of national forests as the boundaries of those forests exist on the effective date of this Act which other areas are primarily of value for outdoor recreation purposes: *Provided*, That lands outside of but adjacent to an existing national forest boundary, not to exceed five hundred acres in the case of any one forest, which would comprise an integral part of a forest recreational management area may also be acquired with moneys appropriated from this fund: *Provided further*, That not more than 15 per centum of the acreage added to the national forest system pursuant to this section shall be west of the 100th meridian.

"*Threatened species.*—For any national area which may be authorized for the preservation of species of fish or wildlife that are threatened with extinction.

"*Recreation at refuges.*—For the incidental recreation purposes of section 2 of the Act of September 28, 1962 (76 Stat. 653; 16 U.S.C. 460k–1)."

Section 6(a) also provides for payment into miscellaneous receipts as a partial offset of those capital costs, if any, of Federal water development projects hereafter (from January 1, 1965) authorized to be constructed by or pursuant to an act of Congress which are allocated to public recreation and the enhancement of fish and wildlife values and financed through appropriations to water resource agencies.

This provision will not become effective until such time as projects are authorized and the areas have been designated as areas where fees may be charged. Therefore no funds are included in this estimate for payment into miscellaneous receipts.

Plan of work.—Land and water areas scheduled to be acquired by the National Park Service and Forest Service during fiscal year 1966 are priority acquisitions for meeting recreation needs. A substantial portion of the estimate is to acquire inholdings needed to round out Federal areas so that they can be managed more effectively and better serve the visiting public. Proposed acquisitions have been scheduled to the extent possible in those areas of the Nation that show the greatest deficit in recreation resources.

The estimate for the Bureau of Sport Fisheries and Wildlife will provide areas for certain species of migratory birds which are seriously threatened with extinction. The Bureau of Sport Fisheries and Wildlife intends to acquire land and water areas that will be best suited as habitat for these birds and that will give them a chance to survive.

Status of program.—The fiscal year 1966 estimate will provide for the first full-year's operations under the act. No acquisitions of land or water areas have been made as yet from the fund; however, implementing actions have been taken by the Federal agencies concerned among which was a joint review by the Bureau of Outdoor Recreation and the applicable land-acquiring bureau of proposed acquisitions for 1966. This review was undertaken to assure, among other things, that the proposed acquisitions are of the highest priority, are authorized by law, and will effectively assist in meeting the needs for recreation resources.

There follows a justification of the proposed acquisitions by the National Park Service, Forest Service, and Bureau of Sport Fisheries and Wildlife:

National Park Service

Acquisition of lands program

The year 1966 will be the first full fiscal year for which the Service's land acquisition fund requirements can be requested under the Land and Water Conservation Fund Act. The proposed program for 1966, in the total amount of $26,031,000, is discussed below:

Requirements for recently authorized areas:	
Cape Cod National Seashore, Mass	$4, 450, 000
Fire Island National Seashore, N.Y	4, 000, 000
Ozark National Scenic Riverways, Mo	4, 000, 000
Allegheny Portage Railroad National Historic Site and Johnstown Flood National Memorial, Pa	320, 000
Fort Larned National Historic Site, Kans	329, 000
Minute Man National Historical Park, Mass	500, 000
Subtotal	13, 599, 000
George Washington Memorial Parkway, Md.: So-called gold mine tract	2, 000, 000
Inholdings in 42 park areas	10, 432, 000
Grand total	26, 031, 000

Need for funds.—Privately owned and State owned lands within the authorized areas of the national park system constitute a major problem in the management, protection, maintenance, operation, and development of the individual areas in which they lie. Of the total of approximately 26,850,000 authorized acres in the system, including 13 recently authorized areas, about 715,000 were privately or State owned as of October 15, 1964. Until the most essential of these lands are acquired by the United States, some of the consequences which must be endured are:

1. Private development and operation of facilities within the parks and monuments over which there is no public control but which owe their profit-making capacity to park visitors.
2. Cutting of timber with consequent scars and impairment of park scenery.
3. Operation of undesirable establishments or activities.
4. Creation of real estate subdivision.
5. Conduct of land-scarring mining operations and, after the cessation of mining, the existence of mining debris and of deteriorating structures.
6. Costly delays in needed developments or greater expense because of the necessity of "going around" private lands or establishing public developments in less desirable locations.
7. Construction of commercial and other structures on lands whose acquisition thereafter becomes more expensive.
8. Adverse impact of wildlife and habitat ecology.

As new areas are authorized for establishment from year to year and as boundaries of existing areas are enlarged the land acquisition fund requirement increases. The funds requested are needed for the land acquisition items, as follows:

Cape Cod National Seashore, Mass., $4,450,000

Public Law 87–126, approved August 7, 1961, authorized the establishment of this area and the appropriation of not to exceed $16 million for land acquisition. The appropriations made to date are as follows: 1962 fiscal year, $2,250,000; 1963 fiscal year, $4 million; 1964 fiscal year, $1,300,000, including $1 million which was transferred from Minute Man National Historical Park, Mass.; and 1965 fiscal year, $3 million, making a total of $10,550,000 made available to date. The amount of $4,450,000 requested in the estimate will support an expedited land acquisition program in 1966 fiscal year to establish new administrable areas and enlarge existing administrable areas within the gross area authorized, leaving $1 million of the statutory limitation to be requested in future fiscal years.

Fire Island National Seashore, N.Y., $4 million

Public Law 88–587, approved September 11, 1964, authorized the establishment of this area and the appropriation of not to exceed $16 million for land acquisition. The amount of $1,100,000 was provided in a 1965 fiscal year supplemental appropriation to initiate the land acquisition program. Preparatory to starting negotiations for the purchase of lands, appraisals, surveys, and title work must be accomplished. However, negotiations will be carried on simultaneously for properties not requiring preliminary title studies. An additional $1 million is needed for this purpose and is proposed for inclusion in a supplemental estimate to be considered during the early part of the 1965 calendar year. The $4 million requested herein is also needed to sustain an accelerated land program based on appraisal and title evidence compiled in the preliminary studies. Since the enactment of Public Law 88–587 extensive building operations have been started by entrepreneurs within the approved boundaries. It will be advantageous to the United States to acquire all the lands in as short a time as possible to forestall construction of improvements, with the consequent increase in costs.

Ozark National Scenic Riverways, Mo., $4 million

Public Law 88–492, approved August 27, 1964, authorized the establishment of this area and the appropriation of not more than $7 million for land acquisition. An initial amount of $500,000 is needed prior to the 1966 fiscal year and is proposed for inclusion in a supplemental estimate to be considered during the early part of the 1965 calendar year. That amount plus the $4 million requested herein will in part be used for obtaining appraisals, title evidence, and land surveys, and in part to support accelerated negotiations and to purchase lands to comprise administrable units as expeditiously as possible.

Allegheny Portage Railroad National Historic Site and Johnstown Flood National Memorial, Pa., $320,000

Public Law 88–546, approved August 31, 1964, authorized the establishment of both areas and the appropriation of not more than $2 million for land acquisition and development. The amount of $445,000 is the estimated cost of the land to be acquired in the two areas. It is anticipated that a 1965 fiscal year supplemental estimate will be submitted for consideration early in the 1965 calendar year and will include the amount of $125,000 for obtaining surveys, title evidence, search and appraisal estimates, and for initiating negotiations for the purchase of lands in both areas. It is contemplated that the appraisal estimates and title evidence thus obtained will support a land acquisition program in the amount of $320,000 in the 1966 fiscal year.

Fort Larned National Historic Site, Kans., $329,000

Public Law 88–451, approved August 31, 1964, authorized the establishment of this area and the appropriation of not more than $1,273,000 for land acquisition and development costs. The amount of $454,000 is the estimated cost of the land to be acquired. It is anticipated that a 1965 fiscal year supplemental estimate will be submitted for consideration early in the 1965 calendar year and will include the amount of $125,000 for obtaining surveys, title evidence, and appraisal estimates, and for initiating negotiations for the purchase of lands. The estimate for the 1966 fiscal year in the amount of $329,000 will expedite the land acquisition program supported by land data compiled in the 1965 fiscal year.

Minute Man National Historical Park, Mass., $500,000

Public Law 86–321, approved September 21, 1959, authorized the establishment of this area and the appropriation of not more than $5 million for the purchase of lands. The following amounts have been appropriated for land acquisition purposes: 1961 fiscal year, $500,000; 1962 fiscal year, $2.5 million; 1963 fiscal year, $1.5 million; and 1964 fiscal year, $500,000, all of which totals $5 million, the amount of the statutory monetary limitation. The 1964 fiscal year supplemental appropriation act authorized the transfer to Cape Cod National Seashore of $1 million of the amount previously provided for purchasing land at Minute Man National Historical Park. This transfer reduced to $4 million the total funds made available for Minute Man National Historical Park. The requested $500,000 will restore to Minute Man National Historical Park a portion of the amount diverted to Cape Cod National Seashore and will allow the Service to resume its long-range land acquisition program.

George Washington Memorial Parkway, Md., $2 million, gold mine tract

To acquire a scenic strip of land for a section of the George Washington Memorial Parkway and to provide land to meet the expanding Metropolitan Washington

recreation needs, it is recommended that the so-called gold mine tract embracing approximately 330 acres of land near Great Falls on the Maryland side of the Potomac River be acquired as soon as possible to forestall imminent development that will create a blot on the magnificent river views prevailing in this vicinity. The acquisition of the property as an entity will avoid severance damages. The land adjoins the U.S.-owned Chesapeake & Ohio Canal and will consolidate park lands and enhance the U.S.-owned Great Falls of the Potomac.

Inholdings in 42 park areas, $10,432,000

The value of privately and State-owned lands within the authorized boundaries of the parks after 1965 (not including the seven recently authorized projects discussed in the foregoing) is now estimated at $125 million. The amounts appropriated in recent years for the purchase of real property have helped immeasurably in the preservation of lands from exploitation, providing needed lands for development and restoration purposes, saving historical structures and sites, rounding out areas for management, protection, and interpretive purposes, and providing additional public lands in heavily visited areas. The acquisition of significant and needed lands should be accelerated to forestall adverse and nonconforming uses of inholdings and to meet the needs of the tremendous increase in visitation in all park areas. The continuing nationwide upward trend in realty values is accentuated within the park areas where the inholdings are enhanced by the surrounding U.S. lands and their administration and preservation by this Service. The inholdings, unimproved and improved, and those being currently improved, should be acquired as soon as possible in the interest of economy. The $10,432,000 requested for purchasing inholdings in 42 of the park areas in fiscal year 1966 would in general be used to purchase lands for one or a combination of the following reasons: to conserve and preserve lands threatened by despoliation; to provide needed space for construction and development purposes; to halt nonconforming uses; and to open lands for public use in overcrowded areas subject to heavy and increasing visitation.

The following is a listing of the park areas containing inholdings of the highest priority (exclusive of those discussed elsewhere in this estimate), in which it is contemplated now that land acquisition will be undertaken in 1966:

Badlands National Monument, S. Dak	$86,000
Blue Ridge Parkway, Va.-N.C	49,500
Capitol Reef National Monument, Utah	83,000
Chiricahua National Monument, Ariz	75,000
Catoctin Mountain Park, Md	6,500
Colonial National Historical Park, Va	153,000
Craters of the Moon National Monument, Idaho	2,000
Dinosaur National Monument, Utah-Colo	155,000
Edison National Historic Site, N.J	200,000
Effigy Mounds National Monument, Iowa	1,115
Everglades National Park, Fla	1,125,500
El Morro National Monument, N. Mex	23,000
Fort Laramie National Historic Site, Wyo	12,000
Glacier Bay National Monument, Alaska	2,000
Glacier National Park, Mont	905,000
Grand Canyon National Park, Ariz	45,000
Grand Canyon National Monument, Ariz	75,000
Grand Portage National Monument, Minn	11,000
Grand Teton National Park, Wyo	1,000,000
Great Sand Dunes National Monument, Colo	30,000
Great Smoky Mountains National Park, Tenn.-N.C	350,000
Guilford Courthouse National Military Park, N.C	95,000
Hot Springs National Park, Ark	9,000
Kings Canyon National Park, Calif	40,000
Lake Mead National Recreation Area, Ariz.-Nev	250,000
Lassen Volcanic National Park, Calif	71,000
Mesa Verde National Park, Colo	30,000
Montezuma Castle National Monument, Ariz	35,000
Natchez Trace Parkway, Ala.-Miss.-Tenn	25,000
Mount Rainier National Park, Wash	16,000
Olympic National Park, Wash	1,080,500
Organ Pipe Cactus National Monument, Ariz	115,000
Pipestone National Monument, Minn	10,000

Rocky Mountain National Park, Colo	1,050,000
Scotts Bluff National Monument, Nebr	95,000
Sequoia National Park, Calif	53,000
Theodore Roosevelt National Memorial Park, N. Dak	69,000
Virgin Islands National Park, V.I	1,000,000
Walnut Canyon National Monument, Ariz	8,500
Whitman Mission National Historic Site, Wash	5,000
Yosemite National Park, Calif	1,435,385
Zion National Park, Utah	550,000
Total	10,432,000

The foregoing amounts, totaling $26,031,000, include funds for land acquisition expenses, such as salaries and general expenses of the land acquisition staffs, appraisals, surveys, title evidence, etc.

Forest Service

LAND ACQUISITION PROGRAM

The acquisition of lands, waters, or interests therein that are primarily of value for outdoor recreation purposes is urgently needed to meet the tremendous public demand which has developed in recent years for outdoor recreation areas, facilities and opportunities. The increase in use of available national forest recreation facilities by the American people since World War II has far exceeded the increase in population. While the population increased 27 percent during this period, the number of users of national forest recreation facilities increased 416 percent. In view of this dynamic growth in recreation use, the available land base suitable for recreation development and enjoyment is becoming increasingly scarce.

A wide variety of quality recreation lands throughout the national forest system is included within the planned acquisition program. The majority, 92 percent, are within the more heavily populated Eastern United States. Many offer unique recreation opportunities which, if not acquired soon, will be lost forever to future generations.

Acquisition of a number of properties will provide a practical program for recreation development in economically depressed rural areas. Increased recreation opportunities will result in continued growth of tourist and other recreation-based industries in these areas.

Any appropriation made available to the Forest Service from the land and water conservation fund will be expended under the authorities of the act of March 1, 1911, as amended (16 U.S.C. 513–519), and the act of August 3, 1956 (7 U.S.C. 428a).

The following two tables summarize the funds requested by States and by area classifications.

FISCAL YEAR 1966 ESTIMATE

Summary by States

State	Acres	Cost	State	Acres	Cost
Alabama	590	$115,000	New Mexico	670	$533,750
Arizona	424	282,750	North Carolina	6,000	300,750
Arkansas	2,339	258,400	Ohio	3,470	446,200
California	5,400	817,100	Oklahoma	8,390	1,174,350
Colorado	1,050	293,000	Oregon	1,414	204,750
Florida	1,400	242,650	Pennsylvania	2,000	1,150,000
Georgia	5,000	1,150,000	South Carolina	900	154,100
Idaho	2,723	754,000	Tennessee	3,000	172,500
Illinois	6,400	620,825	Texas	40	46,000
Indiana	2,069	271,600	Utah	253	279,500
Kentucky	10,268	421,250	Vermont	3,800	164,100
Louisiana	10	12,650	Virginia	22,700	1,325,000
Michigan	42,197	7,182,500	Washington	500	65,000
Minnesota	1,126	98,575	West Virginia	8,000	362,900
Mississippi	467	89,600	Wisconsin	3,027	168,900
Missouri	9,964	963,300	Wyoming	160	25,500
Montana	460	120,750			
Nevada	120	11,750	Total	156,331	20,279,000

Summary by area classification

WILDERNESS AREAS

State	Acres	Cost	State	Acres	Cost
California	2,200	$230,000	Oregon	939	$74,750
Colorado	300	5,500			
Idaho	1,270	535,750	Total, wilderness areas	4,829	857,750
Nevada	120	11,750			

PRIMITIVE AREAS

Arizona	424	$282,750	New Mexico	252	$206,000
California	2,540	362,100			
Idaho	1,150	143,750	Total, primitive areas	4,366	994,600

OTHER RECREATION AREAS

Alabama	590	$115,000	Oklahoma	8,390	$1,174,350
Arkansas	2,339	258,400	Oregon	475	130,000
California	660	225,000	Pennsylvania	2,000	1,150,000
Colorado	750	287,500	South Carolina	900	154,100
Florida	1,400	242,650	Tennessee	3,000	172,500
Georgia	5,000	1,150,000	Texas	40	46,000
Idaho	303	74,500	Utah	253	279,500
Illinois	6,400	620,825	Vermont	3,800	164,100
Indiana	2,069	271,600	Virginia	22,700	1,325,000
Kentucky	10,268	421,250	Washington	500	65,000
Louisiana	10	12,650	West Virginia	8,000	362,900
Michigan	42,197	7,182,500	Wisconsin	3,027	168,900
Minnesota	1,126	98,575	Wyoming	160	25,500
Mississippi	467	89,600			
Missouri	9,964	963,300	Total, other recreation areas	147,136	18,426,650
Montana	460	120,750			
New Mexico	418	327,750			
North Carolina	6,000	300,750	Grand total, all areas	156,331	20,279,000
Ohio	3,470	446,200			

FISH AND WILDLIFE SERVICE, BUREAU OF SPORT FISHERIES AND WILDLIFE

The estimate of $3,114,000 is for land acquisition to provide nesting and breeding habitat for certain migratory game species threatened with extinction.

Need for funds requested.—These species are threatened in the United States, principally because of the destruction of nesting and breeding habitat. This destruction occurs primarily through conversion of wetland areas along waterways and elsewhere throughout the Nation for purposes of urban and industrial expansion, and equally important, through drainage of wet lands in rural areas to increase the propuction of agricultural crops. Because of the rapid destruction of suitable habitat and the constantly rising cost of land, a program of $3,114,000 is proposed for fiscal year 1966 for the following:

LAND ACQUISITION PROGRAM

Endangered species	Estimated acres	Estimated cost
Whooping crane	5,000	$1,100,000
Florida sandhill crane	5,000	1,000,000
New Mexican duck	4,000	864,000
Hawaiian species	5,000	150,000
Total	19,000	3,114,000

Whooping crane: Area is in southeastern Texas, comprising 5,000 acres at an estimated cost of $1,100,000 to be located in general vicinity of Matagorda and St. Joseph's Islands, and St. Charles Bay, Tex. Whooping cranes going north in the spring of 1964 numbered only 32, all of which had wintered either on the Aransas National Wildlife Refuge in Texas or on the nearby Matagorda and St. Joseph's Islands. Whooping cranes are adapted to a specific type of habitat for

wintering purposes, which can be provided only in this southeastern portion of Texas. This area will be available to the public for recreation purposes during the season when the cranes have moved north.

Florida Sandhill crane: Area to be located in general vicinity of Lake Okeechobee, Fla., comprising 5,000 acres at an estimated cost of $1 million. Wholesale drainage of the St. John's River Valley and the loss of the prairie-deep marsh biotic communities to urbanization, drainage, farming, and grazing has severely reduced the habitat for the Florida sandhill crane. A total of not less than 10,000 acres is required for the above. The 5,000 acres will form a nucleus area. Only 700 birds are believed still in existence.

New Mexican duck: A total of 4,000 acres, at an estimated cost of $864,000 are needed in the Rio Grande and Gila River Valleys and along their tributaries in Arizona and New Mexico. At the present time, there are possibly fewer than 150 New Mexican ducks remaining. Their breeding areas have been destroyed by channelization of streams and the drainage of lands necessary for nesting. A guaranteed water supply will be required.

Hawaiian species: A total of 5,000 acres at an estimated cost of $150,000 is divided as follows: Leasing of 3,000 acres for the Nene, official State bird of Hawaii, in the high lava flow country on the east slopes of Mona Loa and Mona Kea Islands of Hawaii. This species almost became extinct some years ago when its population was reduced to less than 50 birds. Because of insufficient predator control and protection from hunting, the wild population has now decreased, and release of birds reared in captivity has risen to possibly 300 individuals. This includes birds released on the island of Maui where they had entirely disappeared.

Leasing of 2,000 acres of fresh water ponds and marshes is divided between the main Hawaiian Islands for the Hawaiian duck on all of the main islands where it is now reduced to 400 to 600 birds; the Hawaiian gallinule on islands of Kauai, Molokai, and Oahu, which now includes only 200 individuals; and the Hawaiian stilt on the islands of Kauai, Niihau, and Oahu where it has been reduced to a total of only 1,300 individuals. Acquisition of the remaining wetland habitat will permit control of trespass and pollution and provide places for all of the threatened water birds to nest.

The national wildlife refuge system is an integral and essential part of the total international program for the conservation of migratory waterfowl on the North American Continent and the protection of all forms of wildlife. The Bureau of Sport Fisheries and Wildlife has cooperated with national and international organizations in publicizing these needs and in managing refuges for endangered wildlife insofar as authority and funds will permit. The refuge program also assures that people will have an opportunity to see and enjoy the wildlife and other natural resources which are perpetuated. The proposed acquisition of lands as indicated are to initiate a program which will carry out acts and laws which have recently been passed by the Congress for this purpose.

The first opportunity for concerted action by this Bureau occurred with congressional approval of the Land and Water Conservation Fund Act of 1965 (Public Law 88–578) on September 3, 1964. This law provides the basis for division of funds under this act to Federal agencies. Section 6(a)(1) authorizes funds for the acquisition of land, waters, or interests in land or waters for "Threatened species—For any national area which may be authorized for the preservation of species of fish or wildlife that are threatened with extinction." The acquisition of lands listed herein has been authorized under the 1929 Migratory Bird Conservation Act, and all species are classified in article I of the 1916 Migratory Bird Treaty as "migratory game birds." The figures given for costs of individual projects are estimates only. Final costs of each project will be the amount approved by the Migratory Bird Conservation Commission.

5. Administrative expenses

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
Administrative expenses	----------	----------	$1,440,000	+$1,440,000

3. Administrative expenses

A total of $1,440,000 is requested by the Bureau of Outdoor Recreation to coordinate and administer the programs financed from the land and water conservation fund.

Need for funds requested.—The funds requested for 1966 are needed to enable the Bureau to administer the grants-in-aid program to States and to coordinate the Federal aspects of the land and water conservation fund, including the review and appraisal of proposed acquisitions of land and water areas by Federal bureaus.

Plan of work.—The Bureau will review and evaluate all project proposals and applications submitted by States seeking financial assistance for planning, for acquisition of land and water areas and for development of areas, and will determine whether or not the proposals are in conformance with approved statewide outdoor recreation plans, and other provisions of the act. It will provide continuing review of State expenditures to assure that projects are being carried out in accordance with approved plans and to protect the Federal Government's interests.

The Bureau will continue to provide leadership and promote coordination of all programs financed from the fund. It will review and evaluate proposed Federal acquisitions, provide for the design and issuance of the automobile bumper sticker for 1966, assure that administering agencies are posting areas designated as fee areas and that consistency exists among the agencies in fees assessed. It will also take action as necessary to issue or provide for the issuance of needed regulations, guidelines, and operating criteria, as necessary, to implement Public Law 88–578. In addition, it will—

(1) Review the adequacy of the criteria used to designate areas where fees will be charged and recommend modifications as necessary.

(2) Develop criteria for establishing priority of land purchases by Federal agencies from the fund.

(3) Assist in the development of long-range land acquisition programs by the applicable Federal agencies.

Status of administrative program.—Considerable planning and preliminary actions have been taken as indicated:

FEDERAL ASPECTS

(1) Meetings have been held with interested Federal agencies to discuss necessary implementing actions and to encourage full cooperation of the agencies. Briefing meetings also have been held with private organizations interested in the program.

(2) A proposed Executive order concerning various administrative aspects of the act has been drafted, reviewed by the Recreation Advisory Council, and is expected to be issued shortly.

(3) Admission and user fee regulations for use by Federal agencies have been prepared.

(4) The automobile bumper sticker for 1965 has been designed and printed, and steps are being taken to distribute the stickers to selling agencies.

(5) Administering agencies have been requested to initiate action to post designated areas and institute procedures for collecting fees.

(6) A review was made of the proposed land acquisition programs for fiscal years 1965 and 1966 of National Park Service, Forest Service, and the Bureau of Sport Fisheries and Wildlife, and certain adjustments were made as a result of the review. The adjustments were primarily concerned with shifting funds to acquire lands in areas where the need is greatest.

STATE ASPECTS

(1) A meeting has been held with the States and territories to explain the act and to discuss the best methods to be followed in implementing it. Forty-eight States, the District of Columbia, and Puerto Rico were represented.

(2) Procedures have been devised for apportioning and reapportioning funds appropriated for State assistance. The act provides that two-fifths of the funds appropriated for State purposes shall be distributed equally among the several States and three-fifths shall be distributed on the basis of need, taking certain factors into account. The procedures developed by the Bureau concern the three-fifths portion.

(3) Secretarial regulations applicable to State participation under the act have been drafted and will be issued in the near future.

(4) Other informational material to assist the States in applying for financial assistance and in carrying out projects financed in part from the fund has also been drafted.

ITEMIZATION OF ESTIMATE

	Actual, 1964	Available, 1965	Estimate, 1966
Program and financing: Total obligations and appropriation			$125,000,000
Obligations by objects:			
11.0 Personnel compensation			2,313,000
12.0 Personnel benefits			171,000
21.0 Travel and transportation of persons			482,000
22.0 Transportation of things			55,000
23.0 Rent, communications, and utilities			186,000
24.0 Printing and reproduction			160,000
25.1 Other services			1,537,000
25.2 Services of other agencies			410,000
26.0 Supplies and materials			580,000
31.0 Equipment			203,000
32.0 Lands and structures			44,762,000
41.0 Grants, subsidies, and contributions			74,141,000
Total obligations			125,000,000

LAND AND WATER CONSERVATION FUND

Mr. CRAFTS. I would like to make some statements in connection with the authorization for the land and water conservation fund if it suits your pleasure.

Chairman HAYDEN. All right, go ahead.

Mr. CRAFTS. The Land and Water Conservation Fund Act was passed by the Congress last September.

One activity that I think is of consequence in this area is the preparatory work for the land and water conservation fund, which I will talk about a little later. We have spent about $160,000 in preparatory work. We also have been involved in the coordination of activities which we have undertaken with the Forest Service, the National Park Service, and the Bureau of Sport Fisheries and Wildlife in developing the estimates for land acquisition which are recommended to you for financing under the authority of that act. I think, Mr. Chairman, this briefing, to a very large degree, covers our activities under the Land and Water Conservation Fund Act, but I would point out to you that we are asking for about $3.4 million under our organic authority whereas the budget request is $125 million under the Land and Water Conservation Fund Act.

The latter act is largely a pay-as-you-go act in a very true sense.

SUMMARY OF STATUTORY PROVISIONS

I would like to submit for the record something that you do not previously have which is only a page in length. This is a one-page summary of the provisions of this bill, because this is a complex bill and many aspects of it are not clearly understood partly because it is so new.

ACTIONS NECESSARY TO IMPLEMENTATION OF ACT

I would also like to submit for the record, if it meets your pleasure, two brief lists. One is a list of the definitive actions that are required by the States to implement this legislation and another is a list of some 15 definitive actions that are required by the executive branch in order to implement this legislation. These are the things that are going on at the present time. And I would like to offer these for the record.

Chairman HAYDEN. They may all be included in the record.

(The information referred to follows:)

LAND AND WATER CONSERVATION FUND ACT AS APPROVED BY THE PRESIDENT

This act creates a land and water conservation fund from which appropriations will be made to provide outdoor recreation areas and facilities at State, local, and Federal levels. It becomes effective January 1, 1965. The life of the fund is limited to 25 years. Its purpose is to provide a means of bringing our national efforts abreast of our most urgent outdoor recreation needs, principally by assisting

the States to acquire and develop lands with high recreation potential before such lands are put to other uses, or become prohibitively costly to acquire.

This fund derives revenue from (1) nominal admission and user fees at Federal recreation areas designated by the President, (2) net proceeds from the sale of Federal surplus real property, and (3) existing Federal taxes on motorboat fuels. Provision is also made for advance appropriations up to an average of $60 million annually during an 8-year period beginning in 1967. Advance appropriations will be repaid from other fund sources beginning the 11th year. Moneys in the fund not appropriated within 2 years following the fiscal year after being credited to the fund shall be transferred to miscellaneous receipts of the Treasury.

In the absence of a provision to the contrary in the act making an appropriation from the fund, normally 60 percent of annual appropriations from the fund will be available to the States on a 50–50 matching basis for planning, acquisition, and development of land and water areas for public outdoor recreation purposes, but the President during the first 5 years may vary such percentage by 15 points either way. An approved comprehensive statewide plan is a prerequisite to a grant for State acquisition and development projects. Funds may be transferred by a State to its political subdivisions for their projects if the latter are in accord with such plan.

The remaining portion of the fund—normally 40 percent—will be available to certain Federal agencies for acquisition of certain needed recreation areas, and for payment into miscellaneous receipts of the Treasury to help offset capital costs of Federal water development projects which are allocated to public recreation and fish and wildlife enhancement.

The Land and Water Conservation Fund Act: (1) Does not automatically provide financing for outdoor recreation. All moneys from the fund must be obtained through the regular budgetary process and be appropriated by the Congress. (2) Does not provide any Federal acquisition authority. Areas may be acquired by Federal agencies only if the authority has already been or is hereafter provided by an act of Congress. (3) In no way changes existing procedures for disposal of Federal surplus real property. It does not change the purposes for which such property may be disposed, the methods for making such disposition, nor the administrative jurisdiction for handling such disposals. (4) Does not provide unlimited authority to establish recreation fees for use of Federal areas and facilities.

Entrance or admission fees to Federal areas may be charged only if all these conditions are met: (1) The area is specifically designated and posted; (2) the area is administered by a Federal agency (which excludes areas under lease to State or local public agencies or private agencies); (3) facilities or services for the benefit of the recreation user are provided at Federal expense; and (4) the area is administered primarily for scenic, scientific, historical, cultural, or other recreational purposes.

No fees of any kind may be charged under authority of the act: (1) For use of any waters; (2) for travel by private noncommercial vehicle through designated areas on Federal aid highways, on national parkways, on any road within the national forest system, or on a public land area commonly used by the public for through travel; (3) for access to private inholdings; (4) for any commercial or other activities not related to recreation; or (5) as a Federal hunting and fishing license.

Decisive Actions Required To Be Taken by States To Implement the Land and Water Conservation Fund Act, Public Law 88–578

(1) Governor, after consultation with attorney general and other State officials, should be assured that State has adequate authority to participate in benefits of program within requirements of the act.

(2) Section 2(a): Recommendations by the Governor to the official of the United States responsible for establishing user fees in Federal lands more than half of which has been contributed by the government of the State.

(3) Section 5(d): Submission of a comprehensive statewide outdoor recreation plan as a prerequisite for financial assistance for acquisition or development projects. Such plan, among other things, shall name the State agency that will have authority to act for the State in dealing with the Secretary of the Interior for the purposes of the Fund Act.

(4) Section 5(f): Submission to the Secretary of the Interior of planning, acquisition, or development projects for which financial aid is requested.

(5) Section 5(f): Written assurance from the State to the Secretary of the Interior of the State's ability and intention to finance its share of the cost of a

particular project and to operate and maintain at State expense the particular properties or facilities acquired or developed.

(6) Section 5(f): Designation by the Governor, or by State law, of a State official or agency having authority and responsibility to accept and administer funds paid by the Federal Government for approved projects.

(7) Section 5(f): Agreement by the State to provide: (a) Reports to the Secretary as may be reasonably necessary to enable the latter to perform his duties under the act, and (b) such fiscal control and fund accounting procedures as necessary to assure proper disbursement and accounting for Federal funds.

(8) Section 5(f): The maintenance of such records as the Secretary of the Interior shall prescribe as will facilitate an effective audit.

DECISIVE ACTIONS REQUIRED TO BE TAKEN BY THE FEDERAL GOVERNMENT TO IMPLEMENT THE LAND AND WATER CONSERVATION FUND ACT, PUBLIC LAW 88–578

(1) Section 2: The Treasury Department should establish procedures to cover the specified proceeds into the land and water conservation fund under section 2 (a), (b), and (c) and title II.

(2) Section 2(a): Issue Presidential regulations to designate or provide for the designation of land and water areas at which entrance admission and user fees shall be charged and to establish or provide for the establishment of such fees.

(3) Section 2(a): Provide for the directed consultation with Governors of the affected States concerning the intent to establish indicated fees at areas where more than one-half of the lands have been contributed by the State governments.

(4) Section 2(a): The Secretary of the Interior shall prescribe rules and regulations for collection of user fees established for areas under his administration. Similarly, heads of other departments and agencies shall do likewise.

(5) Section 2(a): Areas at which fees are to be charged shall be posted.

(6) Section 3 and section 4(a): The Secretary of the Interior shall prepare annual budget submissions to the Congress and a comprehensive statement of estimated requirements for the requested appropriations from the fund.

(7) Section 5(a) and 5(f): The Secretary of the Interior shall prepare regulations covering terms and conditions under which payments may be made to the States including the requirements for reports, fiscal control, and accounting procedures specified in section 5(f).

(8) Section 5(b): The Secretary of the Interior shall determine the formula for apportionment for each fiscal year of the sums available for State purposes.

(9) Section 5(b): The Secretary of the Interior shall notify each State of its apportionments and for nonobligated prior apportionments shall reapportion them in accordance with specifications of the act.

(10) Section 5(c): The Secretary of the Interior shall specify the manner by which matching funds and services of the States shall be considered satisfactory.

(11) Section 5(d): The Secretary of the Interior shall specify the requirements for an adequate comprehensive statewide outdoor recreation plan and shall indicate what shall be required in connection therewith as prerequisite for financial assistance for acquisition or development projects.

(12) Section 5(f): The Secretary of the Interior shall specify the general requirements for approval of planning, acquisition, or development projects and further indicate what constitutes appropriate written assurance of the State's ability and intention to finance its share of the cost of the particular projects and its intention to operate and maintain them at acceptable standards.

(13) Section 5(f): The Secretary of the Interior shall prescribe the records which recipients of assistance under the act shall keep, including the amount and disposition of funds received, total costs of the projects for which assistance is used, the nature of that portion of the cost supplied by other sources, and such other records as will facilitate an effective audit.

(14) Section 5(g): The President may issue regulations to assure coordination of planning, acquisition, and development programs under the Land and Water Conservation Fund Act with other related Federal programs and activities, including title VII of the Housing Act of 1961 and section 701 of the Housing Act of 1954.

(15) Section 6(a): Unless otherwise allotted in the appropriation act, the President shall allot moneys appropriated from the fund for Federal purposes in accord with the provisions of this section.

STATE LIAISON OFFICERS

Mr. CRAFTS. I would also like to offer for the record a list of liaison officers designated by the Governors of the States to work with us in connection with implementing State phases of this legislation. These are the official designations by the Governors of the States. They are certain individuals, occupying official capacities in State governments, and I think this would be of general interest.

Chairman HAYDEN. The list should be included in the record.

(The list referred to follows:)

OFFICIAL DESIGNATIONS BY STATE GOVERNORS

KEY

I—Liaison officers as listed in BOR's published list dated Aug. 15, 1964.

II—Designation required under sec. 5(d), Public Law 88-578: "The name of the State agency that will have authority to represent and act for the State in dealing with the Secretary for purposes of this Act." This designee will supersede the previous designee shown in col. I and serve as BOR's contact on other matters of mutual interest.

III—Designation required under sec. 5(f), Public Law 88-578: "Payments for all projects shall be made by the Secretary to the Governor of the State or to a State official or agency designated by the Governor or by Sate law having authority and responsibility to accept and to administer funds paid hereunder for approved projects."

X—No information received.

State	I Liaison officer	II Liaison officer	III Fiscal officer
Alabama	Department of conservation, Claude Kelley, director.	Department of conservation, Claude Kelley, director.	X.
Alaska	Department of natural resources, Phil Holdsworth, commissioner.	Department of natural resources, Phil Holdsworth, commissioner.	Department of administration.
Arizona	Arizona State Parks Board, Dennis McCarthy, director.	State recreation coordinating committee, Dennis McCarthy, executive director, Arizona State Parks Board.	State recreation coordinating committee.
Arkansas	Arkansas Planning Commission, Ted J. Morley, executive director.	Arkansas Planning Commissioner, Ted J. Morley, exxutive director.	Ted J. Morley, executive director, Arkansas Planning Commission.
California	The Resources Agency of California, Hugo Fisher, administrator.	Hugo Fisher, administrator, Resources Agency of California.	Hugo Fisher, administrator, Resources Agency of California.
Colorado	Division of natural resources, Richard T. Eckles, coordinator.	Game, fish, and parks commission, Mr. Harry R. Woodward, director, game, fish, and parks department.	X.
Connecticut	Department of agriculture and natural resources, Joseph N. Gill, commissioner.	Department of agriculture and natural resources, Joseph N. Gill, commissioner.	Department of agriculture and natural resources, Joseph N. Gill, commissioner.;
Delaware	Delaware State Planning Office, John A. Bivens.	Delaware State Planning Office, John A. Bivens.	Delaware State Planning Office.
Florida	Outdoor recreation planning committee, Ney C. Landrum, director.	X	X.
Georgia	Department of State parks, Horace G. Caldwell, director.	Horace G. Caldwell, director, department of State parks.	Ernest Davis, State auditor.
Hawaii	Department of planning and economic development, Shelley M. Mark, director.	Department of planning and economic development, Shelley M. Mark, director.	Shelley M. Mark, director, department of planning and economic development.
Idaho	Assistant to the Governor, Robert B. McCall.	Withheld	Withheld.
Illinois	Board of economic development, Gene Graves, executive director.	Gene Graves, director, board of economic development (for matters related to planning); department of conservation (for all other matters), William Lodge, director.	William Lodge, director, department of conservation.
Indiana	Indiana Department of Conservation, Donald L. Foltz, director.	Indiana Department of Conservation, John E. Mitchell.	Indiana Department of Conservation.

State	I Liaison officer	II Liaison officer	III Fiscal officer
Iowa	Iowa State Conservation Commission, E. B. Speaker, director.	Iowa State Conservation Commission, E. B. Speaker, Director.	E. B. Speaker, director, Iowa State Conservation Commission.
Kansas	State park and resources authority, Lynn Burris, Jr., director.	State park and resources authority, Lynn Burris, Jr., director.	X.
Kentucky	Commissioner of finance, L. Felix Joyner.	X	X.
Louisiana	State parks and recreation commission, Lamar Gibson, director.	State parks and recreation commission, Lamar Gibson, director.	State parks and recreation commission.
Maine	State park and recreation commission, Lawrence Stuart, director.	State park and recreation commission, Lawrence Stuart, director.	Treasurer of the State.
Maryland	Maryland State Planning Department, James J. O'Donnell, director.	Maryland State Planning Department, James J. O'Donnell, director.	Spencer Ellis, director, State department of forest and parks.
Massachusetts	Department of natural resources, Charles H. W. Foster, commissioner.	Massachusetts Department of Natural Resources, Charles H. W. Foster, commissioner.	Massachusetts Department of Natural Resources.
Michigan	Department of conservation, Ralph A. MacMullan, director.	Department of conservation, Ralph A. MacMullan, director.	Funds to be deposited in State treasury and disbursed in accord with State accounting laws.
Minnesota	Minnesota Conservation Department, commissioner of conservation, Wayne Olson.	Minnesota Conservation Department, Wayne H. Olson, commissioner.	Commissioner of conservation.
Mississippi	Robert E. Foster, comptroller of the Mississippi park system.	X	X.
Missouri	Missouri Conservation Commission, William E. Towell, director.	William E. Towell, director, Missouri Conservation Commission.	Governor.
Montana	Montana Fish and Game Department, recreation and lands development, Robert F. Cooney, chief director.	Montana Fish and Game Department, Robert F. Cooney, director, recreation and lands development.	Montana Fish and Game Department.
Nebraska	Game, forestation, and parks commission, Melvin O. Steen, director.	Game, forestation, and parks commission, Melvin O. Steen, director.	Game, forestation, and parks commission.
Nevada	Department of conservation and natural resources, Hugh Shamberger, director.	Department of conservation and natural resources, Elmo J. DeRicco, director.	X.
New Hampshire	State planning project, Mary Louise Hancock, project director.	X	X.
New Jersey	New Jersey Department of Conservation and Economic Development, Robert A. Roe, commissioner.	New Jersey Department of Conservation and Economic Development, Robert A. Roe, Commissioner.	New Jersey Department of Conservation and Economic Development.
New Mexico	State planning office, Jack Flynn, State planning officer.	State planning office, John W. Flynn, State planning officer.	State planning officer.
New York	Commissioner of conservation, Harold Wilm.	Conservation department, Harold G. Wilm, commissioner.	Harold G. Wilm, commissioner, conservation department.
North Carolina	North Carolina Recreation Commission, Ralph J. Andrews, director.	North Carolina Recreation Commission, Ralph J. Andrews, director.	Withheld.
North Dakota	Water conservation commission, Milo W. Hoisveen, State engineer.	Withheld	Do.
Ohio	Department of natural resources, Fred E. Morr, director.	Department of natural resources, Fred E. Morr, director.	Fred E. Morr, director, department of natural resources.
Oklahoma	Division of State parks, Tye Bledsoe, director.	Oklahoma Planning and Resources Board, Tye Bledsoe, director, division of State parks.	Oklahoma Planning and Resources Board, Charles L. Munroe, chairman of the board.
Oregon	Oregon Committee on Natural Resources, Dan P. Allen, executive secretary.	Oregon Highway Commission, Forrest Cooper, State highway engineer.	Oregon Highway Commission.
Pennsylvania	Department of forests and waters, Maurice K. Goddard, secretary.	Department of forests and waters, Maurice K. Goddard, secretary.	Governor's office.

State	I Liaison officer	II Liaison officer	III Fiscal officer
Rhode Island	Division of forests, Calvin Dunwoodie, chief, department of agriculture.	Department of agriculture and conservation, Frederick C. Lees, director.	Frederick C. Lees, director of agriculture and conservation.
South Carolina	South Carolina State Highway Commission, S. N. Pearman, chief highway commissioner.	South Carolina Wildlife Resources Department, James W. Webb, director.	X.
South Dakota	South Dakota Industrial Development Expansion Agency, Eugene Stearns, director.	Eugene Stearns, director, South Dakota Industrial Development Expansion Agency.	X.
Tennessee	Tennessee Department of Conservation, Donald M. McSween, commissioner.	Donald M. McSween, commissioner, Tennessee Department of Conservation.	Donald M. McSween, commissioner, Tennessee Department of Conservation.
Texas	Parks and wildlife department J. Weldon Watson, executive director.	Texas Parks and Wildlife Commission, Will E. Odom, chairman; Judge A. W. Moursund, commissioner; James M. Dellinger, commissioner (3 official designees).	Texas Parks and Wildlife Commission.
Utah	Governor's office, Robert P. Huefner, State planning coordinator.	Withheld	Withheld.
Vermont	Department of forests and parks, Perry H. Merrill, commissioner.	Interagency committee on natural resources, Perry Merrill, commissioner, department of forests and parks.	Interagency committee on natural resources of Governor as chairman of the interagency committee.
Virginia	Department of conservation and economic development, Marvin M. Sutherland, director.	Department of conservation and economic development, Marvin M. Sutherland, director.	Department of conservation and economic development, Marvin M. Sutherland, director.
Washington	State department of parks and recreation, C. H. Odegaard, director.	Interagency committee for outdoor recreation, Charles H. Odegaard, director, Washington State Parks and Recreation Commission.	Interagency committee for outdoor recreation.
West Virginia	Department of natural resources, Warden Lane, director.	West Virginia Department of Commerce, Koder M. Collison, commerce commissioner.	West Virginia Department of Commerce.
Wisconsin	Wisconsin Department of Resource Development, Frank Zeidler, director.	Department of conservation, director, L. P. Voigt.	Conservation department, L. P. Voigt, director.
Wyoming	Wyoming State Parks Commission, Harold S. S. Odde, director.	Designation witheld pending advice from attorney general.	
District of Columbia		Milo F. Christiansen, Superintendent of Recreation.	A. R. Pilkerton, accounting officer, District of Columbia government.
Guam		X	X.
Puerto Rico	Public parks and recreation administration, Julio E. Monagas, director.	Public parks and recreation administration, Julio E. Monagas, administrator.	Public parks and recreation administration, Julio E. Monagas, administrator.
Virgin Islands		X	X.
American Samoa		X	X.

FUNDING AND SOURCE OF FUNDING

Mr. CRAFTS. I would say that this legislation basically is an authorizing and funding legislation. It establishes a fund which is not available unless appropropriated by the Congress. This fund is made up from entrance and user fees at certain designated Federal recreation areas, income from sale of certain surplus property, and income from certain existing taxes on motorboat fuels. This fund, to the extent that it is appropriated by the Congress, is normally divided 60 percent to the States and 40 percent to the Federal agencies. There is some latitude in the bill for an adjustment in this division during the first 5 years by the executive branch and, of course, the Appropriations Committees may make any division they see fit.

Senator MUNDT. On what basis is this alloted to the States? Is it geographic?

Mr. CRAFTS. I am coming to that, Senator Mundt. I will discuss the formulas and indicate what we propose to allot to the States this year. Perhaps this is a thing I might discuss right now as a matter of fact. We used in our estimates this year the 60–40 basis. We used a total estimate into the fund of $125 million. And I will discuss a little later the basis for the estimate. These are the revenues that we think will come into the fund. Then divided on a 60–40 basis, we estimate about $75 million to the States and about $50 million to the Federal agencies that are currently eligible—the National Park Service, the Forest Service, and Bureau of Sport Fisheries and Wildlife. We are requesting something less than $1½ million for administration purposes.

EQUAL DIVISION OF REVENUES AMONG STATES

Now, the breakdown between States according to the law must follow a certain formula. That formula says that two-fifths or 40 percent must be distributed equally among all of the 50 States.

Senator MUNDT. Each State gets the same?

DISTRIBUTION TO STATES

Mr. CRAFTS. Yes, of two-fifths of the $75 million. The balance must be distributed in accordance with need, and the law is very open here. All it does is specify that in developing the formula for need the Secretary must consider population, out-of-State visitor use, Federal resources and programs, but it does not say how he must consider them. So this has been the subject of very careful study. We have met with all of the States in a 2-day meeting on this and we have met with the Federal agencies and with private groups. We have a proposed formula which has not been approved.

ADMINISTRATION OF VARIOUS ASPECTS DIVIDED

I want to make this clear, because the approval of this particular aspect of this act has been retained by the Secretary of the Interior and has not been delegated to me. The administration of all other aspects of the State phases of the law have been formally delegated to me.

The authority regarding the Federal aspects of the act runs to the President and a proposed executive order is pending now for the delegation of that authority, but it has not yet been issued.

So in giving you this formula, which I think you might want to put in the record, I can only say it is what we intend to recommend to the Secretary. We propose to distribute 40 percent equally. Here there is no choice. Then we propose 40 percent on the basis of population. Half of that on the basis of total population of the State and half on the basis of urban population of the State. Five percent will be distributed on the basis of out-of-State visitor use. Ten percent, which in effect makes it a subtraction really, will be distributed on the basis of Federal resources and programs, and a 5-percent contingency, which is held open for meeting unexpected needs, special situations, and this sort of thing. Therefore, the equal distribution of 40 percent, the

population aspect, and Federal resources and programs are really the most important in this formula.

CONTINGENCIES

We have taken the $75 million which may be available to the States and, of course, this "may"; is dependent on a number of factors. It is dependent on the amount of money that Congress appropriates, for one thing. It is dependent upon the States preparing and submitting acceptable State plans, which the law specifies. It is dependent upon the States meeting certain other requirements that are spelled out in the law. And also it is dependent on the States being able to match the Federal moneys on a 60–40 basis.

Now, the law says that the matching of Federal, State moneys may not exceed a 50–50 basis.

The President's budget has been developed this year on the premise that of each dollar, the Federal portion would be 40 cents and the State portion 60 cents.

PROSPECTIVE USER FEES

Senator MUNDT. I might ask, do you have the $125 million collected now from user fees or is that an estimate of what you will receive.

Mr. CRAFTS. No, sir, that is another factor. When I discuss the prospect of revenues, I will go into that. The way the appropriation language reads, the money would be available as it comes into the Treasury. We estimate that by the end of June, about $45 million will have been collected, and by the end of the next fiscal year, we estimate that there will be conservatively something over an additional $125 million.

Senator MUNDT. What you are asking the committee to do then is to do something to this effect: Up to $125 million that will become available for this purpose as collected?

Mr. CRAFTS. That is correct. The States have, of course, been greatly interested in the prospective availability of Federal funds. As I have explained to you, this availability is contingent on a number of factors. We do have here, using this formula, a breakdown of the amounts between the States which I am happy to offer the committee or to indicate with respect to any particular State if the committee wishes to have this.

Would you like to have this?

Senator MUNDT. Would you like to put the whole table in the record?

Mr. CRAFTS. I think it would be helpful, understanding that it is necessarily preliminary and subject to these various uncertainties that I have outlined.

Chairman HAYDEN. Very good. Thank you.

Senator MUNDT. It will give us a little guidance anyhow.

Mr. CRAFTS. Yes. Thank you.

(The information referred to follows:)

CURRENTLY PROPOSED APPORTIONMENTS TO STATES FROM LAND AND WATER CONSERVATION FUND

[Using formula shown to apportion the $74,136,000 requested for States in the fiscal year 1966 budget]

[In thousands of dollars]

States	Factors			Totals (90 percent)
	1. Equality (40 percent)	2. Population (total gross population, 20 percent) (total urban population, 20 percent) (40 percent)	3. Federal resources and programs (10 percent)	
Alabama	593	468	134	1,195
Alaska	593	29	40	662
Arizona	593	244	100	937
Arkansas	593	237	71	901
California	593	3,043	140	3,776
Colorado	593	306	99	998
Connecticut	593	447	97	1,137
Delaware	593	73	19	685
Florida	593	884	145	1,622
Georgia	593	587	82	1,262
Hawaii	593	111	30	734
Idaho	593	89	47	729
Illinois	593	1,736	377	2,706
Indiana	593	703	207	1,503
Iowa	593	377	158	1,128
Kansas	593	322	119	1,034
Kentucky	593	396	57	1,046
Louisiana	593	505	172	1,270
Maine	593	132	63	788
Maryland	593	531	123	1,247
Massachusetts	593	903	174	1,670
Michigan	593	1,278	298	2,169
Minnesota	593	513	203	1,309
Mississippi	593	273	66	932
Missouri	593	665	182	1,440
Montana	593	93	151	837
Nebraska	593	203	130	926
Nevada	593	61	34	688
New Hampshire	593	92	12	697
New Jersey	593	1,153	227	1,973
New Mexico	593	149	123	865
New York	593	3,052	654	4,299
North Carolina	593	582	134	1,309
North Dakota	593	75	98	766
Ohio	593	1,591	368	2,552
Oklahoma	593	360	100	1,053
Oregon	593	272	105	970
Pennsylvania	593	1,795	408	2,796
Rhode Island	593	155	30	778
South Carolina	593	308	115	1,016
South Dakota	593	86	110	789
Tennessee	593	508	109	1,210
Texas	593	1,646	535	2,774
Utah	593	157	63	813
Vermont	593	49	20	662
Virginia	593	597	111	1,301
Washington	593	454	95	1,142
West Virginia	593	218	68	879
Wisconsin	593	603	195	1,391
Wyoming	593	47	96	736
District of Columbia		151	26	177
Puerto Rico		334	88	422
Virgin Islands		4	2	6
Guam		8	3	11
American Samoa		3	1	4
Subtotals	29,650	29,658	7,414	66,722
Out-of-State visitor use (5 percent)[1]				3,707
Contingency (5 percent)				3,707
Total				74,136

[1] The amount to be apportioned to each State for out-of-State visitor use cannot be determined at this time, as reliable comparative data are not now available. The Bureau proposes to install a simple but fair reporting system. This will yield suitable data by Dec. 31, 1965, at which time the out-of-State visitor-use apportionment can be made.

NOTE.—Maximum State entitlement under the act would be 7 percent of $74,136,000 or $5,189,520.

LAND AND WATER CONSERVATION FUND

APPORTIONMENT FORMULA FOR STATES' PORTION

Public Law 88–578 (78 Stat. 897) requires that two-fifths of the States' portion of appropriation from the fund be distributed equally among the 50 States. The remaining three-fifths is to be apportioned to the States, District of Columbia, Puerto Rico, Virgin Islands, American Samoa, and Guam according to need. When determining needs, the act directs the Secretary to consider, "* * * among other things * * *," population, use by out-of-State visitors of a State's outdoor recreation resources and Federal resources and programs in a State.

Mindful of these guides, the Bureau is currently considering the use of the following factors and weights for determining a State's apportionment.

Factor:	*Weight (percent)*
1. Equality	40
2. Population	40
3. Out-of-State visitor use	5
4. Federal resources and programs	10
5. Contingency	5
Total	100

EXPLANATION OF FACTORS FOR APPORTIONMENT TO STATES OF LAND AND WATER CONSERVATION FUND APPROPRIATIONS

Factor	*Weight (percent)*
1. Equality: Prorated equally among 50 States, as required by the act	40
2. Population	40
(*a*) Total population	20

To be prorated on the basis of a State's total population in relation to total population of all 55 "States." Population data would be the latest available from the Bureau of the Census. Thus, for the fiscal year beginning July 1, 1965, the data would be for population estimates as of July 1, 1963.

(*b*) Urban population	20

To be prorated on the basis of a State's urban population in relation to urban population for all 55 "States." The Bureau of the Census definition of "urban" would apply. To obtain latest estimated urban populations, the percentages of urban to total populations maintaining as of the latest decimal census would be multiplied by latest yearly total population estimates. Thus, a State's estimated urban population would be determined, for fiscal year 1966, by multiplying that State's percentage current for the 1960 census times its total population estimate as of July 1, 1963.

3. Out-of-State visitor use [1]	5

To be prorated on the basis of out-of-State visitor use of State and non-Federal publicly administered areas and facilities in relation to total out-of-State visitor use in all 55 "States." The data would be reported by States according to guidelines for counting and reporting established by the Bureau.

4. Federal resources and programs	10
(*a*) Federal recreation "carrying capacity"	5

To be prorated on the basis of a State's deficiency below the average "carrying capacity" of Federal recreation areas in all 55 "States." The concept of "carrying capacity" and data would be those of the ORRRC, as updated from time to time.

(*b*) State area (less Federal recreation area)	5

To be prorated on the basis of area of a State in relation to total area of all 55 "States" which, in both cases, excludes federally administered areas under "specific recreation use" or under "multiple use" where outdoor recreation is one of the uses.

[1] To be instituted for the fiscal year 1966 appropriation. For the supplemental apportionment for fiscal year 1965, there would be no apportionment for out-of-State visitor use. The contingency percentage would be 10 percent for fiscal year 1965 only.

Factor	Weight (percent)
5. Contingency	5

A reserve to be held from proration. It would be used to care for unforeseen needs of States, like (*a*) unexpected availability of a choice recreation area, when immediate acquisition seems imperative; (*b*) unanticipated availability of a Federal tract (example: a reservoir project) for leasing and development by a State; (*c*) additional planning required for projects not previously covered; and (*d*) adjusting apportionments to the District of Columbia, Puerto Rico, and the Territories, and when the formula does not appear to account for special situations.

REVERSION OF UNUSED FEDERALLY APPROPRIATED FUNDS TO TREASURY

Mr. CRAFTS. I might say also that the States, in response to an inquiry from us and following the discussions that we have had with them, have formally, not informally, but either the Governors or the designated representatives of the Governors——

Senator MUNDT. Pardon me. May I ask a question? This is a revolving fund. Suppose you are unduly prudent in your guess and you collect $75 million and we should appropriate $125 million. What happens to the other $50 million?

Mr. CRAFTS. It simply stays in the fund and next year we would then ask for a larger amount. But if the Congress does not appropriate the money that goes into this fund during the year in which it goes in or during 2 succeeding years, it then goes out of the fund and into miscellaneous receipts of the Treasury and is no longer available.

Senator MUNDT. I just wanted to complete that part of the record.

AVAILABILITY OF STATE MATCHING FUNDS

Mr. CRAFTS. Yes, sir. Now the States have indicated an expectation that during this coming fiscal year of 1966 they will have about $300 million of State funds which is more than we would be able to match. It is about three times as much. If you match on a 40–60 basis, if Congress appropriates the amount we expect to go into the fund, and $75 million becomes available to the State, it would take about $100 million of State moneys, you see, to match the $75 million. So they have estimated that they will have substantially more than is prospectively available during this first year.

STATUS OF STATEWIDE PLANS

Also, I might say that 27 of the States, about half of the States, expect to have their statewide outdoor recreation plans submitted by the beginning of the fiscal year, by June 30, 1965. And the States are greatly interested in this. A number of them have been stimulated into a number of other activities. There are 15 States, and I can name them, who formally established what they call interagency focal points for this type of activity. Six States have established study committees or commissions, 7 States have established citizens advisory groups, 18 States have taken action by the State legislatures to authorize State participation in this program. In six States, the State legislatures have acted to authorize local government participation in the program. Twenty-three States have authorized sizable

increases in State financing largely in the form of floating State bond issues and six States have authorized grants to local governments. Only two States have, up to the moment, New Jersey and Wisconsin, actually submitted State plans. They did this prior to our completion of the planning requirements. We have sent specifications for State plans out now and we expect these plans to come in very shortly. As a matter of fact, I was told this morning the Ohio plan was going to be offered to us this afternoon. So this is in the works.

APPORTIONMENT FORMULA

Senator MUNDT. In your formula of three-fifths, you have a figure of 10 percent for Federal resources which you said was really substantial. It seems to me to round out the picture you also have to have X percentage or probably this same 10 percent to what the State itself has contributed. Because some States have done better than others with respect to establishing recreation areas and parks and so forth. Shouldn't you give credit for what the States have done for the general public? I am thinking of South Dakota.

Mr. CRAFTS. This, in effect, would penalize the State for the activities that the State has already carried out on its own.

Senator MUNDT. The 10 percent you said was a deduction.

Mr. CRAFTS. In effect it is a deduction.

Senator MUNDT. Here is a State in which more Federal resources have already been invested than another, so you deduct. That makes sense. Why shouldn't you increase a little bit what the State receives if it has built a series of State parks on its own? It is the same kind of recreational contribution to the general public. I am thinking in terms of my own State. I used to be on the game and fish department commission. We have now a game, fish, and park commission. We have a great State park out in the Black Hills living cheek to jowl with the national park. We would be penalized a little bit by what the national park has already done. But I think we should get some credit for this big State park. It is just as much of a contribution to the overall recreation facilities of the people as if the Federal Government had done it.

Mr. CRAFTS. I think you have a point there and we could do this under the contingency reserve we had there.

CONSIDERATION FOR STATES WHICH HAVE EXPENDED FUNDS FOR RECREATION

Senator MUNDT. I was thinking you could make the 10 percent either way. It seems only fair and equitable if you take away, as you have indicated. But I think of what happens to the State that has spent its funds and made park areas available to the public? There should be as much of an award for that as for what the Federal Government has done.

Mr. CRAFTS. I am glad to have your comment. This is, as I have said, a tentative formula. We would have to think about that. There are some States like California and New York and Pennsylvania and Michigan, and there may be some others, who are way out in front as far as expenditures of State money for recreation activities. Now if you give too much weight to this, you are going to throw a lot of this State money into the States which are already the best off.

And you have to be a little careful about this. But I would say it is a thought we would consider very carefully.

Senator MUNDT. But it should be there some place as a weighted factor.

FEDERAL ASPECTS—LAND AND WATER CONSERVATION FUND

Mr. CRAFTS. I am very glad to have your thought on that.

I might turn from the State aspects of the fund now, which I have discussed briefly, to the Federal aspects.

The law provides, as I said, a 40–60 distribution of appropriations, subject to some change between Federal agencies and the States. It specifies that insofar as the Federal dollars are concerned, they shall go for recreation acquisition purposes. Now I might underscore here there is a difference, which I have failed to mention, in that the moneys to the States may be used for planning, for acquisition, or for development by the States. They may also go to the local governments or to instrumentalities of the State if it is so recommended by the State plan. And many counties and municipalities are interested in this. We have told them that the thing they should do is to work this out within the State, with the State government, to determine the extent to which the State plan is to recommend this type of utilization of State moneys.

The Federal dollars may go only for the purposes of acquisition of areas for recreation purposes by the National Park Service, including inholding within the national park system, by the Forest Service, for inholdings in the national forest system with the requirement that 85 percent or what is acquired by the Forest Service must be east of the 100th meridian. There was a feeling that there was already a pretty heavy concentration in the West, and it was felt that the need in the East was the greatest. The Bureau of Sport Fisheries and Wildlife is concerned about the preservation of certain wildlife species and funds requested by that agency are to acquire lands to preserve certain species threatened with extinction.

ALLOCATION OF FUNDS TO INTERIOR SERVICES AND BUREAUS

The $49 million of the $125 million is proposed for division this year between these three agencies in the degree of $26 million to the National Park Service, about $20 million to the Forest Service, and about $3.1 million to the Bureau of Sport Fisheries and Wildlife.

PROGRAMS PROPOSED IN JUSTIFICATIONS

In our justification statement we have indicated how these moneys would be spent. For the Park Service we have indicated the specific areas and inholdings. For the Forest Service we have indicated the purposes of acquisitions and the expenditures by States. In the case of the Bureau of Sport Fisheries and Wildlife, which is a relatively small amount, we have indicated the specific areas and types of species threatened.

Senator MUNDT. In that later category, I understood it had to be for a certain species. Do you list the species?

Mr. CRAFTS. Yes.

Senator MUNDT. We would like to have that in the record.

Mr. CRAFTS. Yes. Mr. Parker, the Assistant Director of the Bureau of Sport Fisheries and Wildlife is here, but the particular species are the whooping crane, the Florida sandhill crane, the New Mexican duck, and Hawaiian nene.

Senator MUNDT. None of the migratory waterfowl that are getting into dangerously low supply would be included? You have seasons on some ducks every 2 years or something like that; don't you?

Mr. PARKER. None of the species that are included here we would consider are available for hunting outside of the New Mexico duck and it is a resident species that occurs in Arizona and New Mexico and extends down into old Mexico. The more common species, the canvasback duck and others, which are in short supply, are not considered in this at all.

Senator MUNDT. All right, sir.

Mr. CRAFTS. All of this information is in the various justification statements which will, I believe, appear in the record.

I have a table which lists by States and agencies the proposed acquisitions in terms of dollars. I would be glad to submit that for the record, if you would like to have it.

Now, as to the specific details with respect to National Park Service, the Forest Service, and Bureau of Sport Fisheries and Wildlife, I think it is better to perhaps see what questions you have.

(The information referred to follows:)

LAND AND WATER CONSERVATION FUND APPROPRIATION

Federal land acquisition program, fiscal year 1966 estimates by States

States	Forest Service	National Park Service	Bureau of Sport Fisheries and Wildlife	Total
Alaska		$2,000		$2,000
Alabama	$115,000			115,000
Arizona	282,750	603,500	$216,000	1,102,250
Arkansas	258,400	9,000		267,400
California	817,100	1,599,385		2,416,485
Colorado	293,000	1,217,650		1,510,650
Florida	242,650	1,125,500	1,000,000	2,368,150
Georgia	1,150,000			1,150,000
Hawaii			150,000	150,000
Idaho	754,000	2,000		756,000
Illinois	620,825			620,825
Indiana	271,600			271,600
Iowa		1,115		1,115
Kansas		329,000		329,000
Kentucky	421,250			421,250
Louisiana	12,650			12,650
Maryland		2,006,500		2,006,500
Massachusetts		4,950,000		4,950,000
Michigan	7,182,500			7,182,500
Minnesota	98,575	21,000		119,575
Mississippi	89,600	25,000		114,600
Missouri	963,300	4,000,000		4,963,300
Montana	120,750	905,000		1,025,750
Nebraska		95,000		95,000
Nevada	11,750			11,750
New Jersey		200,000		200,000
New Mexico	533,750	23,000	648,000	1,204,750
New York		4,000,000		4,000,000
North Carolina	300,750	315,000		615,750
North Dakota		69,000		69,000
Ohio	446,200			446,200
Oklahoma	1,174,350			1,174,350
Oregon	204,750			204,750
Pennsylvania	1,150,000	320,000		1,470,000
South Carolina	154,100			154,100
South Dakota		86,000		86,000
Tennessee	172,500	150,000		322,500
Texas	46,000		1,100,000	1,146,000
Utah	279,500	680,350		959,850
Vermont	164,100			164,100
Virginia	1,325,000	182,500		1,507,500
Washington	65,000	1,101,500		1,166,500
West Virginia	362,900			362,900
Wisconsin	168,900			168,900
Wyoming	25,500	1,012,000		1,037,500
State total	20,279,000	25,031,000	3,114,000	48,424,000
Virgin Islands		1,000,000		1,000,000
Grand total	20,279,000	26,031,000	3,114,000	49,424,000

ESTIMATED REVENUES

Mr. CRAFTS. I would just add one further thing with respect to revenues. There was an estimate of revenues for the first 10 years of the program included in the report of the House committee on the bill. We have broken that down by months, for 1965 and 1966 and by sources of revenues which I can supply you. We have that estimate not only for the first 10 years but for the full 25 years of the program. I can likewise make that available to you.

Some adjustment in these estimated revenues are needed due to the probability that the income from the sale of surplus property will be somewhat higher than previously estimated and due also to the expectation that the income from admission fees may be somewhat higher.

But I think for your general needs, the table which appeared in the printed report of the House committee, and I believe was also printed in the Senate committee report, is adequate.

(The information referred to follows:)

ESTIMATED REVENUE TO THE LAND AND WATER CONSERVATION FUND BY MONTHS, JANUARY 1965 THROUGH JUNE 1966

[In thousands]

	1965					
	January	February	March	April	May	June
$5 auto sticker				$423.2	$412.4	$655.6
Other entry fees			$332.7	634.8	618.6	983.4
User fees			776.3	1,481.2	1,443.4	2,294.6
Motorboat fuel tax	$225.0	$258.0	378.0	498.0	642.0	999.0
Sale of surplus property	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0
Total	5,225.0	5,258.0	6,487.0	8,037.2	8,116.4	9,932.6
Cumulative total	5,225.0	10,483.0	16,970.0	25,007.2	33,123.6	43,056.2

	July	August	September	October	November	December
$5 auto sticker	$4,575.0	$4,525.0	$2,200.0	$1,825.0	$1,200.0	$800.0
Other entry fees	1,464.0	1,448.0	704.0	584.0	384.0	256.0
User fees	1,464.0	1,448.0	704.0	584.0	384.0	256.0
Motorboat fuel tax	4,392.0	4,344.0	2,112.0	1,752.0	1,152.0	768.0
Sale of surplus property	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0
Total	16,895.0	16,765.0	10,720.0	9,745.0	8,120.0	7,080.0
Cumulative total	59,951.2	76,716.2	87,436.2	97,181.2	105,301.2	112,381.2

	1966					
	January	February	March	April	May	June
$5 auto sticker	$750.0	$850.0	$1,250.0	$1,625.0	$2,125.0	$3,275.0
Other entry fees	240.0	272.0	400.0	520.0	680.0	1,048.0
User fees	240.0	272.0	400.0	520.0	680.0	1,048.0
Motorboat fuel tax	720.0	816.0	1,200.0	1,560.0	2,040.0	3,144.0
Sale of surplus property	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0	5,000.0
Total	6,950.0	7,210.0	8,250.0	9,225.0	10,525.0	13,515.0
Cumulative total	119,331.2	126,541.2	134,791.2	144,016.2	154,541.2	168,056.2

CUMULATIVE TOTAL

Fiscal year 1965:	
January	5,225.0
February	10,483.0
March	16,970.0
April	25,007.2
May	33,123.6
June	43,056.2
Fiscal year 1966:	
July	16,895.0
August	33,660.0
September	44,380.0
Fiscal year 1966—Continued	
October	54,125.0
November	62,245.0
December	69,325.0
January	76,275.0
February	83,485.0
March	91,735.0
April	100,960.0
May	111,485.0
June	125,000.0

ESTIMATED MAXIMUM ANNUAL REVENUES AND OBLIGATIONS UNDER THE LAND AND WATER CONSERVATION FUND BILL, H.R. 3846 AS REPORTED TO THE HOUSE, IF ENACTED BY JULY 1, 1964

[In millions of dollars]

Fiscal year	Estimated total revenues	Repayment of advance appropriations	Estimated total obligations for State and Federal purposes	Estimated total obligations for Federal purposes [1]
1965	[2] 106		40	16.0
1966	125		125	50.0
1967	[3] 197		200	79.8
1968	[3] 196		202	79.5
1969	[3] 200		206	81.0
1970	[3] 206		211	84.4
1971	[3] 211		211	84.4
1972	[3] 218		218	87.2
1973	[3] [4] 207		223	89.2
1974	[3] [4] 194		224	89.6
Total, 1965-74	1,860		1,860	741.1
1975	134	[5] 67	67	26.8
1976	134	67	67	26.8
1977	134	67	67	26.8
1978	134	67	67	26.8
1979	134	67	67	26.8
1980	134	67	67	26.8
1981	134	67	67	26.8
1982	134	11	123	49.2
1983	134		134	53.6
1984	134		134	53.6
1985	134		134	53.6
1986	134		134	53.6
1987	134		134	53.6
1988	134		134	53.6
1989	134		134	53.6
Total, 1975-89	2,010	480	1,530	612.0
Total, 1965-89	3,870	480	3,390	1,353.1

[1] Normally 40 percent. During the first 5 years, the President could vary this percentage plus or minus 15 percent, in the absence of a provision to the contrary in the act making an appropriation from the fund.
[2] Assuming that an annual auto sticker would be available by Jan. 1, 1965, other entrance and user fees begin on July 1, 1964, receipts from sale of surplus Federal property would be transferred to the fund beginning on July 1, 1964, and revenue from motorboat fuel tax would accrue to the fund beginning on Jan. 1, 1964.
[3] Includes $60,000,000 in advance appropriations.
[4] The source of revenue from motorboat fuel tax expires on Oct. 1, 1972.
[5] Repayment of advance appropriations begins at the rate of 50 percent of annual receipts to the fund.

SURPLUS PROPERTY

Senator MUNDT. When you use the term "surplus property" are you talking about land where you have decided you are not going to have a recreational area and you are returning to the tax roll, or is that personal property, or what are you talking about?

Mr. CRAFTS. This is Federal real estate and related personal property that is formally declared surplus by the General Services Administration.

Now, the act makes it very clear that the procedures and the methods in the laws which presently govern the disposal of surplus Federal property are in no way affected. The only thing this act does is that it puts into the fund the income from the Federal property that would be sold anyway instead of depositing such income into miscellaneous receipts.

Now, it does not affect the amount of surplus property that may go to hospitals or schools and this sort of thing. Most of it is surplus military land the way it turns out. Our estimate when this bill was going through the Congress last year, based on the history of the preceding 10 years, was that this would average about $50 million a year. We have since received a revised estimate from the General Services Administration which increases this estimate somewhat.

Senator MUNDT. May I take a case in point? I am on the committee that reviewed the surplus property law, the McClellan committee. For example, Ellis Island is now surplus. We have had a lot of hearings. We have been offered a million dollars or $2 million from one group or the other. Suppose we authorized the sale. Then that money would go into your fund?

Mr. CRAFTS. Yes, sir.

Senator MUNDT. That is true of all surplus land sold in this country?

Mr. CRAFTS. That is correct.

OPERATION AND MAINTENANCE

Chairman HAYDEN. I don't believe there is any provision in the act for operation and maintenance of the recreation areas which are to be purchased from the proceeds of this fund. Has any consideration been given to providing for operation and maintenance of these areas from the fund itself?

Mr. CRAFTS. In connection with the moneys that go to the States, there is provision for development, but not for operation and maintenance. There also is no provision in the fund for operation and maintenance of the areas that are federally acquired.

We will be glad to place in the record the States' estimates that we have for planning, acquisition, and development. We do not have estimates in connection with operation and maintenance.

Chairman HAYDEN. All right.

(The information referred to follows:)

STATE AND LOCAL MATCHING FUNDS ESTIMATED TO BE AVAILABLE IN FISCAL YEAR 1966

States	Planning	Acquisition and development	Total
Alabama			
Alaska	$135,000	$610,000	$745,000
Arizona	25,000	1,400,000	1,425,000
Arkansas	250,000	4,500,000	4,750,000
California	1,732,851	86,199,100	87,931,951
Colorado	171,925	2,325,700	2,497,625
Connecticut	25,000	27,615,550	27,640,550
Delaware	15,000	1,504,750	1,519,750
Florida	50,000	2,200,000	2,250,000
Georgia	45,000		45,000
Hawaii	60,000	1,250,000	1,310,000
Idaho	38,000	729,000	767,000
Illinois	35,000	26,000,000	26,035,000
Indiana	25,000	3,528,650	3,553,650
Iowa	275,000	4,225,000	4,500,000
Kansas	44,500	757,800	802,300
Kentucky	50,000	5,500,000	5,550,000
Louisiana	133,000	1,000,000	1,133,000
Maine	5,500	777,100	782,600
Maryland		13,000,000	13,000,000
Massachusetts		2,000,000	2,000,000
Michigan	94,955	9,220,392	9,315,347
Minnesota	525,000	7,524,000	8,049,000
Mississippi	25,000	125,000	150,000
Missouri		4,000,000	4,000,000
Montana	20,000	165,000	185,000
Nebraska	70,568	2,240,773	2,311,341
Nevada	100,000	5,300,000	5,400,000
New Hampshire		1,480,000	1,480,000
New Jersey	170,000	25,200,000	25,370,000
New Mexico	13,500	1,720,500	1,734,000
New York	100,000	5,090,000	5,190,000
North Carolina	150,000	2,350,000	2,500,000
North Dakota	25,000	875,000	900,000
Ohio	500,000	20,000,000	20,500,000
Oklahoma	15,000	1,500,000	1,515,000
Oregon	90,000	2,682,000	2,772,000
Pennsylvania	170,000	2,730,000	2,900,000
Rhode Island	50,000	6,450,000	6,500,000
South Carolina			
South Dakota	5,000	250,000	255,000
Tennessee	300,000	1,700,000	2,000,000
Texas	43,420	3,021,634	3,065,054
Utah	110,000	1,090,000	1,200,000
Vermont		1,200,000	1,200,000
Virginia	24,000	1,200,000	1,224,000
Washington	311,659	1,069,849	1,381,508
West Virginia	510,000	1,510,000	2,020,000
Wisconsin	200,000	6,000,000	6,200,000
Wyoming	100,000	400,000	500,000
Subtotal, States	6,838,878	301,216,798	308,055,676
District of Columbia and territories:			
District of Columbia		1,585,000	1,585,000
Puerto Rico			
Virgin Islands			
Guam			
American Samoa			
Subtotal, District of Columbia and territories		1,585,000	1,585,000
Total	6,838,878	302,801,798	309,640,676

NOTE.—Estimates were not received from those States or territories listed but for which no funds are shown.

RECREATION AREAS AND FACILITIES

Chairman HAYDEN. A part of the purpose of the Land and Water Conservation Fund Act is to provide for development of outdoor recreation areas and facilities. Does the development of the facilities portion of this statement include construction such as buildings and roads?

Mr. CRAFTS. They do, yes, sir, with respect to the State aspects, if provided for in the statewide outdoor recreation plan and in the project proposal when individual projects are submitted.

States could include this, such items could not be included with respect to the Federal agencies use of the fund.

AVAILABILITY OF FUND FOR OBLIGATION

Chairman HAYDEN. In your highlight statement at page 3, you say that the fiscal year 1966 appropriation language is drafted so that money accruing to the fund in fiscal year 1966 will be available for obligation as it accrues. Does this indicate that language in subsequent years will not be written in this manner?

Mr. RICE. Mr. Chairman, I think it may be necessary during the first several years of this program that we will have to have similar language to provide that the moneys are available in the fund as they accrue. We hope to get full funding of this program to the greatest extent possible.

ASSISTANCE TO STATES

Chairman HAYDEN. With regard to your estimate of $74 million for assistance to States, how did you arrive at this figure?

Mr. CRAFTS. This was an automatic figure. It was 60 percent of the $125 million which we estimate will go into the fund in fiscal year 1966.

Chairman HAYDEN. Do you have approved projects from States adding up to this total? I am not referring to the estimates which you secured from the several States as indicative of what each of the States thinks it will need.

Mr. CRAFTS. No, sir, we do not have approved projects at the present time. We are still waiting for the States to submit their plans, and these plans, as I say, are just coming in. We expect to have them from half the States by the beginning of the fiscal year.

APPROVAL OF STATE RECREATION PLANS

Chairman HAYDEN. How many States have prepared and submitted a comprehensive statewide outdoor recreation plan, which you have approved? Would you please list them for the record?

Mr. CRAFTS. None at the present time, sir, but as I say, we expect to have about 27 by the end of June.

Chairman HAYDEN. How soon do you anticipate that every State will have prepared a plan which you can approve?

Mr. CRAFTS. The first one is coming in today. We expect about half of them by the beginning of next fiscal year.

STATE AND PRIVATE AREAS ENCOMPASSED IN AUTHORIZED NATIONAL PARK SYSTEM

Chairman HAYDEN. On page 12 of your justification you state that 715,000 acres of privately or State-owned land were within authorized areas of the national park system as of October 15, 1964. Would you please supply for the record a list of these areas and the acres of inholdings within each one of them?

Mr. CRAFTS. May I ask Mr. Montgomery?

Mr. MONTGOMERY. Mr. Chairman, I am Clarence P. Montgomery, Assistant Director, National Parks Service. With me is Mr. Donald Lee, Chief of Lands, who will answer most of your questions. We will be pleased to supply the requested information for the record.

(The information referred to appears in the table below

ESTIMATED COST OF TOTAL ACQUISITION

Chairman HAYDEN. Also, would you please supply for the record information as to the total amount which is estimated will be required to acquire all of the inholdings within each of the authorized park areas?

Mr. MONTGOMERY. We have an estimate of $125 million for acquisition of inholdings in authorized areas other than the new projects that are listed here, such as Minute Man, Cape Cod, Fire Island, and so forth. We will be pleased to place the specific information requested in the record.

(The information referred to follows:)

STATEMENT SHOWING INHOLDINGS THAT WILL REMAIN TO BE ACQUIRED IN NATIONAL PARK SERVICE AREAS AND ESTIMATED VALUES AFTER CURRENTLY AVAILABLE FUNDS HAVE BEEN EXPENDED

Area	Estimated total additional acres to be acquired	Estimated value
Acadia National Park	9,941.77	[1] $78,740
Allegheny Portage Railroad National Historic Site	950.00	425,000
Antietam National Battlefield Site	1,200.00	337,600
Appomattox Court House National Historical Park	34.67	67,800
Badlands National Monument	9,493.52	312,750
Big Bend National Park	1,682.80	18,738
Big Hole National Battlefield	306.00	[2] 60,000
Black Canyon of the Gunnison National Monument	539.15	28,080
Blue Ridge Parkway	680.52	73,500
Canyonlands National Park	42,129.00	[3]
Cape Cod National Seashore	28,160.00	[2] 27,450,000
Cape Hatteras National Seashore	3,794.77	[2] 2,000,000
Capitol Reef National Monument	2,546.94	235,000
Capulin Mountain National Monument	95.00	[2] 3,800
Carlsbad Caverns National Park	3,361.12	84,280
Castillo de San Marcos National Monument	1.97	75,000
Catoctin Mountain Park	3.30	6,500
Chaco Canyon National Monument	520.05	15,000
Chalmette National Historical Park	52.75	417,500
Chiricahua National Monument	165.00	209,250
City of Refuge National Historical Park	1.02	[1] 1,000
Colonial National Historical Park	2,407.20	[2] 2,426,680
Colorado National Monument	85.83	4,600
Craters of the Moon National Monument	179.78	50,000
Cumberland Gap National Historical Park	2.23	12,000
Death Valley National Monument	26,053.66	4,124,993
DeSoto National Memorial	5.22	2,000
Devils Tower National Monument	80.00	40,000
Dinosaur National Monument	11,502.33	465,755
Edison National Historic Site	2.50	200,000
Effigy Mounds National Monument	93.70	[2] 10,000
El Morro National Monument	318.80	40,500
Everglades National Park	94,024.00	[2] 4,385,550
Fire Island National Seashore	18,590.00	14,900,000
Fort Bowie National Historic Site	900.00	2,147,000
Fort Donelson National Military Park	403.76	[2] 105,000
Fort Frederica National Monument	40.03	[2] 50,000
Fort Laramie National Historic Site	239.94	67,100
Fort Larned National Historic Site	750.00	454,000
Fort Necessity National Battlefield	157.15	[2] 320,000
Fort Pulaski National Monument	152.50	1,500
Fort Raleigh National Historic Site	123.94	177,000
Fort Smith National Historic Site	1.65	[2] 257,800
Fort Vancouver National Historic Site	0.79	1,315
Fredericksburg and Spotsylvania National Military Park	1,145.02	745,500
George Washington Memorial Parkway	1,810.83	4,490,000

See footnotes at end of table, p. 312.

STATEMENT SHOWING INHOLDINGS THAT WILL REMAIN TO BE ACQUIRED IN NATIONAL PARK SERVICE AREAS AND ESTIMATED VALUES AFTER CURRENTLY AVAILABLE FUNDS HAVE BEEN EXPENDED—Continued

Area	Estimated total additional acres to be acquired	Estimated value
Gettysburg National Cemetery	5.00	$27,000
Gettysburg National Military Park	517.24	1,789,000
Glacier Bay National Monument	346.56	31,540
Glacier National Park	2,905.37	2,930,100
Glen Canyon National Recreation Area	22,906.32	(3)
Grand Canyon National Monument	5,240.00	151,100
Grand Canyon National Park	371.65	60,000
Grand Portage National Monument	455.00	36,000
Grand Teton National Park	7,749.01	22,743,149
Great Sand Dunes National Monument	1,760.44	84,500
Great Smoky Mountains National Park	4,166.50	484,852
Guilford Courthouse National Military Park	73.47	505,800
Hot Springs National Park	15.29	9,000
Independence National Historical Park	6.01	[2] 2,965,000
John Muir National Historic Site	9.00	169,000
Johnstown Flood National Memorial	55.00	20,002
Joshua Tree National Monument	51,745.53	323,750
Kennesaw Mountain National Battlefield Park	800.00	[2] 216,120
Kings Canyon National Park	944.52	1,423,252
Lake Mead National Recreational Area	33,700.00	[2] 2,000,000
Lassen Volcanic National Park	806.70	599,440
Lincoln Boyhood National Memorial	82.51	[2] 81,450
Mammoth Cave National Park	2.99	35,000
Manassas National Battlefield Park	839.56	242,580
Mesa Verde National Park	796.89	124,000
Minute Man National Historical Park	357.38	[2] 2,500,000
Montezuma Castle National Monument	59.00	35,000
Moores Creek National Military Park	7.45	86,226
Mount McKinley National Park	133.96	2,500
Mount Rainier National Park	210.91	21,000
Mount Rushmore National Memorial	32.50	32,500
Muir Woods National Monument	19.09	19,000
Natchez Trace Parkway	14,628.02	1,258,000
Natural Bridges National Monument	473.84	1,425
Olympic National Park	8,041.31	3,952,000
Organ Pipe Cactus National Monument	2,183.24	550,000
Ozark National Scenic Riverways	86,924.00	7,000,000
Padre Island National Seashore	33,373.00	[2] 2,500,000
Pea Ridge National Military Park	65.05	[1] 10,000
Petersburg National Battlefield	1,227.17	[2] 200,000
Pinnacles National Monument	880.00	22,000
Pipestone National Monument	6.65	11,000
Piscataway Park	903.33	[2] 3,152,893
Point Reyes National Seashore	33,079.00	[2] 30,500,000
Prince William Forest Park	1,351.76	[2] 236,900
Richmond National Battlefield Park	9.15	7,775
Rocky Mountain National Park	2,365.95	2,181,130
Saguaro National Monument	2,456.40	359,183
Salem Maritime National Historic Site	2.12	[2] 19,000
Saratoga National Historical Park	3,067.65	[1] 31,250
Scotts Bluff National Monument	896.00	509,450
Sequoia National Park	1,449.87	325,050
Shenandoah National Park	18,657.35	[1] 3,500,000
Shiloh National Military Park	6.49	52,350
Theodore Roosevelt National Memorial Park	1,457.66	125,000
Tupelo National Battlefield	.50	1,000
Vicksburg National Military Park	478.78	545,600
Virgin Islands National Park	4,132.92	[2] 6,112,900
Walnut Canyon National Monument	237.84	8,500
White Sands National Monument	6,288.30	56,934
Whitman Mission National Historic Site	2.50	5,000
Wright Brothers National Memorial	101.37	75,000
Yellowstone National Park	8,566.06	149,446
Yosemite National Park	2,816.81	5,170,685
Zion National Park	12,961.50	1,050,000
Total	650,942.65	174,805,163

[1] To be acquired by donation.
[2] The amount represents the current estimated values, which are not predicated upon appraisal data of the remaining acres to be acquired. An increase in the appropriation authorization will be required before appropriation of the full amount shown can be requested.
[3] Exchange.

NOTE.—As indicated in the title of this statement the foregoing reflects the situation estimated to obtain after all land acquisition funds currently available to the National Park Service have been expended.

SPECIAL AREAS

Senator MUNDT. Mr. Chairman. May I inquire why there is a difference in your statement, Mr. Crafts, and the statement in your justification as to these five areas which have already been selected?

They are identical except for the last item. You say you are going to do something at Assateague Island, and the justification book says you are going to do something instead at Raystown Reservoir in Pennsylvania.

Mr. CRAFTS. Those are different things.

Senator MUNDT. Your list is identical with the justification except in that one item.

Mr. CRAFTS. I realize that. I changed that. The reason I changed that is because I think that the prospects of action are sooner with respect to Assateague Island than they are with Raystown Reservoir.

LEGISLATION REQUIREMENT

Of course, Assateague Island is not authorized as yet. We have made a study of it. Legislation is pending, and hearings are scheduled for about the 1st of March, I believe.

Senator MUNDT. Does each of these require special legislation on each of these five, North Cascades, Sawtooth, Allagash River, Pictured Rocks, and Assateague Island?

Mr. CRAFTS. North Cascades is a joint study by the Forest Service and the Park Service, with respect to the best utilization and administration of the present Federal lands in the North Cascades.

One of the issues there is whether there should be some adjustment in the boundaries of Mount Rainier National Park, whether there should be an additional national park created or whether a national recreation area should be created. If such recommendations are made, legislation will be needed.

Sawtooth Mountains, the area under study is largely wilderness or primitive area at the present time. Here again the issue is whether Forest Service administration or National Park administration is more desirable. There may be no legislation proposed, or there could be legislation proposed, depending upon the findings.

Legislation is necessary if the Federal Government is to enter the picture with respect to the Allagash. This is uncertain, because the State legislature either has just had submitted to it or is about to have submitted to it pending State legislation on this area.

The Apostle Islands likewise may require legislation.

These are areas under study.

Senator MUNDT. How are the areas suggested?

Mr. CRAFTS. They come from a variety of sources. In some cases they are suggested by States, in some cases by Members of Congress, in some cases we are commissioned by the Secretary of the Department of Interior or Agriculture to undertake this.

Senator MUNDT. Assateague probably came from the Secretary. I think he is pretty much interested in that.

Mr. CRAFTS. The Secretary is very much interested in that. But there are a lot of people, other than Federal employees, who are interested in Assateague, as well. A lot of people are against it, too.

Senator MUNDT. We get a lot of mail on it.

Mr. CRAFTS. I am sure you do. The State had some problems making up its mind, but for the past year at least the State government and the State authorities have favored the proposal.

But you do get a lot of mail on it. I know that.

INHOLDINGS IN NATIONAL PARKS

Chairman Hayden. Is there a proposed schedule for acquiring inholdings in each of the national park areas?

Mr. LEE. We have projected our fund requirements after 1966 for acquiring all of the inholdings, exclusive of lands in the recently authorized areas listed specifically in the justification, at $20 million a year until they are all acquired. We do not have a schedule showing when we propose to acquire specific lands in each individual area. It would be most difficult to schedule proposed acquisitions on this basis in view of the many factors involved which change as time goes on, such as an unforeseen plan of an owner to subdivide or place developments on the lands which would make necessary acquisition by the Government at an earlier date than might be presently contemplated.

PROPOSED 1966 SUPPLEMENTAL APPROPRIATION

Chairman HAYDEN. In addition to the $26,031,000 requested for Park Service acquisitions in this bill, there is pending a proposed supplemental estimate in the amount of $5,180,000. Is it your view that the total $31,211,000 will be obligated during fiscal year 1966?

LIMITATION ON EXTENSIONS OF NATIONAL FORESTS BOUNDARIES

Mr. LEE. Yes, Senator. We believe that all of that sum can be used and obligated during this coming year for the various projects and the purposes listed.

Chairman HAYDEN. With regard to funds requested for additions to the national forest system, I note that there is statutory authority to procure lands outside of existing boundaries of the national forests, but that such acquisition must not exceed 500 acres per forest.

Is this a limitation on the size of a tract, or of the total amount which may be added through the Land and Water Conservation Act to any one forest?

Mr. CRAFTS. As I understand it, and the Forest Service can change me on this if I am wrong, this is a limitation with respect to a particular size of a particular tract that may be financed under the land and water conservation fund to a particular national forest.

Mr. NELSON. I do not believe that is quite right. The 500 acres is the amount we can buy outside of a boundary of any existing national forest.

The reason for it is, sometimes we have a tract of land in connection with a recreation area, a small part of which might be outside of the boundary.

Other than that, all of our acquisition has to be within the boundaries of a national forest.

STATES EXCLUDED BY STATUTORY LIMITATIONS

Chairman HAYDEN. I note that in the summary by States of funds which have been requested for Forest Service recreation land, 16 States are not included. Does this indicate that these States are not interested in acquisitions for forest lands?

Mr. CRAFTS. I think Mr. Nelson had better answer that.

Mr. NELSON. No. The law limits our acquisition in two ways. First, they have to be within the boundaries, as we said. The other limitation is that not over 15 percent of that land may be acquired west of the 100th meridian.

We have many States with no national forests within the States, so we have that to consider.

I think in the East we have proposed projects for all of the national forests within the East except the White Mountains, where our land-ownership is pretty solid.

BUDGET REQUEST CHALLENGED AS EXCESSIVE

Chairman HAYDEN. Isn't a sum in excess of $20 million a rather large budget for starting a new program of this type?

Mr. CRAFTS. Well, we did not think so, Senator Hayden. If you take the eastern national forests, and this is one reason as I understand it that the Congress imposed this limitation, that 85 percent of the Forest Service acquisitions should be in the East. If you look at the maps of western national forests, and look at the maps of the eastern national forests, you will see that there is a great difference in the degree of national forest ownership. In the West in many places the ownership, because these forests originated from the public domain, is solid national forest, except where you have the railroad land grant alternate pattern type of thing.

In the East, the national forests were acquired mainly by purchase under the Weeks law, and I think the ownership of national forest land within national forest boundaries runs something in the neighborhood of 50 percent, maybe less than that.

But there is a very substantial acreage of important recreation land that is inside national forest boundaries that is fairly close to centers of population in the Eastern United States, and this is why we think this amount really is justified.

STUDY OF PRESERVATION OF CALIFORNIA REDWOODS

Senator MUNDT. Mr. Chairman, could I ask a question about the redwoods?

Have you anything in here to preserve the redwoods?

Mr. CRAFTS. There is nothing proposed in this budget with respect to the redwoods. Insofar as the redwoods are concerned, there is a directive, a mandate, instructions from the President to the Secretary of the Interior, to make a recommendation to the President with respect to whether a redwood national park should be established.

This study is underway now at the current time by the National Park Service with the cooperation of our Bureau. It has not been completed. The positions have not been arrived at.

I know we have no funds in for the National Park Service, and there is nothing for the Forest Service, either.

MICHIGAN SYLVANIA TRACT

Chairman HAYDEN. The committee notes the large amount involved in the purchase of the Sylvania tract in the Upper Peninsula of Michigan. How do you justify this purchase?

Mr. CRAFTS. I would refer that one to Mr. Nelson, if I may.

Mr. NELSON. Senator Hayden, the Sylvania tract, in the Upper Peninsula, is one of the outstanding opportunities for a purchase of land for use of the general public recreation. We have, and I would like to leave with the committee this morning, a report which was prepared on the Sylvania property. It is all within the Ottawa National Forest. It includes about 18,000 acres of land and water. There are some 32 named lakes within this tract of land, plus other smaller ones.

We consider Sylvania extremely unique for recreation development.

To give you a little better picture, we have brought over one or two charts, here. The first one is an aerial photograph of the land. The dark areas are the lakes. This area shown in green has already been donated to the Forest Service. The other part is what we would propose to acquire.

This is our largest single purchase in a single ownership tract in any of the programs, I believe.

There is a color picture of it that indicates the type of land it is. It is colorful northern hardwood land. It is within 500 miles of a lot of the major population centers of the Middle West.

The Sylvania tract has been closed to the public for over 50 years, as indicated by "No Trespassing" signs. There is excellent fishing and other recreation opportunities. We have in the report a plan for management of this tract as a part of the Ottawa National Forest.

This map here is only to illustrate the type of planning that went into the recreation development of that tract.

Chairman HAYDEN. How much money is this going to cost?

Mr. NELSON. I will supply that to the committee. The appraisal has been made. Sylvania is available because Mr. Fisher recently died, that is, one of the Fishers of Fisher Body Co., and the estate has to sell it.

He owned about 75 percent of this land, and that is one of the reasons it is available at this time, where it has not been available, as I say, for some 50 years.

It would be developed with recreation as the prime use. There would be some timber development. There would be research and education opportunities. There are some wildlife areas. There is some of the area that would be set aside as a natural area.

Also in the educational field there is an opportunity for a regional study area for outdoor education in the conservation field.

LAND ACQUISITIONS—SPORT FISHERIES AND WILDLIFE

Chairman HAYDEN. Thank you.

Is the land acquisition program for the Bureau of Sport Fisheries and Wildlife primarily an addition to the assistance being provided under the Migratory Bird Conservation Act?

Mr. PARKER. Mr. Chairman, currently the only authorization this Bureau has is the Migratory Conservation Act. This would be our authorization, yes.

Chairman HAYDEN. I note on page 23 in your discussion of the 4,000 acres desired for the New Mexican duck that "a guaranteed water supply will be required." Where is it proposed that this water supply be obtained, or is it available now?

Mr. PARKER. Mr. Chairman, they would be all small marshes in existence now, or where we could buy water rights to reflood them.

This is for a duck that requires a marsh habitat, and these are areas that are scattered along the Rio Grande River Valley and the Gila River Valley.

Chairman HAYDEN. If it is not now available, will the land acquisition be of any value until water is made available?

Mr. PARKER. No; in the case of the New Mexican duck. We would have to have water, or there would be no point in buying the land.

ADMINISTRATIVE EXPENSES

Chairman HAYDEN. With respect to your proposed appropriation of $1,440,000 for administrative expenses, will you please indicate the uses to which this sum will be put?

Mr. CRAFTS. The primary things that we would do with this money is to review the comprehensive State plans that are a prerequisite to the States obtaining money for acquisition and development.

We expect that we would receive somewhere in the neighborhood of perhaps 5,000 specific project proposals annually within the framework of the State plans. Each of them needs to be reviewed and acted upon.

And then under the Federal aspect there will be the responsibility of working with the other Federal agencies involved in developing their land acquisition proposals for the following fiscal year.

But it will be primarily action in connection with the State activities.

AREA REDEVELOPMENT ADMINISTRATION PROJECTS

Senator MUNDT. Are these the kind of projects which you list on page 15 of your justification, recommendations to the Area Redevelopment Administration? You have 12 of them listed there.

Mr. CRAFTS. No, sir. Those are a different kind of project, Senator Mundt.

Senator MUNDT. What kind are they?

Mr. CRAFTS. Those are reimbursable projects that we have undertaken during the past year for the Area Redevelopment Administration.

Senator MUNDT. Reimbursable from Area Redevelopment Administration?

Mr. CRAFTS. Yes; in which we make what you might call economic analysis reports. These reports are frequently published by Area Redevelopment Administration, and are used by the local areas to promote tourism.

Senator MUNDT. Do you have any information about those? I note one of them is Pine Ridge Reservation in South Dakota, our biggest Indian reservation. Do you have any information regarding the present condition of that, or would I have to get the information from Area Redevelopment Administration?

Mr. CRAFTS. I cannot speak to that directly.

Mr. UNDERHILL. I can answer that in these terms: They have not finished the report. They were out there a few months ago, and they are finishing it now. We are appraising the recreation potential of the area, and our report will contain suggestions as to what might be done in the recreation line to increase employment or to increase the income of the reservation. As soon as the report is completed, either our agency or Area Redevelopment Administration could make it available to you.

Senator MUNDT. Well, it says the Bureau has completed studies and recommendations, in the justification.

Mr. OGDEN. I have not seen that since I have joined the Bureau.

Mr. CRAFTS. The answer is, that is a mistake.

Mr. UNDERHILL. I do not think the report has been completed.

Mr. CRAFTS. We will get you a copy of the report as soon as it is done.

Chairman HAYDEN. The committee would like to have it.

Mr. CRAFTS. Yes, sir.

AUTOMOBILE BUMPER STICKER

Chairman HAYDEN. As far as I can determine from reading the justification, and the one for the supplemental appropriation, the automobile bumper sticker for 1966 has been designed. Who will distribute this bumper sticker?

Mr. CRAFTS. It has been designed, Senator, and here is one in case you want to see it. It will be distributed by the eight agencies that are listed on the first page of the act as agencies administering areas where entrance and user admission fees will be charged.

Chairman HAYDEN. They are distributed at that point?

Mr. CRAFTS. They are distributed at that point, and they would also be on sale at some of the regional offices and some of the headquarters offices of the agencies.

Chairman HAYDEN. What is its cost?

Mr. CRAFTS. This is not settled yet. Our original estimate and the basis for which our revenues are projected was $5.

There was considerable history during the passage of the bill through the Congress in support of a $7 sticker. The Recreation Advisory Council, which is a council of Cabinet officers established under Executive order, considered this question and recommended to the President that the price of the sticker be at $7, and it will be at $7, unless we receive contrary instructions from the White House.

This is where it stands at the present time.

I can submit for the record some of the reasons in support of this. One of those which seemed to be most persuasive was that this sticker permits the entry of an automobile and all its passengers to any of these areas in the country, any national park, any of the designated areas under the other seven or eight agencies for an unlimited number of times.

Already the fee at Yosemite and I think the fee at Yellowstone for just getting into those parks is $6, and since this sticker is for unlimited entry to unlimited areas, this seemed a reasonable fee to charge.

So this is what we are thinking of, but the final decision has not been made.

COLLECTION OF FEES

Senator BYRD. Mr. Crafts, are you proceeding to collect fees pending the clarification of the matter which has not been decided?

Mr. CRAFTS. The fees that are being collected at the present time are fees that had previously been collected under other authorities. This being done by the Park Service, and to some extent it is also being done by the Forest Service. But there are no fees being collected under the authority of this legislation, because as we interpret the language, this cannot be done until the President issues an Executive order which designates the areas to which the fees will apply.

A proposed Executive order is pending in the White House at the present time.

AUTOMOBILE BUMPER STICKER

Also, our expectation was that the sticker would run from April 1 to April 1, so we think we will be in business by that time.

Senator BYRD. Do you think that an automobile sticker will hold up for a period of 12 months?

Mr. CRAFTS. The specifications to the firm which prepared this were designed with that in view, and the sticker is being tested at the present time with respect to both fading and whether it will come off. So far it has held up very well. We are subjecting it to testing now. We originally had in mind a windshield sticker. We could not do this because a number of States prohibit the use of a windshield sticker so we had to go to the bumper sticker. If it does not hold up, if it falls off, we are in trouble. There is no question about that. So I hope it will hold up.

Senator BYRD. It will have to be considerably better than the usual campaign stickers, Mr. Chairman.

Senator MUNDT. They are not designed for quite as long a period of time.

USER FEE REGULATIONS

Chairman HAYDEN. Also, throughout your justifications is an indication that regulations are being prepared to cover various user charges. Will you please summarize these, indicating the purposes for which user charges will be made, and the amounts of those charges?

You may submit the summary for the record.

Mr. CRAFTS. All right. We will be glad to submit a statement for the record.

(The summary referred to follows:)

RECREATION FEES (NOT YET APPROVED)

There will be two general types of fees: entrance or admission fees and user fees. There will be three types of entrance or admission fees: An annual fee, a fee for single visit or series of visits which may be paid in lieu of annual fee, and a fee for a visit payable at area to which the annual fee does not apply. Entrance or admission fees for a single visit or series of visits, or for a visit or an area where the annual fee does not apply, shall be paid by individuals 16 years or older.

ENTRANCE OR ADMISSION FEES

Annual fee

Payment of the annual fee shall admit the individual paying such fee and all those who accompany him in a private noncommercial automobile to all designated areas, except those areas specifically excluded from coverage by the head of the administering agency. The annual fee shall not exceed $7 per year.

Optional short-term fee

Payable by persons who choose not to pay the annual fee. Fee shall be $0.25, $0.50, $0.75, or $1 per person per day at the discretion of the administering agency. A weekly rate for 7 consecutive days of continuous or intermittent use shall be established at five times the daily rate.

Other entrance or admission fees

Fee for a single visit payable at designated areas to which the annual fee does not apply. These are areas not commonly entered by automobile. Fees shall be $0.25, $0.50, $0.75, or $1 per person at the discretion of the administering agency.

USER FEES

Payable for the use of sites, facilities, equipment, or services. Applicable to well-developed campsites, picnic areas, bathhouses, lockers, boat launching facilities, boats and other marine equipment, guide services, firewood, and winter sports facilities.

Camp and trailer sites: $1 to $3 for overnight use.
Picnic sites: $0.50 to $0.75 per site per day.
Boat launching sites: $0.50 to $1.50 daily.
Lockers: $0.25 per locker daily.
Elevators: At least $0.10 per person per round trip.
Bathhouses: $0.25 to $0.50 per day per person 6 years and over.
Rowboats: Minimum of $1 per boat per day.

QUESTIONS FROM SENATOR BIBLE

Chairman HAYDEN. Senator Bible is unable to be present this morning, but he has asked that I secure from you an answer to a question which I now hand you. The question and your response can be included in the record.

Mr. CRAFTS. I will be glad to do that, Senator.

(The information referred to follows:)

COLLECTION OF VISITATION INFORMATION

Question. Section 6(a) of the Land and Water Conservation Fund Act provides that, unless the appropriations act changes the distribution, moneys appropriated for Federal purposes shall be allotted by the President in substantially the same proportion as the number of visitor-days in areas and projects for which admission fees are charged under section 2. What is being done with respect to the collection of information on visitation to such areas? Are all the agencies gathering such information on a uniform basis?

Answer. Under that subsection you will note that the directive for allottment of funds in this manner runs to the President. There has been no delegation of this authority to anyone, and insofar as we know none is contemplated.

However, by direction of the Recreation Advisory Council, a study has been completed on how best to measure recreation use of Federal areas. This study was made by a task force composed of members of agencies administering Federal recreation areas. This was done under my general supervision as director of the staff which services the Recreation Advisory Council.

That task force had considerable difficulty in agreeing on a common definition of what constitutes a visitor-day and developing a uniform method of counting the participants in recreation activities. We believe that uniformity must be invoked both in definition and in the procedures followed in measuring use of the areas in order that the formula prescribed by the act may be utilized on an equitable basis.

Although the task force prepared a report on this matter, at this time it has not been accepted by all agencies. There is great difficulty in getting agencies to accept a standard counting procedure. Considerable persuasive efforts are still needed to bring accord to this problem and its solution to the point of putting a uniform practice into operation. We hope this can be resolved.

LEWIS AND CLARK TRAIL COMMISSION

Chairman HAYDEN. Last fall there was enacted a law to establish a Lewis and Clark Trail Commission to implement the desire of Congress that the route traversed by these two explorers be marked and kept available for the enjoyment of the American people.

There will be placed in the record the text of this act, Public Law 88–630, approved October 6, 1964.

(The legislation referred to follows:)

Public Law 88–630

88th Congress, H.R. 12289

October 6, 1964

AN ACT To establish the Lewis and Clark Trail Commission, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby established an advisory and coordinating commission to be known as the "Lewis and Clark Trail Commission" (hereinafter referred to as the "Commission"), which shall be composed of twenty-seven members.

PURPOSE AND FUNCTIONS OF COMMISSION

SEC. 2. In furtherance of the objectives set forth in H. Con. Res. 61, which expressed the sense of the Congress that the route traversed by Captains Meriwether Lewis and William Clark on their expedition of 1804–1806 from Saint Louis, Missouri, to the Pacific Northwest should be identified, marked, and kept available for the inspiration and enjoyment of the American people; in order to advance public awareness and knowledge of the far-reaching and historic significance of the Lewis and Clark Expedition; in order to supplement such awareness with an appreciation of the great resources of the vast region through which the Lewis and Clark Trail extended, and thereby to encourage desirable long-term conservation objectives in the public interest of the people of that region and the Nation as well as the public use and outdoor recreation benefits therefrom, the Commission is authorized to review proposals prepared at the request of the Commission, or by other agencies on their own initiative, to carry out the purposes of this Act. The Commission may make recommendations to agencies of the Federal Government, States, and other public and private agencies, but the functions and responsibilities of the Commission hereunder shall not operate to restrict or inhibit the aforesaid agencies in any operations they may otherwise undertake in carrying out the general objectives referred to in this Act. The Commission is authorized also to render advice in a manner that will encourage the development by State or Federal agencies of a suitable connecting network of roads following the general route of the Lewis and Clark Trail with appropriate markers for such roads.

MEMBERSHIP OF COMMISSION

SEC. 3. The Commission shall comprise the following—

(a) Ten members to serve, subject to their acceptance of membership, on behalf of the States of Missouri, Kansas, Iowa, Nebraska, South Dakota, North Dakota, Montana, Idaho, Washington, and Oregon; the individual member from each State being the Governor thereof or his designated representative;

(b) Four members, who shall be Members of the House of Representatives, two from each party, to be appointed by the Speaker of the House of Representatives;

(c) Four members, who shall be Members of the Senate, two from each party, to be appointed by the President of the Senate;

(d) Five members, who shall be the Secretaries of the following Departments, or their designated representatives: Interior; Agriculture; Defense; Health, Education, and Welfare; and Commerce;

(e) Four members, who shall be appointed by the J. N. "Ding" Darling Foundation (a nonprofit corporation).

ORGANIZATION OF THE COMMISSION

SEC. 4. (a) The Chairman of the Commission shall be elected for such term as may be determined by the membership thereof. The Secretary of the Interior shall convene the first meeting of the Commission within ninety days following enactment of this Act at such time and place as he may designate;

(b) The Chairman shall designate a Vice Chairman from members of the Commission;

(c) Any vacancy in the membership of the Commission shall be filled in the same manner in which the original appointment was made;

(d) Where any member ceases to serve in the official position from which originally appointed under section 3, his place on the Commission shall be deemed to be vacant;

(e) The Commission is authorized to issue such rules and regulations as it may consider desirable in the conduct of its activities pursuant to this Act.

POWERS AND ADMINISTRATIVE PROVISIONS

SEC. 5. (a) The Commission may hold hearings at such times and places as it deems advisable for purposes of this Act.

(b) Each department, agency, and instrumentality of the executive branch of the Government is authorized to furnish to the Commission, upon request made by the Chairman or Vice Chairman, such information as the Commission deems necessary to carry out its functions. Any Federal agency is hereby authorized to furnish the Commission with suitable office space to carry out its functions.

(c) The head of each Department or agency shall cooperate with the Commission in the performance of its functions and shall provide the Commission with such technical services and assistance as may be necessary and available.

COMPENSATION OF COMMISSION MEMBERS

SEC. 6. (a) Members of the Commission shall serve without compensation.

(b) Members of the Commission, upon approval of the Chairman, shall be entitled to reimbursement for travel, subsistence, and other necessary expenses incurred by them in the performance of their duties as members of the Commission.

REPORTS AND RECOMMENDATIONS

SEC. 7. Within two years following the approval of this Act, the Commission shall submit a report concerning its activities. Such report shall be submitted, together with any recommendations it may have to the President of the United States, to the President of the Senate, to the Speaker of the House of Representatives, and to other Federal and State agencies named in this Act. The Commission may thereafter from time to time as indicated by circumstances, but at least every two years, submit such additional reports as it may deem appropriate. The final report of the said Commission shall be submitted no later than five years following the approval of this Act, at which time the Commission shall cease to exist. The records and property of the Commission shall be turned over to the Secretary of the Interior for such use or disposition as he shall find to be appropriate.

DONATIONS, EXPENDITURES, ACCOUNTS

SEC. 8. (a) The Commission is authorized to accept donations of personal services or property to assist in carrying out the purposes of this Act. The Commission may secure supplies, services, make contracts, and exercise those powers generally that it deems necessary to enable it to carry out effectively and in the public interest the purposes of this Act.

(b) Expenditures of the Commission shall be paid by an executive officer designated from among its membership, who shall keep complete and accurate records of such expenditures and who shall account for all funds received by the

Commission. Such accounts shall be subject to audit by the General Accounting Office of the United States.

AUTHORIZATION FOR APPROPRIATIONS

SEC. 9. There is authorized to be appropriated annually, through the Department of the Interior and related agencies appropriation Acts, not to exceed the sum of $25,000 to carry out the provisions of this Act.

Approved October 6, 1964.

Legislative history:

House Report No. 1878 (Committee on Interior and Insular Affairs).

Senate Report No. 1531 accompanying S. 3116 (Committee on Interior and Insular Affairs).

Congressional Record, volume 110 (1964):

September 22: Considered and passed House.

September 24: Passed Senate, in lieu of S. 3116.

BUDGET REQUEST FOR INITIATION OF PROGRAM

Chairman HAYDEN. To meet the estimated expenses of the Commission between January 1, 1965, and June 30, 1966, there is a request for $25,000. The justification of this request will be included in the record.

(The justification referred to follows:)

INDEPENDENT OFFICES—HISTORICAL AND MEMORIAL COMMISSIONS

Lewis and Clark Trail Commission

Appropriations, 1964	0
Appropriations, 1965	0
Budget estimate, 1966	$25,000

JUSTIFICATION

Lewis and Clark Trail Commission

The estimate of $25,000 covers the operations of this Commission, which was established by Public Law 88–630, approved October 6, 1964, through fiscal year 1966.

This law established a 27-member Commission for a 5-year period to advise on and coordinate activities of agencies and individuals interested in preserving and marking as much as possible of the route followed by Lewis and Clark in 1804–6. This law supplements a resolution approved in 1963 expressing the sense of the Congress that the route traversed by these two explorers should be marked and kept available for the inspiration and enjoyment of the American people.

The House Concurrent Resolution 61 stated in part: "that the route traversed by Capts. Meriwether Lewis and William Clark on their expedition of 1804–6 from St. Louis, Mo., to the Pacific Northwest should, to the greatest extent feasible, be identified, marked, and kept available for the inspiration and enjoyment of the American people * * *."

The Commission is composed of 10 members representing the 10 States involved; 4 members each from the House of Representatives and the Senate; four members to be appointed by the J. N. "Ding" Darling Foundation; and the Secretaries of the Interior, Agriculture, Defense, Health, Education, and Welfare, and Commerce, or their designated representatives. The Director, Bureau of Outdoor Recreation, was designated to serve on the Commission as the representative of the Secretary of the Interior.

The members of the Commission serve without compensation; however, upon approval of the Chairman, they shall be entitled to reimbursement for travel, subsistence, and other necessary expenses incurred in the performance of their duties as members of the Commission.

Under provisions of the act, the Secretary of the Interior is required to call a meeting of the Commission within 90 days after approval of the act. The Secretary has complied with these provisions, and on January 4, 1965, convened the members of the Commission in Washington, D.C. At this meeting, the

members appointed Mr. Sherry R. Fisher as Chairman. Mr. Fisher is the executive secretary of the J. N. "Ding" Darling Foundation. Mr. Fisher appointed Mr. Marcus J. Ware, the designee of the Governor of Idaho, as Vice Chairman. He also appointed Dr. Edward C. Crafts, Director, Bureau of Outdoor Recreation, as Executive Officer of the Commission. The membership of the Commission is listed below:

STATES

Idaho: Marcus J. Ware, attorney at law.
Kansas: John Anderson, Jr., Governor.
Missouri: William E. Towell, director, conservation commission.
Montana: Orvin B. Fjare, State advertising director.
Nebraska: Melvin O. Steen, director, game, forestation, and parks commission.
North Dakota: Paul A. Ewald, president, State historical society.
Oregon: Mark O. Hatfield, Governor.
South Dakota: Mr. Curtis B. Mateer, executive vice president, Pierre National Bank.
Washington: Lloyd R. Bell, supervisor, Washington State Parks and Recreation Commission.

HOUSE OF REPRESENTATIVES

E. Y. Berry, South Dakota.
Thomas G. Morris, New Mexico.
Ralph J. Rivers, Alaska.
Joe Skubitz, Kansas.

SENATE

Quentin N. Burdick, North Dakota.
Frank Church, Idaho.
Len B. Jordan, Idaho.
Milward L. Simpson, Wyoming.

EXECUTIVE DEPARTMENTS

Department of Agriculture: John A. Baker, Assistant Secretary.
Department of Commerce: Lowell K. Bridwell, Deputy Under Secretary, Transportation.
Department of Defense: Stephen S. Jackson, Special Assistant to Assistant Secretary, Manpower.
Department of Health, Education, and Welfare: Joseph T. Ventura, Assistant to the Secretary.
Department of the Interior: Edward C. Crafts, Director, Bureau of Outdoor Recreation.

"DING" DARLING FOUNDATION

Marshall N. Dana
Sherry R. Fisher
Christopher Koss
John Kyl

At the January 4 meeting, the Commission considered its responsibilities under the Lewis and Clark Trail Commission Act. It decided that its next meeting will be held in St. Louis, Mo., in late spring or early summer. The actual date is contingent upon the completion of the study report on the Lewis and Clark Trail by the Bureau of Outdoor Recreation.

The act authorizes an annual appropriation of not to exceed the sum of $25,000 to carry out the Commission's responsibilities. Section 6(b) of the act provides that upon approval of the Chairman, the members shall be entitled to reimbursement for their travel, subsistence, and other necessary expenses incurred by them in the performance of their duties as members of the Commission. This estimate will provide for these expenses and for the salaries and expenses of one employee who will perform secretarial duties for the Commission.

ITEMIZATION OF ESTIMATE

		Actual, 1964	Estimate, 1965	Estimate, 1966
	OBLIGATIONS BY OBJECTS			
11.1	Personnel compensation			$8,000
12.0	Personnel benefits			600
21.0	Travel and transportation of persons			11,400
23.0	Rent, communications, and utilities			1,000
24.0	Printing and reproduction			1,000
25.2	Services of other agencies			1,250
26.0	Supplies and materials			750
31.0	Equipment			1,000
	Total obligations			25,000

STUDY COMMISSION

Mr. CRAFTS. This is a study Commission which has on it Members of the Senate and Members of the House and Governors or their designated representatives from 9 to 10 States. The Commission has a terminable life of 5 years and is directed to report to the Congress with recommendations as to how best to commemorate the Lewis and Clark Expedition, file a first report in 2 years and subsequent reports at intervals thereafter and a final report in 5 years. The Commission has had one organization meeting and elected as Chairman, Mr. Sherry Fisher of the "Ding" Darling Foundation in Iowa. The continued functioning of this Commission is dependent upon the $25,000 for financing the travel and related expenses of the members and for other incidental expenses of this Commission.

Chairman HAYDEN. Any further questions?

COLLECTIONS UNDER THE CONSERVATION FUND

Senator BYRD. Yes, Mr. Chairman, I have some questions.

I apologize, Mr. Crafts, for having to absent myself a little earlier. So I may be repetitious. I am sorry for this.

How much has been collected in the fund to date under the act?

Mr. CRAFTS. Only $1,300,000, Senator. This is from the motorboat fuel tax.

Senator BYRD. And you are asking for an appropriation of $125 million?

Mr. CRAFTS. That is correct. And we can supply you, I think we have already offered it for the record, an estimate of how the fund will build up by months during the next 18 months, which shows how it arrives at the $125 million.

Senator BYRD. I thought I saw somewhere in your material an estimate for fiscal year 1965.

Mr. CRAFTS. That is right. That is under a supplemental.

Senator BRYD. What is that amount?

Mr. CRAFTS. I believe it is for $16 million. The revenues that we estimate will build up by June are about $45 million.

Senator BYRD. And to date they amount to what?

Mr. CRAFTS. About $1,300,000.

INTERPRETATION OF WORDS "FEDERAL PURPOSES" APPEARING IN STATUTE

Senator BYRD. Would you kindly explain to me the phrase "Federal purposes," as you interpret it as opposed to State purposes under section 4(a) of Public Law 88–578?

Mr. CRAFTS. Yes, sir. The 40 percent for Federal purposes is moneys which, subject to the approval of the Appropriations Committee, would be available for acquisition of lands otherwise authorized by the National Park Service, the Forest Service, and the Bureau of Sport Fisheries and Wildlife.

The percentage for State purposes are moneys which would be allocated to the States on a 40–60 matching basis for planning acquisition or development of State recreation areas.

Senator BYRD. Sixty percent would go to the State?

Mr. CRAFTS. Sixty percent would go to the States, 40 percent would go to these three Federal agencies.

Of the 60 percent that goes to the States, we have a tabulation in here indicating the amounts by State. The States would be required to do several things to obtain that 60 percent which would be apportioned to them. They would have to have an approved State plan.

Senator BYRD. I know about this.

Mr. CRAFTS. And they would have to match the Federal dollars on a 40–60 ratio, so there are two 40–60's. One is between Federal and State, and the other 40–60 is the State matching of the Federal dollars.

Do I make myself clear on that?

EXPLANATION OF STATE MATCHING FUNDS

Senator BYRD. No; not to me. Would you distinguish between this 40–60 matching to which you have just referred, and the apparent 50–50 matching under section 5(c)?

Mr. CRAFTS. Yes, sir. The law says on that 50–50 matching that it may not be more than 50 percent Federal dollars. The President's budget provides that instead of going up to 50 percent Federal matching, the Federal portion be limited to 40 percent on the dollar.

That is why we happen to have two 40–60 figures.

Senator BYRD. So under the allocation covered by section 4(a) the Federal Government would have $50 million?

Mr. CRAFTS. Approximately that.

AUTHORIZED USE OF FEDERAL FUNDS

Senator BYRD. Now, this $50 million as applied to the Forest Service, for example, could be used by the Forest Service to acquire lands, interest in lands, and so forth?

Mr. CRAFTS. For the acquisition of lands or waters or interests therein, inside existing national forest boundaries, with the one exception already referred to, that they can go outside a national forest to the extent of 500 acres, and another exception is that not more than 15 percent of the acreage added to the forest system shall be west of the 100th meridian.

Senator BYRD. And as to that expenditure, the Forest Service can provide 100 percent of the cost of the acquisition of those lands?

Mr. CRAFTS. That is correct.

Senator BYRD. So no State matching is required as to the expenditure of those Federal moneys for that purpose?

Mr. CRAFTS. That is correct.

Senator BYRD. Do I understand that the State can draw upon its, I believe you said, 60 percent for matching on the 50–50 basis, of the Federal moneys.

Mr. CRAFTS. No, sir. It could under the law, but as I say, the President's budget provides that the States must put up $60 for every $40 that the Federal Government puts up.

In other words, an election has been made not to go to the maximum degree of Federal matching that the law would permit. The law does not say that it shall be 50–50. It says that it may be up to 50–50.

STATE APPORTIONMENTS

Senator BYRD. Section 5(b), paragraph (1) says that two-fifths shall be apportioned equally among the several States. What does this amount to for each State?

Mr. CRAFTS. This is only an estimate, as I said earlier, conditioned upon the amount of money appropriated, and some other conditions, but the two-fifths equal distribution amounts to $593,000 per State.

I am going to submit into the record, Senator, the apportionment for each State for these various items.

Senator BYRD. What would be the amount allocated to the Forest Service?

Mr. CRAFTS. About $20 million.

Senator BYRD. Under section 5(c), payments to States shall not exceed 50 percent of the costs of planning acquisition and so forth. What is meant by "such funds or services" as you would interpret this?

Mr. CRAFTS. As I would interpret that, this again is not more than 50 percent, and as I have explained, the decision has been made, subject to congressional approval, of 40–60 matching instead of 50–50 matching. Subsection (f) over on page 6, specifies a number of conditions and written assurances that the State must meet before the Secretary would feel that the matching requirements have been met.

These are spelled out. "Such funds or services shall be satisfactory to the Secretary." They are spelled out in detail, as I say, in section (f), on page 6.

STATE SERVICES REQUISITE UNDER STATUTE

Senator BYRD. What services by the State would qualify under the terminology?

Mr. RICE. One example would be the salaries of recreation planners that might be on the State's payroll, Senator, but I believe Assistant Director Underhill would probably be able to give you more specific information on this, if you care to have more.

Senator BYRD. I think we should have something.

Mr. UNDERHILL. Our current interpretation, Senator, is that in putting up its share that the State could not only put up dollars, but it could put up the rent, let us say, of the buildings that are being used for planning, or stenographic help, or other types of services which were furnished by the State, and for which they would be given credit as part of their share on the matching basis.

Mr. CRAFTS. We would like the privilege, Senator, on that point, to check this with our attorneys and if our statement is incorrect, to correct the record.

Chairman HAYDEN. That is all right.

APPORTIONMENT TO WEST VIRGINIA

Senator BYRD. Mr. Crafts, I am sorry to ask you to be specific, but what has been determined under section 5(b), paragraph (2), on the basis of need as the amount for my State of West Virginia, if such an apportionment has been determined?

Mr. CRAFTS. Did you say under paragraph (2)?

Senator BYRD. That is the three-fifths paragraph.

Mr. CRAFTS. Yes. It is $218,000 plus $68,000. Then if you add the $593,000 under paragraph (1), it is a total of $879,000 for West Virginia for fiscal year 1966.

But in addition to that there are some amounts that have not been apportioned. There is the out-of-State visitors use which we have not been able to take into account yet because we do not have the records. We expect that this apportionment will be made by the end of this year.

And there is an amount that I cannot express an opinion on that the State of West Virginia might obtain from the contingency funds of 5 percent.

I should also like to repeat, if I may, that these are estimates, subject to the action of the Congress and the approval of the Secretary.

NOTIFICATION OF APPORTIONMENT TO STATES

Senator BYRD. Surely.

Under subsection (b), paragraph (2) of that section 5, the Secretary shall notify each State of its apportionment. Has this been done?

Mr. CRAFTS. No, sir. There has been no notification of the States of their apportionment, because we do not know what this can be until at least two things happen, and maybe more.

We have to know the amount of money that Congress will appropriate, and the proportion between Federal and State that Congress elects to apply. And we have to have approval of the Secretary of this action.

We have not submitted it to the Secretary, and probably will not until we know the basis on which we are operating, which is the amount that Congress will appropriate.

STATEWIDE PLANS

Senator BYRD. I am sure you have already presented this information to the committee, but if I might ask again, how many States have submitted comprehensive State outdoor recreation plans?

Mr. CRAFTS. There are no States that have submitted since we have submitted the planning requirements last fall. There were two States, New Jersey and Wisconsin, that submitted plans prior thereto. Some adjustment in those plans is necessary.

But at the rate at which we know that the planning is going on at the present time, we expect that about 27 States will have their plans in by the beginning of next fiscal year.

West Virginia State Agency

Senator Byrd. What is the name of the West Virginia State agency with authority to represent and act for the State?

Mr. Crafts. Koder M. Collison, Commerce Commissioner, West Virginia Department of Commerce.

Spruce Knob and Seneca Rocks

Senator Byrd. Mr. Crafts, you and I have discussed my bill a number of times, S. 7, which would establish, in the area of Spruce Knob and Seneca Rocks, a recreation area of about 100,000 acres. This would be within and adjacent to the Monongahela National Forest.

I note on page 14 of your justifications that you say the Bureau has been involved extensively in the review of special areas which offer recreation potential, and you go on to name some of those areas, and Spruce Knob-Seneca Rocks is included.

What is the status of your review of this particular area, may I ask?

Mr. Crafts. Where we stand, in brief, is that last year we completed our analysis of the desirability of this as a national recreation area, and concluded that it would be desirable as a national recreation area.

I believe that after our last conversation with you we inquired of the Agriculture Committee, to which this bill was referred, whether a request for a report had come down, and I cannot tell you at the moment whether it has or not.

We are prepared to submit a report on this bill when requested.

Senator Byrd. Mr. Crafts, in your judgment, could that legislation be funded under the Land and Water Conservation Act?

Mr. Crafts. At the present time, as I understand it, the lands proposed for acquisition that lie within national forest boundaries can be funded right now.

I believe, as a matter of fact, that the Forest Service does propose to acquire some land that would lie within this area.

The land outside the national forest boundaries could not be funded under this act until your bill is passed. Then it could be.

Mr. Nelson. It would have to have a specific authorization in his bill to make it available.

Mr. Crafts. If the national forest boundary were extended to encompass the area.

Areas outside Monongahela National Forest

Mr. Nelson. The law says the national forest boundary existing at the time the law passed; so there will have to be some language in your bill to amend the land and water conservation bill to make this fund available for those areas presently outside of the Monongahela National Forest.

Mr. Crafts. There is only a small part of it outside.

Senator Byrd. Can you state approximately what part lies outside?

Mr. Nelson. I do not think there is over a tenth of it that is outside.

Mr. Ogden. Mr. Crafts, I think the language is already in his bill to do just that.

Mr. Nelson. It probably is, if he recommended it.

Senator BYRD. I do not recall, but I was under the impression that it would require an amendment, Mr. Crafts.

Mr. CRAFTS. To your bill?

Senator BYRD. Yes.

Mr. CRAFTS. When we report on your bill, we will watch that.

PROPOSED 1966 SUPPLEMENTAL APPROPRIATION

Senator BYRD. May I ask a question concerning a supplemental bill to be considered later, to ask how much is in there for Seneca Rocks?

Mr. CRAFTS. I would have to ask Mr. Nelson.

Mr. NELSON. $250,000, Senator Byrd. That I understand will be handled by the supplemental committee.

Senator BYRD. Does this require the passage of my bill prior thereto?

Mr. NELSON. No, sir. The reason that it is in the supplemental is that we understand that the land is available now, and may not be available very long.

Senator BYRD. This means, then, that you can proceed with Seneca Rocks prior to and independent of action on my bill?

Mr. NELSON. Yes, sir.

Mr. CRAFTS. Yes, sir.

REQUIREMENT OF LEGISLATION FOR ESTABLISHMENT OF NATIONAL RECREATION AREA

Senator BYRD. Do I understand you to say, and I do not think this is what you mean to say, that a recreation area in that section of West Virginia can be established without the passage of authorizing legislation such as my bill?

Mr. CRAFTS. What I meant to say was a national recreation area would require the passage of legislation such as your bill.

Senator BYRD. What is this that you propose to do independent of the passage of my bill?

Mr. CRAFTS. What you can do independently of the passage of your bill is acquire lands within existing national forest boundaries that would fall within the national recreation area and such acquisitions could be funded under this bill, and Seneca Rocks is an example.

ACREAGE IN WEST VIRGINIA

Senator BYRD. Could you state, Mr. Crafts, the total acreage in my State which may be involved under the act?

Mr. CRAFTS. You mean in this year, or you mean over a period of time?

Senator BYRD. Could you give me both?

Mr. CRAFTS. I will have to submit that for the record.

Senator BYRD. Fine.

Could you give me either at this time?

Mr. NELSON. I can give it to you for the national forest. That would be about 8,100 acres in 1965 and 1966. That is assuming the supplemental and the 1966 budget.

Mr. CRAFTS. That is the total amount, because there is nothing for the Park Service in this fiscal year and fiscal 1966. What may be needed in subsequent years we will have to submit for the record.

(The information referred to follows:)

WEST VIRGINIA ACQUISITIONS

The proposed Seneca Rocks-Spruce Knob recreation area contains about 100,000 acres of land. About 40,000 is privately owned and much, but not all, of this would eventually be purchased. During the next 4 to 6 years the Forest Service would propose to buy about 15,000 acres in this area. There would also be future purchases within the remainder of the Monongahela National Forest but the estimated total amount has not been determined at this time.

No future acquisitions in West Virginia are contemplated at this time by National Parks Service or Bureau of Sports Fisheries and Wildlife.

NATIONAL SYSTEM OF SCENIC AND RECREATION WAYS AND PARKWAYS

Senator BYRD. There was one other question I had, Mr. Crafts, that had to do with the survey of parkways. I have specific reference to the Allegheny Parkway, which would be established by a bill which I have introduced.

I thought I had seen in your material something pertaining to a study of various parkways, which have been proposed—scenic roads and parkway studies.

Mr. CRAFTS. Yes. There is a study underway at the present time by the Recreation Advisory Council, which, as I say, is a Cabinet-level group established by Executive order, of the possibility and desirability of a national system of scenic and recreation ways and parkways.

There is an interdepartmental group working on this. The leadership is with the Department of Commerce. An initial report I think is expected sometime this spring.

That is what is referred to in this statement, depending on what comes out of that report.

And I might say this is a very intensive and across-the-board report. We have the cooperation of all the States involved. They have put in over $1 million of cooperative help on this.

We think this group come up with a proposal for a national system, and if approved by the Recreation Advisory Council, why presumably this proposal for a national system will be submitted to the Congress.

HIGHLAND SCENIC HIGHWAY, MONONGAHELA NATIONAL FOREST

Senator BYRD. Mr. Nelson, are you familiar with the highland scenic highway in the Monongahela National Forest where the Bureau of Public Roads is allocating funds for this highway which will open up a beautiful recreation route on the crest of the highest mountain in West Virginia?

Mr. NELSON. Yes, sir. This route has been considered by Congress for use of public lands highway funds. It will eventually be about 160 miles long and will generally be west from your proposed Spruce Knob-Seneca Rocks National Recreation Area.

Senator BYRD. Will this land and water conservation fund be involved in acquisition of lands for recreation purposes along this scenic highway?

Mr. NELSON. Yes, it will. We consider this very thing of high priority in your State—high priority, along with some land purchases also in the proposed Spruce Knob-Seneca Rocks National Recreation Area which was included in President Johnson's message on natural beauty.

AUTHORITY FOR ACQUISITION OF LANDS

Senator BYRD. Do you have authority to acquire this land without special legislation?

Mr. NELSON. The Land and Water Conservation Fund Act gave us no new authorities. We in the Forest Service have two basic acquisition authorities that will be used. The first—and one that will be used in the majority of cases—is the Weeks law of 1911. The other is the 1956 act applying to the Department of Agriculture for acquiring lands or interest in lands by purchase, donation, or exchange. This act will be used in States or situations where the Weeks law does not apply.

It will also be used where we determine that the public recreation interest can be properly served by acquisition of only an interest in the land and water—such as a scenic easement. We can also use this authority to exchange interests such as mineral, water, or timber. Thus the 1956 act may be used in connection with the highland scenic drive or other recreation complexes.

Senator BYRD (presiding). All right, Mr. Crafts. I certainly thank you for your courtesy and your patience in answering my questions again. I apologize for having to leave the room earlier.

Mr. CRAFTS. We thank you for your interest.

Senator BYRD. I also want to congratulate you and your people on the fine work you are doing, and we certainly look forward to working with you in the State of West Virginia.

ADJOURNMENT OF SUBCOMMITTEE

The subcommittee will stand adjourned until 10 a.m. Friday morning, February 19, at which time the Office of the Secretary and the National Park Service will be heard.

(Whereupon, at 1:10 p.m., Thursday, February 18, 1965, the subcommittee was recessed, to reconvene at 10 a.m., Friday, February 19, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

FRIDAY, FEBRUARY 19, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Chairman Hayden, Senators Byrd, Bartlett, Mundt, and Young.

DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY

STATEMENTS OF D. OTIS BEASLEY, ASSISTANT SECRETARY FOR ADMINISTRATION; ACCOMPANIED BY SIDNEY D. LARSON, DIRECTOR OF BUDGET; DALE L. ROTHROCK, CHIEF, FISCAL SECTION; AND HOWARD ECKLES, OFFICE OF SCIENCE ADVISER

THE 1966 BUDGET ESTIMATES

Chairman HAYDEN. The subcommittee will be in order.

The fiscal year budget estimate for the Office of the Secretary is $4,479,000, an increase of $386,500 over the amount appropriated in fiscal year 1965. The justifications for this estimate will be printed in the record.

(The justifications referred to follow:)

SALARIES AND EXPENSES

HIGHLIGHT STATEMENT

The estimate for the fiscal year 1966 for the Office of the Secretary is $4,479,000, an increase of $114,000 over 1965.

The appropriation for the Office of the Secretary finances the salaries and expenses of the Secretary, the Under Secretary, the Assistant Secretaries, the Office of Information, and the resources program staff with their supporting staffs. The Secretary and the supporting staffs provide general direction, guidance, coordination, and service to all the bureaus and offices of the Department. There has been a continual growth in the variety, size, and importance of the programs carried on by the Department during recent years. New responsibilities are continually being placed on the Department. It is highly important that strong central direction and guidance be given to the various programs and that specialized staff be available to provide assistance and support to the bureaus and offices.

The increases requested for the fiscal year 1966 are not great. The largest is in the Office of the Science Adviser to the Secretary where request is being

made for five additional positions with funds for other expenses, or a total increase of $68,600. Other increases are for two positions in the Division of Management Research, and a few other requests for salary or other funds to make up current deficiencies in certain areas.

Office of the Secretary

Appropriation, 1964	$3,858,400
Transferred to "Operating expenses, Public Buildings Services," General Services Administration	−3,375
Total available, 1964	3,855,025
Appropriation, 1965	4,110,500
Pay cost supplemental	254,500
Total appropriation, 1965	4,365,000

SUMMARY OF INCREASES AND DECREASES, 1966

Increase in program requirements for Office of Science Adviser	68,600
Increase in administrative management area: 2 positions, filling of other authorized positions, and other expenses	45,400
Net increases	114,000
Budget estimate, 1966	4,479,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
1. Departmental direction	$745,018	$650,305	$58,995		$709,300
2. Program direction and coordination	1,242,177	1,382,500	103,000		1,485,500
3. Administrative management services	1,706,388	1,905,295	90,405		1,995,700
4. General service	147,174	172,400	2,100		174,500
Unobligated balance lapsing	14,268				
Total	3,855,025	4,110,500	254,500		4,365,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Departmental direction	$745,018	$709,300	$777,900	+$68,600
2. Program direction and coordination	1,242,177	1,485,500	1,485,500	
3. Administrative management services	1,706,388	1,995,700	2,038,000	+42,300
4. General services	147,174	174,500	177,600	+3,100
Unobligated balance lapsing	14,268			
Total	3,855,025	4,365,000	4,479,000	114,000

Analysis of increases

	Estimate 1965		New positions		Other personnel compensation	Personnel benefits	Other objects	Total increases	Estimate 1966	
	Positions	Funds	Number	Salaries					Positions	Funds
Departmental directory:										
Office of the Secretary	31	$444,700	5	$53,000		$3,700	$11,900	$68,600	36	$513,300
Office of the Under Secretary	7	112,200							7	112,200
Office of Information	14	152,400							14	152,400
Total	52	709,300	5	53,000		3,700	11,900	68,600	57	777,900
Program direction and coordination:										
Assistant Secretary, Water and Power	22	311,200							22	311,200
Assistant Secretary, Mineral Resources	18	236,075							18	236,075
Assistant Secretary, Public Land Management	18	256,100							18	256,100
Assistant Secretary, Fish and Wildlife	10	116,600							10	116,600
Resources program staff	37	565,525							37	565,525
Total	105	1,485,500							105	1,485,500
Administrative management services:										
Assistant Secretary, Administration	5	82,800							5	82,800
Office of Survey and Review	32	459,900					1,500	1,500	32	461,400
Office of Management Operations	76	662,400							76	662,400
Division of Budget	14	189,000			$12,300	900	1,800	15,000	14	204,000
Division of Management Research	16	197,700	2	18,100		1,300	5,000	24,400	18	222,100
Division of Personnel Management	32	371,500							32	371,500
Correspondence Control Office	3	32,400			1,400			1,400	3	33,800
Total	178	1,995,700	2	18,100	13,700	2,200	8,300	42,300	180	2,038,000
General services		174,500					3,100	3,100		177,600
Grand total	335	4,365,000	7	71,100	13,700	5,900	23,300	114,000	342	4,479,000

SALARIES AND EXPENSES

Statement of new positions requested in 1966

Office of the Secretary:	
1 GS–15 senior scientist	$17,600
2 GS–14 senior scientist	28,340
1 GS–7 secretary	6,050
1 GS–6 secretary	5,505
Total	57,495
Lapse	−4,495
Total	53,000
Division of Management Research:	
1 GS–13 management analyst	12,075
1 GS–7 statistical clerk	6,050
Total	18,125
Lapse	−25
Total	18,100
Grand total	71,100

DEPARTMENTAL DIRECTION

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Office of the Secretary	$512,192	$444,700	$513,300	+$68,600
(b) Office of the Under Secretary	93,496	112,200	112,200	
(c) Office of Information	139,330	152,400	152,400	
Total	745,018	709,300	777,900	+68,600

(a) Office of the Secretary, $513,300

The estimate for the immediate Office of the Secretary is $513,300, which includes an increase of $68,600. This increase is entirely for the office of the Assistant to the Secretary for Research (Science Adviser) which is included in this estimate. In addition to the Office of the Science Adviser, the estimate provides for the Secretary and a staff of 35 employees. These consist of special assistants, personal aides, and confidential advisers together with secretaries and clerical staff. The assistants and advisers assist and advise the Secretary in particular areas, they may act on behlf of the Secretry on specific matters referred to them for disposition, or they may represent the Secretary in various executive office and interagency groups. The increase of $68,600 for the Office of the Science Adviser will provide for five positions, and proportionate operating expenses.

The significance of research and development programs to accomplish the Department's responsibilities for natural resources conservation and development led to the establishment of the post of Science Adviser to the Secretary in 1961. The need for this post and augmentation of its present staff capabilities is shown by the following information.

"The broad scope of Departmental objectives requires research and operational programs in most fields of the earth and life sciences, engineering, and social sciences. Water, land, mineral, energy, biological, and recreational resources all fall under cognizance of the Department and consequently concern its research activities.

A further characteristic of Interior's activities is the extent which research in one bureau is related to research or action programs in other bureaus. For

example, nine bureaus or offices are concerned with water resources. The subject of oceanography concerns four bureaus, and energy resources concern five different organizations within the Department. All of these subjects cross the administrative lines of assistant secretaries.

Research in Interior is also related to and dependent upon research in other Departments and also to many nongovernmental agencies such as States, universities, and industry.

Research has grown to represent a significant portion of the Department's total efforts. The 1965 fiscal year research and development program is $128 million or 12.42 percent of the total Departmental budget. Projections made for planning purposes extending to 1970 and beyond call for an increase in research efforts extending possibly to $350 million.

The size and complexity of subject matter and necessary interrelatedness of research amongst Bureaus of the Department has involved the Science Adviser extensively in the Department's overall management, planning, and direction of the departmental program in his capacity as an adviser and consultant to the Secretary and the Assistant Secretaries of Interior. This primary functions have been threefold. He has served as a personal adviser to the Secretary in reaching management decisions relating to Interior's research and development. He has had extensive involvement in the coordination of Department programs of external communication on research and development. He has handled a number of major issues which require extensive evaluation and recommendations on programs and policies. Most of these have fallen to the Science Adviser because of their uniqueness or special requirements requiring the attention of a personal representative of the Secretary who is competent in research and development matters.

Some of the ongoing tasks which are now the assigned responsibility of the Interior's Science Adviser are—

1. Principal U.S. representative and chairman of the U.S. working group on the United States-Japan Committee on Natural Resources Development underneath the United States-Japan Committee on Trade and Economic Affairs.
2. Chairman of the Federal Council for Science and Technology Committee on Natural Resources.
3. The Department's representative on the Federal Council for Science and Technology and overall responsibility for the Department's work with the Council's series of subcommittees.
4. Responsibility for coordination of the Department's efforts in scientific information as it is being handled through the Federal Council for Science and Technology.
5. Representation of the Department in long-range planning for research and development as coordinated by the Federal Council in the total Federal structure.
6. Coordinator of the Department's response to the Select Committee on Government Research which is studying research and development efforts throughout the Government.

Typical responsibilities on technical subjects recently handled by the Science Adviser are—

1. Advice and consultation on the Department's design of a future saline water conversion program.
2. Departmental representative on the interdepartmental energy study handled by the Office of Science and Technology.
3. Consultant on the lower Colorado River water quality and salinity problems which are deeply involved in relations with Mexico.
4. Consultant to the President's Science Advisory Committee Panel studying environmental pollution.
5. Consultant on the pesticide problem as it involves Interior.

During the past 2 years this large and varied amount of work has been handled with the help of one full-time assistant, currently financed by assessment of Bureaus, and with support from staff members throughout the Department detailed to the Science Adviser for brief periods. This work, primarily concerned with coordination of research, has taken priority over one of the most basic functions envisioned for the Science Adviser. This is the direct work with scientific programs of the Department conducting reviews and evaluations to determine the adequacy of research, the soundness of its design, and to assure the Secretariat that research is on the most pertinent problems for

accomplishing departmental objectives. Increases in efficiency and output of advanced research will be accomplished by extension of the present capabilities of the Science Adviser by additions to his staff. Positions required and their functions are as follows:

Senior scientist, principal assistant to the Science Adviser and specialist in long-range research and development planning. This specialist in addition to helping the Science Adviser coordinate ongoing tasks would concentrate on the expected thrust of Interior's future research and science programs. He would coordinate planning of projections for expenditures in research for facilities, publications and related activities. He would pull together and present a unified departmental position for use in guidance and judgment on relation of research to total departmental programs. Basically, this effort will depend upon long-range planning activities of individual bureaus but will envision programs that need to be coordinated among bureaus or fall between missions of present organizational units. Long-range planning is critical to overall efforts of the Office of Science and Technology to relationships with other Federal departments and to the future required legislative processes.

Senior scientist, natural resources analyst: This position would provide a focal point for bringing together talent from within and outside the Department to carry out analysis of the interrelatedness and dependency of natural resources systems. The primary objective is to point out weaknesses and gaps in data and knowledge and to specify those instances where such gaps are handicapping resources development. This position will have extensive involvement with and will provide the principal backup for the Federal Council for Science and Technology Committee on Natural Resources which is chaired by the Science Adviser. There is particularly needed mechanisms whereby departmental studies can be concentrated on the complex elements which must be studied to solve particular resource development problems. This is particularly true where a multidisciplinary approach is required. He will serve as a focal point for organization of an analytical group within the Federal Government to devote its attention to the broad analysis of natural resources. In general, the multidisciplinary approach has not been successfully applied in natural resources problems. It is expected that the scientist in the position will provide advanced thinking in this area.

Specialist for the handling of scientific and technical information: The incumbent of this position will be an information scientist who will organize and keep current the procedures for mantaining overall facts about departmental research with respect to expenditures on current projects, personnel who are qualified in specific areas, research facilities, cooperation with other agencies and similar topics. He would provide leadership to the Secretariat and bureaus to insure that they also maintain appropriate facts with respect to their own areas. He would further provide leadership for bureaus to organize the information exchanges and data acquisition programs. He will provide the basic stimulant for study of and eventual organization of information centers on resources subjects such as water, energy, minerals, land, and aquatic sciences. He would analyze the Department's capabilities in the information science field and concentrate upon developments of the most modern systems for information storage, retrieval, analysis and use. He would represent the Department on Federal Council's Committee on Scientific and Technical Information.

(*b*) *Office of the Under Secretary, $112,200*

The estimate for the Office of the Under Secretary provides for the salary and expenses of the Under Secretary and a staff of six employees. No increase is requested for the fiscal year 1966. The Under Secretary assists the Secretary in the discharge of his duties and, in the absence of the latter, performs his duties.

(*c*) *Office of Information, $152,400*

The estimate of $152,400 for the Office of Information is the same as for the fiscal year 1965 and provides for a staff of 14 employees.

The staff of the Office of Information is responsible for technical and general functional supervision over all information activities of the Department. This includes providing basic information services for the Secretariat and other officers; directing the coordination, review and distribution of special information developed for all types of media; initiating information programs of a departmentwide nature involving more than a score of bureaus and offices; and guiding and assisting the many bureaus and offices of the Department in their informational activities.

PROGRAM DIRECTION AND COORDINATION

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Assistant Secretary for Water and Power	$283,388	$311,200	$311,200	
(b) Assistant Secretary for Mineral Resources	176,485	236,075	236,075	
(c) Assistant Secretary for Public Land Management	211,444	256,100	256,100	
(d) Assistant Secretary for Fish and Wildlife	93,550	116,600	116,600	
(e) Resources program staff	477,310	565,525	565,525	
Total	1,242,177	1,485,500	1,485,500	

(a) *Assistant Secretary for Water and Power, $311,200*

This estimate provides for the salaries and expenses of the Assistant Secretary for Water and Power and a staff of 21 employees in his office. No increase is requested for the fiscal year 1966.

The Assistant Secretary discharges the duties of the Secretary with respect to the development of water and power. He exercises secretarial direction and supervision over the Bureau of Reclamation, Bonneville Power Administration, Southeastern Power Administration, Southwestern Power Administration, Office of Saline Water, and the Defense Electric Power Administration.

(b) *Assistant Secretary for Mineral Resources, $236,075*

No increase is requested for the Office of the Assistant Secretary for Mineral Resources. The estimate provides for the salary and expenses of the Assistant Secretary and a staff of 17 employees.

The Assistant Secretary discharges the duties of the Secretary with respect to the development and utilization of minerals and fuels, including defense minerals activities. The Assistant Secretary exercises secretarial direction and supervision over the Bureau of Mines, Geological Survey, Office of Oil and Gas, Office of Minerals Exploration, Office of Coal Research and the Oil Import Administration and the Office of Geography.

(c) *Assistant Secretary for Public Land Management, $256,100*

This estimate provides for the salary and expenses of the Assistant Secretary and a staff of 17 employees. No increase is requested. The Assistant Secretary discharges the duties of the Secretary with respect to land utilization and management, territorial affairs, and Indian Affairs. The Assistant Secretary exercises secretarial direction and supervision over the Bureau of Land Management, National Park Service, Bureau of Indian Affairs, Office of Territories, the Alaska Railroad, and the Bureau of Outdoor Recreation.

(d) *Assistant Secretary for Fish and Wildlife, $116,600*

The estimate for the Assistant Secretary for Fish and Wildlife provides for his salary and expenses together with that of a staff of nine employees. No increase is requested. The Assistant Secretary for Fish and Wildlife discharges the duties of the Secretary with respect to the development, conservation, and utilization of the fish and wildlife resources of the Nation. The Assistant Secretary exercises secretarial direction and supervision over the Fish and Wildlife Services which is made up of the Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries.

(e) *Resources program staff, $565,525*

The estimate for the Resources Program Staff is the same as for the fiscal year 1965.

The Resources Program Staff provides a coordinating function unique to Interior: (1) specialized advisory staff service on new problems and technical advice to the secretariat; (2) central staff service to the Secretary and Under Secretary in program planning; and (3) coordination of five principal activities of the various Department bureaus in the field and in Washington and activities of the Department with those of other Departments and agencies.

The Staff consists of highly qualified professional employees with varied backgrounds of training and experience in economics, engineering, political science, international affairs, forestry, soil conservation, fish and wildlife, water, power, and public lands who have a broad familiarity with field programs, policies, and procedures of the Department in addition to specialized knowledge of one or more particular fields.

In addition to serving as a central staff in the Office of the Secretary, the Staff performs a coordinating role in five departmentwide and interdepartmental areas—international affairs, resource economics, program planning, field coordination, and area redevelopment. In the central staff function, the Staff provides specialized advisory and consultative services to the secretariat upon request and provides central staff services to the Secretary and Under Secretary in program planning. Also, the staff services which the Resources Program Staff provides, involves assembly of data, preparation of necessary reports, and briefing.

Field coordination—River basin planning.—Operating through regional field committees made up of representatives of all bureaus, regional coordinators act as departmental coordinators on program and policy matters affecting more than one bureau. The regional coordinators chair the field committees and also serve as the Department representatives on interagency river basin committees comprised of Federal and State members.

Program planning.—Assists bureau program officers in developing long-range programs related to expected future natural resources requirements through establishment of comparable standards, criteria and projections. Relates long-range planning reports to annual budget requests.

International activities.—Coordinates Department's position on foreign trade in natural resource commodities; develops procedures for systematically providing technical assistance personnel to AID missions in underdeveloped countries. Prepares position papers for secretariat.

Resource economics.—Conducts special studies in natural resources economics, public works, investment, and returns; maintains liaison with Council of Economic Advisers, serves on Consumer Council, and coordinates Interior's economic research functions.

Area redevelopment.—Coordinates Interior's responsibilities under this new program through the bureaus on requests for project feasibility analysis and gives leadership to area and regional studies used as a basis for economic development.

In addition to serving as subject matter specialists to each of the above, the Resources Program Staff gives leadership in program development and special studies on new and unsolved problems facing the Secretary and the Department. Close liaison is maintained with the science adviser and the Interior Committee on Research and Development.

Administrative Management Services

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Assistant Secretary for Administration	$68,486	$82,800	$82,800	
(b) Office of Survey and Review	330,169	459,900	461,400	+$1,500
(c) Office of Management Operations	645,407	662,400	662,400	
(d) Division of Budget	147,837	189,000	204,000	+15,000
(e) Division of Management Research	149,902	197,700	222,100	+24,400
(f) Division of Personnel Management	334,532	371,500	371,500	
(g) Correspondence Management Control	30,055	32,400	33,800	+1,400
Total	1,706,388	1,995,700	2,038,000	+42,300

(a) Assistant Secretary for Administration, $82,800

Provision is made in this estimate for the salary and expenses of the Assistant Secretary for Administration and a small staff of four employees in his office. No increase is requested. The Assistant Secretary for Admin-

istration discharges the duties of the Secretary with respect to administrative management functions in the Department, and directs and supervises the offices and divisions listed above.

(b) Office of Survey and Review, $461,400

The estimate for the Office of Survey and Review includes an increase of $1,500 which is to provide for the replacement of one automobile. The automobile is a 1961 Studebaker Lark used in investigative work throughout the United States, and mileage exceeds 64,000 miles.

The Office of Survey and Review formulates and develops policies and procedures in the area of financial management and compliance activities. The scope of responsibilities consists of the development or review of methods utilized by the Department to conduct its business, including financial management systems and the departmentwide program of automatic data processing development, and supervision of the departmental auditing program, including special reviews and analysis of selected areas of administrative and program activities; responsibility for procurement and contracting policies and related functions of contract review and regulatory compliance; implementation of Federal policy of equal employment opportunity covering Federal employment and Federal contracts; direction of compliance activities including establishment and enforcement of ethical standards and related procedures in employee behavior and operating practices; and direction of departmental investigating activity.

Financing provided by Congress for fiscal year 1965 has enabled the Office of Survey and Review to move aggressively in the several important functions assigned to it. ADP planning has shown substantial progress and significant results have been achieved developing a joint-use center in Denver and perfecting a plan for ADP consolidation in Indian Affairs at Albuquerque.

The Office has spearheaded the Department's cost reduction efforts and has made several original contributions to the program. The Office developed a system of cost accounting for the Office of Saline Water demonstration plants and prescribed cost principles for an improved system to govern the adequacy of Bureau of Mines testing fees. Other important studies included a review of helium distribution methods, feasibility of direct royalty payments to Indians, regulatory requirements for the Office of Water Resources Research, and analysis of financial reporting for the Bonneville Power Administration and associated projects. The Office has also rendered valuable service in continuing contract review and general audit activity. The foregoing are only illustrative of the important top level review analysis and leadership role which the Office of Survey and Review is now performing and is equipped to carry on with expanding beneficial impact.

(c) Office of Management Operations, $662,400

The estimate for the Office of Management Operations provides for the salaries and expenses of 76 employees. No increase is requested for the fiscal year 1966.

The Office of Management Operations has primary staff responsibility for all administrative services, property management, records management (except directives and reports), radio communications, and emergency preparedness activities of the Department. It also provides centralized administrative services for bureau and office headquarters and other offices located in the Washington, D.C., metropolitan area. This includes space, printing, duplicating, library, health, communications, and storage and shipping of office supplies and forms. The Office also provides administrative services, such as fiscal, personnel, mail, file, messenger, and procurement for the Office of the Secretary, Office of the Solicitor, Office of Oil and Gas, Oil Import Administration, Oil Import Appeals Board, Office of Minerals and Solid Fuels, Office of Saline Water, Office of Geography, and Office of Coal Research.

Other activities include authentication of official records and fixing of charges for copies; maintenance of records of arms and accouterments made available by the Department of the Army; review and processing of requests to excavate and explore ruins or archeological sites and the gathering of artifacts and objects of antiquity on all lands, other than Indian lands, under the jurisdiction of the Department; receipt and dissemination of procurement policy statements, regulations, directives and related informational material originating from the General Services Administration, other agencies, or within the Department; and development of policy, procedures, and regulations for the security of classified

documents and materials, and the physical security of all types of facilities and equipment for which the Department has responsibility.

(d) Division of Budget, $204,000

The estimate for the Division of Budget includes an increase of $15,000 over the estimate for the current year. The total estimate provides for a staff of 14 employees and some travel and miscellaneous expenses. The Division has primary staff responsibility for the budget activities of the Department. It performs a liaison function with the Bureau of the Budget and the appropriation committees of the Congress on all appropriation matters for the Department. It also has general direction of the development, preparation, and execution of the Department's budget and participates in determinations relating to Department programs and evaluations of the programs in terms of budget requirements. This increase is needed to provide for full year financing of authorized positions and for the purchase of office equipment.

(e) Division of Management Research, $222,100

The estimate for the Division of Management Research provides for the salaries and expenses of a staff of 18 employees. Included is an increase of $24,400 over the estimate for the fiscal year 1965. The Division is responsible for providing leadership and staff assistance to programs for the improvement of management and organization throughout the Department. Specific assignments include: The conduct of organization and management surveys, incentive awards programs; committee management, work improvement programs, directives management, including coordination of the departmental manual, Secretary's orders, proposed Executive orders, Federal Register documents, Code of Federal Regulations, and other written instructional materials; and a management consulting service to the bureaus and offices on the above subjects as well as other problems of organization and management of operations, efficient utilization of manpower, and application of new techniques and equipment in carrying out Interior's programs.

The increase requested is in the following areas:

Management data system.—A GS–13 management analyst position, assisted by a GS–7 statistical clerk, is provided to develop and conduct a departmental management data system, for the compilation, evaluation, analysis, and interpretation of integrated management data related to Interior program goals and accomplishments. Major objectives of the management data system are to provide secretarial officers and top management throughout the Department with readily accessible factual and interpretative data for program and administrative decisions, a medium for documenting such decisions, and a base against which immediate and longer term progress can be measured and demonstrated. The system should also stimulate more extensive self-analyses of, and comparisons among, the bureaus in managing their operations and improving performance. Full utilization will be made of ADP computers in the development and operation of the system.

Management analyst development program.—In carrying out the management analyst development program there are some incidental expenses that should appropriately be financed at the secretarial level. Included are: (a) $1,500 for special travel and transportation, and (b) $3,500 for contractual services with universities to finance special training programs for individual participants and to help develop training inventories and materials for all of the participants in the program.

(f) Division of Personnel Management, $371,500

The estimate provides for a staff of 32 positions together with other expenses. No increase is requested for the fiscal year.

The Division of Personnel Management provides departmental leadership and staff guidance in the development and maintenance of a comprehensive personnel management program throughout the Department; develops policies, standards, objectives, and programs designed to establish and maintain an adequate, qualified, and efficient working force; provides general direction of a comprehensive program of personnel administration including position classification, labor relations, wage administration, employment, training, employee relations, inspection, personnel standards, procedures and records and safety and health; coordinates bureau personnel programs; and plans and stimulates studies of personnel management improvement including executive development and training.

(g) Correspondence management, $33,800

The estimate provides for a staff of three employees with other expenses. This unit was established for the purpose of improving the handling of important correspondence in the Department and to avoid delays in replying. It provides a means for facilitating the handling of correspondence directed to the Secretary, and for review of correspondence and other documents prepared for the signature of the Secretary. The departmental correspondence control officer is a staff assistant to the Assistant Secretary for Administration, and is responsible for compliance with deadlines on controlled correspondence at all levels. A small increase of $1,400 is requested for full-year financing of the staff.

General Services

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
General service	$147,174	$174,500	$177,600	+$3,100

General services, $177,600

This activity covers general expenses of the Office of the Secretary where it is not practicable to distribute to the various activities under this appropriation. Included are printing and binding, telephone, library, dispensary services, postage, travel of Members of Congress in connection with examination of field activities of the Department, and certain other general expenses.

The increase requested is related to the increase in employment provided for under other activities. For each additional employee, there is a general service cost of approximately $400. While this has been absorbed in the past, we cannot continue to do so. Costs have also increased and it is imperative that additional funds for general service costs be included along with requests for additional employees.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$3,880,535	$4,431,800	$4,556,600	+124,800
Reimbursements for emergency preparedness functions	−39,778	−66,800	−77,600	−10,800
Unobligated balance lapsing	14,268			
New obligational authority	3,855,025	4,365,000	4,479,000	+114,000
New obligational authority:				
Appropriation	3,858,400	4,110,500	4,479,000	+368,500
Transferred to "Operating expenses, Public Building Service," General Services Administration	−3,375			
Proposed supplemental due to civilian pay increases		254,500		−254,500
Object classification:				
11 Personnel compensation	3,192,244	3,689,100	3,778,900	+89,800
12 Personnel benefits	235,412	274,700	280,500	+5,800
21 Travel and transportation of persons	159,955	193,500	205,900	+12,400
22 Transportation of things	3,432			
23 Rent, communications and utilities	68,127	67,925	69,525	+1,600
24 Printing and reproduction	53,615	48,200	50,300	+2,100
25.1 Other services	23,354	40,075	43,575	+3,500
25.2 Services of other agencies	78,270	47,500	50,800	+3,300
26 Supplies and materials	30,768	38,100	38,700	+600
31 Equipment	34,631	32,700	38,400	+5,700
42 Insurance claims and indemnities	727			
Total obligations	3,880,535	4,431,800	4,556,600	+124,800

Obligations by activities and objects, fiscal years 1965 and 1966

	Fiscal year	Personnel compensation	Personnel benefits	Travel and transportation of persons	Rent, communications, and utility services	Printing and reproduction	Other services	Supplies and materials	Equipment	Total, other obligations	Total obligations
1. Departmental direction:											
(a) Office of the Secretary	1965	$370,400	$23,100	$35,000	----------	$5,000	$6,000	$3,000	$2,200	$74,300	$444,700
	1966	423,400	26,800	40,900	----------	7,000	7,500	3,500	4,200	89,900	513,300
(b) Office of the Under Secretary	1965	94,500	6,600	7,000	----------	1,700	1,300	600	500	17,700	112,200
	1966	94,500	6,600	7,000	----------	1,700	1,300	600	500	17,700	112,200
(c) Office of Information	1965	134,000	9,200	2,000	----------	700	3,000	3,000	500	18,400	152,400
	1966	134,000	9,200	2,000	----------	700	3,000	3,000	500	18,400	152,400
Total departmental direction	1965	598,900	38,900	44,000	----------	7,400	10,300	6,600	3,200	110,400	709,300
	1966	651,900	42,600	49,900	----------	9,400	11,800	7,100	5,200	126,000	777,900
2. Program direction and coordination:											
(a) Water and power	1965	268,200	19,200	17,000	----------	3,000	1,500	1,300	1,000	43,000	311,200
	1966	268,200	19,200	17,000	----------	3,000	1,500	1,300	1,000	43,000	311,200
(b) Mineral resources	1965	204,700	14,500	12,000	----------	800	2,175	1,500	400	31,375	236,075
	1966	204,700	14,500	12,000	----------	800	2,175	1,500	400	31,375	236,075
(c) Public land management	1965	222,800	14,700	15,000	----------	600	1,700	900	400	33,300	256,100
	1966	222,800	14,700	15,000	----------	600	1,700	900	400	33,300	256,100
(d) Fish and wildlife	1965	96,800	6,200	9,500	----------	2,200	700	700	500	19,800	116,600
	1966	96,800	6,200	9,500	----------	2,200	700	700	500	19,800	116,600
(e) Resources program staff	1965	475,400	31,800	32,000	$5,525	4,000	8,800	4,000	4,000	90,125	565,525
	1966	475,400	31,800	32,000	5,525	4,000	8,800	4,000	4,000	90,125	565,525
Total program direction and coordination	1965	1,267,900	86,400	85,500	5,525	10,600	14,875	8,400	6,300	217,600	1,485,500
	1966	1,267,900	86,400	85,500	5,525	10,600	14,875	8,400	6,300	217,600	1,485,500

3. Administrative management services:											
(a) Assistant Secretary for Administration	1965	70,400	4,900	5,500	----------	400	700	400	500	12,400	82,800
	1966	70,400	4,900	5,500	----------	400	700	400	500	12,400	82,800
(b) Office of Survey and Review	1965	388,100	27,100	27,500	3,000	1,000	5,000	2,500	5,700	71,800	459,900
	1966	388,100	27,100	27,500	3,000	1,000	5,000	2,500	7,200	73,300	461,400
(c) Office of Management Operations	1965	595,800	46,300	2,000	----------	6,300	4,000	7,000	1,000	66,600	662,400
	1966	595,800	46,300	2,000	----------	6,300	4,000	7,000	1,000	66,600	662,400
(d) Division of Budget	1965	170,600	11,900	2,000	----------	2,500	1,200	600	200	18,400	189,000
	1966	182,900	12,800	2,000	----------	2,500	1,200	600	2,000	21,100	204,000
(e) Division of Management Research	1965	180,500	12,500	3,000	----------	400	500	500	300	17,200	197,700
	1966	198,600	13,800	4,500	----------	400	4,000	500	300	23,500	222,100
(f) Division of Personnel Management.	1965	334,300	22,700	5,000	----------	3,500	3,500	2,200	300	37,200	371,500
	1966	334,300	22,700	5,000	----------	3,500	3,500	2,200	300	37,200	371,500
(g) Correspondence Management Control.	1965	29,200	2,100	----------	----------	----------	----------	1,100	----------	3,200	32,400
	1966	30,600	2,100	----------	----------	----------	----------	1,100	----------	3,200	33,800
Total administrative management services	1965	1,768,900	127,500	45,000	3,000	14,100	14,900	14,300	8,000	226,800	1,995,700
	1966	1,800,700	129,700	46,500	3,000	14,100	18,400	14,300	11,300	237,300	2,038,000
4. General Services	1965	----------	18,000	13,000	59,300	16,000	44,500	8,700	15,000	174,500	174,500
	1966	----------	18,000	13,000	60,800	16,000	46,100	8,700	15,000	177,600	177,600
Grand total, appropriation	1965	3,635,700	270,800	187,500	67,825	48,100	84,575	38,000	32,500	729,300	4,365,000
	1966	3,720,500	276,700	194,900	69,325	50,100	91,175	38,500	37,800	758,500	4,479,000
Reimbursements, Office of Emergency Planning.	1965	53,400	3,900	6,000	100	100	3,000	100	200	13,400	66,800
	1966	58,400	3,800	11,000	200	200	3,200	200	600	19,200	77,600
Grand total	1965	3,689,100	274,700	193,500	67,925	48,200	87,575	38,100	32,700	742,700	4,431,800
	1966	3,778,900	280,500	205,900	69,525	50,300	94,375	38,700	38,400	777,700	4,556,600

EXPLANATION OF PROPOSED LANGUAGE CHANGES

TITLE I—DEPARTMENT OF THE INTERIOR

GENERAL PROVISIONS

Section 101: Provide authority for the transfer of appropriations within this title to the Alaska Railroad for emergency reconstruction of facilities destroyed by fire, flood, storm, or other unavoidable causes.

When the earthquake struck Alaska on March 27, 1964, causing extensive damage to the roadbed, bridges, marine facilities, and buildings of the Alaska Railroad, it was determined that $1.8 million of the Railroad's accumulated cash reserve could safely be used to begin the necessary reconstruction work. Subsequently, $20 million was appropriated in the Deficiency Appropriation Act, 1964, toward the amount required to restore the facility to pre-earthquake standards. At the time of the earthquake, funds were available in various bureau appropriations which could have been used to begin the restoration work pending the supplemental appropriation had authority to utilize such funds existed.

Under the present wording of this section, the Secretary's authority for the transfer of appropriations in this title for emergency reconstruction work is limited to those within each bureau or office. Since the operations of the Alaska Railroad are financed out of but one fund, this authority is of no value in the case of emergency reconstruction situations affecting the Railroad, such as the one just experienced. Consequently, it is proposed to revise this section so as to provide that the Secretary may in the case of the Alaska Railroad only, make transfers to the Railroad from any available appropriation in this title for emergency reconstruction, replacement, or repair of its facilities or equipment which may be damaged or destroyed by fire, flood, storm, or other unavoidable causes. This will enable the Secretary to move rapidly in rebuilding and rehabilitating facilities damaged or destroyed by reason of such disasters.

Section 104: Provide authority for the hire of aircraft.

The following passage in a Comptroller General's decision to the Federal Aviation Agency (42 C.G. 708) carries the implication that hire of aircraft may be subject to question in the absence of specific authority.

"The Independent Offices Appropriation Act, 1963, approved October 3, 1962, Public Law 87–741 (76 Stat. 716), specifically provides that the appropriations made therein to the FAA shall be available for 'hire or passenger motor vehicles and aircraft' (76 Stat. 721). Hence, there is no question as to your authority to rent or lease aircraft."

We are unaware of any statutory restriction on the hire of aircraft.

Furthermore, it has been our position that since section 16(a) of Public Law 609, 79th Congress (authorizing certain administrative expenses in the Government service) refers to the submission of estimates for the purchase, maintenance, or operation only of such aircraft, it is unnecessary to indicate that appropriations would be used for hire of aircraft. However, since the Comptroller's decision may be interpreted to mean that, since some agencies have the specific authority, its absence in the case of other agencies may imply lack of authority.

Consequently, since several bureaus of the Department have need on occasion to hire aircraft in connection with their field activities, it is proposed to add "hire" before the words "operation and maintenance of aircraft" in this section so as to avoid the possibility of exception being taken to the use of appropriated funds for this purpose.

Section 104: Increase in authorization and limitation on amounts for consultant services.

It is requested that the maximum per diem rate for consultants be increased from $75 to $100, and the total amount from $175,000 to $230,000.

Beginning with the fiscal year 1958, the Interior Appropriation Acts have prescribed a maximum of $75 per day for the services of consultants, a reduction from the maximum rate of $100 per day authorized in acts for several years prior to that time. It has become extremely difficult to secure consulting services under this ceiling. This is especially so in view of the higher pay scales now in effect for Government employees. For example, in 1958 the top salary payable under grade GS–18 was $67.36 a day. The top salary payable under the same grade is now $94.24. Consequently, the $75 that may be paid under the present consultant authorization falls far short of the maximum daily rate payable to Federal employees under the Classification Act.

As a result persons with the necessary experience and qualifications needed for consultation on many of the Department's technical problems expect to

receive more than this amount. They are not interested unless their compensation is commensurate with that which they ordinarily receive. Often they accept such assignments as an accommodation to the Department.

While authority is sought to pay a maximum rate of $100 a day, it is intended that the maximum rate be paid only when topflight consultants are employed in connection with the most difficult types of engineering, scientific, or other work.

At the same time, it is proposed to increase the total amount that may be expended annually for consultant services from $175,000 to $230,000. The Department makes every effort to limit the employment of consultants to those cases which are absolutely necessary and in which the services of an impartial adviser are essential. Situations requiring consultants which cannot be foreseen do arise, however, and unless the total limitation is increased the work of the Department could be seriously handicapped. These consultants are used in connection with special studies or reports requested by Congress; at other times it may be in connection with organizational or program problems affecting the Departmental operations, and there should be some margin for taking care of the problems which cannot be foreseen. Very strict control is maintained over the employment of consultants, secretarial approval being required in each case, and the Department will continue to hold expenditures for this purpose to as low an amount as practicable.

STATEMENT OF ASSISTANT SECRETARY BEASLEY

Chairman HAYDEN. Secretary Beasley, you may file your written statement for the record and highlight it for the committee.

Mr. BEASLEY. Thank you, Mr. Chairman, I will file the statement and explain briefly the amounts that are being requested in the 1966 budget for the Office of the Secretary.

(The statement referred to follows:)

STAFFING OF SECRETARY'S SCIENCE ADVISER

Mr. Chairman and members of the committee, the fiscal year 1966 budget request for the Office of the Secretary is $4,479,000. This is an increase of $114,000 over 1965. The major portion of the increase would be used to strengthen the staffing of the Secretary's Science Adviser. Provision is also made for additional staffing for the Division of Management Research and for current funding deficiencies in other areas.

There has been a continual growth and change in the programs of the Department to meet changing demands on the natural resources. The Secretary and his supporting staffs must provide adequate general direction, guidance, and coordination, both within the Department and with other agencies concerned with our programs. Staffing must be adequate to provide the necessary leadership to accomplish efficient administration.

As Secretary Udall emphasized in his statement before this committee earlier this month, the budget estimates for this Department reflect an intensive effort to fulfill our program responsibilities with maximum economy—both in funds and use of manpower.

An increase of $68,600 and five positions is requested for the Office of the Science Adviser to the Secretary. Actually, this is a net staffing increase of four, as one of the positions included in the increase is currently funded by assessment to other bureaus. The staff will be increased from four to eight positions.

This office was established in 1961 to assure more adequate coordination and improvement of the scientific programs of the Department. Good progress has been made in areas such as coordination of water resources research, studies to combat pollution, development of policies on use of pesticides, design of a national effort in oceanography and improvement in understanding problems of storage and dissemination of scientific information. The Department now participates fully in the science information exchange.

More effort must be devoted to determination of the adequacy of the overall research program needed to accomplish the Department's mission in natural resources development and conservation. We need to reappraise the adequacy and distribution of both existing and planned research facilities. We also must be certain that the research and development effort effectively supports the

programs of this Department and of the other departments that may be involved. These research programs involve most fields of the earth and life sciences, engineering, and social sciences.

An increase of $24,400 and two positions is requested for the Division of Management Research. This Division is responsible for providing leadership and staff assistance to programs for the improvement of management and organization throughout the Department. The proposed staffing increase would be used to develop and conduct a departmental management data system for Interior program goals and accomplishments.

During the past year this Department made significant progress in improving the direction, guidance, and coordination of its programs and activities. We could cite numerous examples; however, we feel that one of the most significant accomplishments has been in improvement of manpower utilization and reduction of costs. As Secretary Udall explained in his statement before this committee, our estimated employment for June 30, 1966, is almost 700 less than was originally forecast for June 30, 1964, even though several new programs have been authorized in addition to expansion of existing programs during these 2 years. This didn't just happen—it resulted from the leadership and direction of the Secretary and his staff. Similarly, it has been possible to partially offset increased program funding needs by identifying and eliminating avoidable costs and seeking out opportunities for improved management practices.

Since the written justification describes in detail the nature of and need for the additional positions and funding increases, I have not gone into detail in my opening remarks.

Language is proposed to replace one vehicle used in investigative work which has been driven over 64,000 miles.

There are several proposed language changes included in the general provisions.

Section 101.—One is to authorize the Secretary to transfer funds under emergency conditions from other appropriations to the Alaska Railroad. The existing authority limiting transfers between appropriations within a bureau could not be used in the recent emergency resulting from the Alaska earthquake since the Alaska Railroad has only one fund.

Section 104.—Another is to make clear that the Department has authority to hire aircraft. Although we are unaware of any statutory restriction on the hire of aircraft, it is requested that this authority be clarified.

It is proposed that the limitation on consultants be raised from $75 to $100. We are finding it more and more difficult to secure the best qualified consulting services under the $75 ceiling and often those that do accept assignments do so as an accommodation. This is especially so in view of the higher pay scales now in effect for Government employees. For example, in 1958 the top salary payable under grade GS–18 was $67.36 a day. It is now $94.24 or $19.24 more than the $75 maximum payable under the present limitation.

It is also requested that the limitation on the total amount that can be paid annually for consultant services be raised from $175,000 to $230,000. This increase is to provide $30,000 for consultants for the recently authorized Office of Water Resources Research and $25,000 for the increased rates proposed as a result of increasing the limitation from $75 to $100 per day. It is not intended to pay the maximum in every case, but only when topflight services are required in connection with the most difficult types of engineering, scientific, or other work. In 1964, for example, out of 84 consultants employed, only 33 were paid the maximum daily rates of $75; 10 averaged $60; and 41 were paid $50 or less.

I have a more detailed statement for the record.

STATEMENT IN SUPPORT OF INCREASES IN LIMITATION ON PAYMENTS FOR CONSULTANT SERVICES—SECTION 104, GENERAL PROVISIONS, DEPARTMENT OF THE INTERIOR

We are proposing an increase in the limitation on the maximum per diem rate that may be paid consultants from $75 to $100, and the total amount that may be used for this purpose from $175,000 to $230,000.

This authorization is most important to enable the Department to obtain the services of consultants in the highly specialized fields for which it is responsible. We are finding it more and more difficult to secure the best qualified consulting services under the $75 ceiling and often those that do accept assignments do so as an accommodation. This is especially so in view of the higher pay scales now in effect for Government employees. For example, in 1958 the top salary

payable under grade GS–18 was $67.36 a day. It is now $94.24 or $19.24 more than the $75 maximum payable under the present limitation.

During the past year consultants were employed on a variety of problems such as engineering studies bearing upon Federal interests in connection with the preparation of river compacts; protection of Indian rights in the adjudication of the waters of the Washita River, Okla.; Indian education problems; development of plans to transfer certain public lands to States; special mining and mineral research problems, and design of transformers and power transmission structures. For these types of problems we should be in a position to pay a per diem rate higher than is now possible in order to attract the most qualified people. It is not intended to pay the maximum in every case, but only when topflight services are required in connection with the most difficult types of engineering, scientific, or other work. In 1964, for example, out of 84 consultants employed, only 33 were paid the maximum daily rate of $75; 10 averaged $60; and 41 were paid $50 or less.

On the basis of the number of consultants employed for the fiscal years 1962, 1963, and 1964, we estimate that the comparable payment of $100 a day to those receiving $75 would require an additional $16,000, and an increase of 10 percent to those receiving less than $75 would require an additional $9,000. These two amounts, together with an estimated $30,000 for consultant services for the newly created Office of Water Resources Research to administer the various water research funding arrangements made pursuant to the Water Resources Research Act of 1964, when added to the existing total limitation of $175,000 bring the need for the total limitation on the amount that may be spent annually for consultants to $230,000.

We make every effort to limit the use of consultants. Very strict control is maintained over their employment, Secretarial approval being required in each case. The wide fluctuation in the total amount expended for consultants is indicative of our close supervision and control to assure that only those persons are employed that are fully qualified. In 1961, there was unobligated some $18,000, in 1962 some $42,000, in 1963 some $9,000. We shall continue to hold expenditures for this purpose as low as practicable. Situations do arise, however, which cannot be foreseen and there should be some margin for taking care of problems which are not anticipated.

FUNDS FOR GENERAL DIRECTION OF THE DEPARTMENT

Mr. BEASLEY. This is the portion of the estimate that provides funds for the general direction of the Department of the Interior including the Secretariat, the program staff, and the division of information.

As you have indicated, the estimate for 1966 is $4,479,000. When the adjustment is made for the increased pay costs the increase is $114,000. Of this increase $68,600 is for the Office of the Science Adviser, $42,300 for the administrative management services, and $3,100 for general services.

MANAGEMENT RESEARCH

I have with me the acting science adviser who would be glad to respond to any questions the committee may have regarding that estimate. With respect to the $42,300 requested for administrative management services, $24,400 is for the Division of Management Research. This is to provide two additional positions needed to improve the management services of the department including management data collection for the use of the top officials of the department.

OFFICE OF SURVEY AND REVIEW

There is an increase of $1,500 for the Office of Survey and Review to replace one automobile used by the investigative force. This automobile has met all of the requirements for replacement. It has traveled in excess of 64,000 miles.

DIVISION OF BUDGET

The increase of $15,000 for the Division of Budget is to provide funds to finance the authorized positions which we are unable to pay now because of the increasing salaries that we are required to pay under the within-grade promotion requirements.

OFFICE OF SCIENCE ADVISER

Chairman HAYDEN. As you have said, the principal increase is for additional personnel in the Office of the Science Adviser. You have indicated a need for three senior scientists. Do you anticipate any difficulty in securing the personnel that you need at the salaries which you will be able to pay?

Mr. BEASLEY. Mr. Chairman, with your permission, I would like Mr. Eckles to respond to that question.

Mr. ECKLES. Mr. Chairman, we have in mind the addition of two specialists to the present staff, in addition to continuing the salary of one who is now on the payroll. The two additional will be specialists in the handling of scientific technical information and we are at this time filling the position of resource analyst. We feel that we will be able to recruit adequately at the pay grade specified.

SAVINGS THROUGH UTILIZATION OF EXCESS PROPERTY

Chairman HAYDEN. Last year the committee in its report urged maximum use of excess property available through the General Services Administration and asked that this year the committee be advised of savings accomplished through the use of such property, and that this year's use of excess property be compared with such use in previous years.

What can you report to the committee?

Mr. BEASLEY. We followed the committee's suggestion that we increase our utilization of excess property. Mr. Chairman, I am delighted to report that we have had some success in this.

Our utilization has increased by 35 percent which I think represents some achievement in this area. In region 3 of the General Services Administration, the Interior Department became a member of what they refer to as "The Million Dollar Club."

We were one of the few agencies to be cited by the General Services Administration for utilization of excess property. I will be very glad to insert in the record further statements showing the excess property that we have acquired in the last 4 fiscal years.

Chairman HAYDEN. That will be valuable information. You may include it.

(The statements referred to follow:)

EXCESS PERSONAL PROPERTY

Last year, in Senate Report 971 of April 4, 1964, the committee urged maximum use of excess property available through the General Services Administration, and requested that when fiscal year 1966 budget estimates are justified that the committee be advised of accomplishments in the use of such property compared with such use in prior years. The following is a summary of property acquisition by bureau for the years 1961 through 1964:

UTILIZATION OF EXCESS PERSONAL PROPERTY (AS REQUESTED IN REPT. NO. 971 OF APR. 4, 1964, BY THE COMMITTEE ON APPROPRIATIONS OF THE SENATE)

Bureau	Fiscal year 1961	Fiscal year 1962	Fiscal year 1963	Fiscal year 1964
Bureau of Land Management	$2,689,240	$1,756,176	$685,275	$374,744
Bureau of Indian Affairs	5,668,682	7,296,562	3,860,319	10,243,516
National Park Service	592,855	677,840	288,599	412,757
Bureau of Outdoor Recreation			1,462	3,755
Office of Territories (including Virgin Islands Corporation)	1,715,656	2,207,670	554,364	301,097
The Alaska Railroad	552,409	580,696	239,470	420,802
Geological Survey	369,940	944,605	3,400,000	3,656,189
Bureau of Mines	918,491	1,037,650	1,453,054	1,409,659
Bureau of Commercial Fisheries	955,980	432,383	[1] 2,980,821	325,535
Bureau of Sport Fisheries and Wildlife	3,104,891	2,404,029	2,075,922	3,780,593
Bureau of Reclamation	624,223	1,342,043	885,538	2,145,398
Bonneville Power Administration	146,453	553,676	954,642	416,084
Southeastern Power Administration				184
Southwestern Power Administration	9,812	2,214		
Office of Saline Water	[2]	[2]	14,944	4,530
Office of the Secretary and other departmental offices				
Total	17,348,632	19,235,544	17,394,410	23,494,843

[1] Includes 3 vessels acquired from the Navy Department for $2,578,696.
[2] No record of acquisitions.

EXCESS PROPERTY ACQUIRED BY DEPARTMENTAL BUREAUS

In fiscal year 1964 the Department made use of $23,494,843 in excess personal property. This compares with $17,394,410 in 1963 (up 35 percent) and with $19,235,544 and $17,348,632 for 1962 and 1961, respectively. The amount shown for 1963 included, as footnoted in the table, three vessels acquired from the Navy Department by the Bureau of Comercial Fisheries valued at $2,578,696—an unusual one-time transaction not representative of the normal excess property availabilities. Without this vessel arrangement the improvement over 1963 is even more marked.

Much of the excess property acquired by departmental bureaus involves a wide range of equipment and supplies for both project and office needs. This varies as to the time of need and the then current surplus stores available. It is the policy of this Department to make full utilization of such surplus property to effect maximum economy in meeting program objectives. Following are some details relative to those bureaus having the greater amount of surplus utilization during fiscal year 1964.

The Bureau of Indian Affairs obtained $10,243,516 in property made up mainly of tractors ($2.5 million), earthmoving equipment ($1.75 million), rock crushing plants ($300,000), landing mats used in Alaska ($75,000), heavy duty trucks ($3.5 million), the remainder being miscellaneous building equipment, kitchen equipment, and a wide assortment of other items.

The Bureau of Sport Fisheries and Wildlife acquired property worth $3,780,593 consisting principally of heavy equipment (crawler tractors, bulldozers, draglines and the like) as a result of the accelerated public works program.

Property valued at $3,656,189 was taken over by the Geological Survey. Their yearly total includes items for the astrological projects (mapping of the moon, simulated space flight studies, and astronaut training) financed by NASA, and AEC's Nevada Test Site project where they have obtained electronic and photographic equipment, including tracking and direction systems, drone cameras, power supplies, etc., originally purchased at costs totaling some $1.6 million.

The Bureau of Reclamation acquired $2,145,398 during the year of which more than $1.2 million was for the U.S. Army radar equipment for the weather modification program.

Molybdenum and columbium were purchased from Air Force Procurement (Afpro), Seattle, with a value of $449,296 out of total acquisitions amounting to $1,409,659 by the Bureau of Mines; or a little less than purchased from surplus property supplies the year previously. The remainder of Bureau of Mines acquisitions were miscellaneous items of all types and descriptions.

INCREASE OF LIMITATION ON CONSULTANT PAY

Chairman HAYDEN. On page 27 of the justification, it is noted that the limitation on payment to consultants is to be increased from $75 to $100 per day and that the total amount for this purpose is increased from $175,000 to $230,000 per annum.

Will you discuss the reason for asking for these increases?

Mr. BEASLEY. At one time, the Department had authority to pay up to $100 a day for experts and consultants. This was reduced several years ago by the Congress to $75 a day. We find that the $75 a day is inadequate and is actually below the maximum daily rate that could be paid if there were no amount specified.

We are asking that this be brought more in line with the daily rate under the grade structure of the Classification Act which is something like $94 per day.

We are asking for $100 a day. Frequently, in obtaining the services of consultants, they get much below their going rate. They do it as a service. But on some occasions they are unwilling to serve us at that $75 rate. We think it should be increased to $100.

The increase in the total amount that may be expended for consulting services is due to two things, one, the increase that would be required if the $100 per day rate is approved and, second, we will be called upon to meet heavy expenditures for consulting services by reason of the Water Resources Research Act.

As you know, that act requires the Secretary to utilize the services of consultants in the program with the States under the grants and under the research contracts that we enter into.

Chairman HAYDEN. Do you have some other statement to make?

Mr. BEASLEY. I believe, Mr. Chairman, that explains the items which I am here to discuss.

Chairman HAYDEN. You have told your story very briefly. Thank you.

We will next hear from the National Park Service.

FRIDAY, FEBRUARY 19, 1965.

NATIONAL PARK SERVICE

STATEMENT OF GEORGE B. HARTZOG, JR., DIRECTOR; ACCOMPANIED BY CLARENCE P. MONTGOMERY, ASSISTANT DIRECTOR; HOWARD W. BAKER, ASSISTANT DIRECTOR; T. SUTTON JETT, REGIONAL DIRECTOR; HAROLD G. SMITH, CHIEF OF PROGRAMS; CARL O. WALKER, CHIEF OF BUDGET AND FINANCE; AND SIDNEY D. LARSON, DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR

1966 BUDGET ESTIMATES AND SUMMARY TABLES

Chairman HAYDEN. There will be placed in the record a summary table of appropriations, revenues, and visitors to the National Park facilities for the years 1933 through 1966; a table showing general fund receipts deposited to the credit of the United States during fiscal years 1964 through fiscal year 1966; and a comparative summary of the 1965 appropriations with the 1966 estimates.

(The tables referred to follow:)

Summary of Appropriations, Revenues, and Visitors

Year	Appropriations			Revenues	Visitors (calendar year)
	Operating funds	Capital improvements	Total		
1933	$2,816,620	$8,004,000	$10,820,620	$628,182	3,481,590
1934	2,518,190	2,567,600	5,085,790	729,153	6,337,206
1935	6,799,540	5,000,000	11,799,540	905,935	7,676,490
1936	9,110,780	7,585,500	16,696,280	1,136,026	11,989,793
1937	11,198,395	6,635,000	17,833,395	1,398,692	15,133,432
1938	11,052,834	10,618,546	21,671,380	1,508,127	16,331,467
1939	12,202,047	13,832,650	26,034,697	1,567,334	15,530,636
1940	12,954,267	8,144,015	21,098,282	1,928,078	16,755,251
1941	4,622,649	4,747,381	9,370,030	2,179,119	21,236,957
1942	5,715,005	8,894,770	14,609,775	2,080,702	9,370,969
1943	5,079,342	408,023	5,487,365	1,061,992	6,828,420
1944	4,563,560		4,563,560	807,601	8,339,775
1945	4,736,810	4,000	4,740,810	824,078	11,713,852
1946	5,457,125	30,250	5,487,375	1,592,947	21,752,315
1947	11,032,334	14,995,621	26,027,955	2,923,587	25,534,188
1948	9,660,055	968,000	10,628,055	3,303,328	29,858,828
1949	11,542,299	2,505,350	14,047,649	3,467,606	31,726,402
1950	15,150,982	14,953,868	30,104,850	3,527,607	33,252,589
1951	16,288,200	17,687,500	[1] 33,975,700	3,534,372	37,106,440
1952	16,878,564	11,370,000	28,248,564	3,568,094	42,299,836
1953	18,131,920	15,030,410	[1] 33,162,330	4,190,643	46,224,794
1954	18,437,550	15,416,300	33,853,850	4,037,551	47,833,913
1955	18,494,095	14,199,895	[2] 32,693,990	4,914,239	50,007,838
1956	20,787,000	28,079,300	48,866,300	5,065,784	54,923,443
1957	22,970,000	45,050,000	68,020,000	5,658,040	59,284,869
1958	[3] 27,581,530	48,400,000	75,981,530	5,744,920	58,676,953
1959	29,962,600	50,000,000	79,962,600	5,688,138	62,812,000
1960	32,682,000	46,735,000	79,417,000	5,685,176	[4] 72,287,800
1961	37,890,000	51,528,000	89,418,000	5,660,349	79,039,800
1962	[5] 42,223,851	[6] 67,976,000	110,199,851	5,841,761	88,457,100
1963	[7] 48,017,054	[8] 72,775,500	120,792,554	6,450,559	94,092,900
1964	[9] 51,379,829	61,697,000	113,076,829	7,085,877	102,475,145
1965	[10] 55,384,000	[11] 71,406,600	126,790,600	[12] 5,846,650	[12] 110,000,000
1966 (estimated)	60,391,000	60,327,000	120,718,000	1,476,950	117,500,000

[1] Net appropriations after reductions pursuant to law.
[2] Excludes $131,600 transferred to Office of Solicitor, and includes $600,000 included in Second Supplemental Appropriation Act, 1955 for the Jones Point Bridge.
[3] Includes $390,094 appropriated plus $134,436 transferred from other agencies for pay increases; and excludes $23,000 transferred to Office of Territories.
[4] New basis for counting visitors was implemented at beginning of 1960. Comparable figure on old basis of counting is 65,827,000.
[5] Includes $1,025,000 supplemental appropriations and excludes $28,000 transferred to Bureau of Outdoor Recreation and $9,649 to General Services Administration.
[6] Includes $3,500,000 supplemental appropriations.
[7] Includes $1,629,750 supplemental appropriations, and excludes $1,101,096 transferred to Bureau of Outdoor Recreation, and $600 to General Services Administration.
[8] Includes $5,000,000 supplemental appropriations, and excludes $2,000,000 withdrawn for Bureau of Indian Affairs.
[9] Includes $625,000 supplemental appropriations and excludes $72,671 transferred to General Services Administration for the Franklin Delano Roosevelt Library.
[10] Includes proposed supplemental of $729,000 for pay increase costs.
[11] Includes $15,033,000 supplemental appropriations.
[12] Estimated.

General Fund Receipts Deposited to the Credit of the U.S. Treasury During the Fiscal Year 1964 and Estimated for the Fiscal Years 1965 and 1966

	Actual, 1964	Estimated	
		1965	1966
Automobile, admission, guide, and elevator fees	$5,786,876	$4,417,000	
Business concessions	615,729	753,300	$803,400
Rents and royalties	337,004	333,900	325,900
Permits, privileges, and licenses	30,777	33,000	35,000
Sale of power and other utilities	96,660	98,000	100,000
Sale of Government property and products	193,043	190,400	191,600
Sale of services	2,674	2,750	2,750
Other fees and forfeitures	1,610	1,300	1,300
Reimbursements	20,392	16,000	16,000
Gifts and contributions	1,112	1,000	1,000
Total	7,085,877	5,846,650	1,476,950

COMPARATIVE SUMMARY OF THE AMOUNT AVAILABLE FOR 1965 WITH THE 1966 ESTIMATES

Appropriation and activity	Estimated available 1965	Estimate, 1966	Increase (+) or decrease (−)
Management and protection:			
Management of park and other areas	$24,633,000	$27,766,000	+$3,133,000
Forestry and fire control	1,533,000	1,603,000	+70,000
Soil and moisture conservation	205,000	205,000	
Park and recreation programs	2,957,000	3,089,000	+132,000
Concessions management	534,000	552,000	+18,000
Subtotal	29,862,000	33,215,000	+3,353,000
Maintenance and rehabilitation of physical facilities:			
Roads and trails	9,311,000	9,825,000	+514,000
Buildings, utilities, and other facilities	13,789,000	14,835,000	+1,046,000
Subtotal	23,100,000	24,660,000	+1,560,000
Construction:			
Buildings, utilities, and other facilities	28,327,700	25,827,000	−2,500,700
Acquisition of—			
Lands	13,233,000		−13,233,000
Water rights	480,000	500,000	+20,000
Roads and trails	365,900		−365,900
Subtotal	42,406,600	26,327,000	−16,079,600
Construction (liquidation of contract authorization):			
Parkways	11,500,000	9,000,000	−2,500,000
Roads and trails	17,500,000	25,000,000	+7,500,000
Subtotal	29,000,000	34,000,000	+5,000,000
General administrative expenses:			
Departmental expenses	1,468,000	1,532,000	+64,000
Regional office expenses	954,000	984,000	+30,000
Subtotal	2,422,000	2,516,000	+94,000
Grand total	126,790,600	120,718,000	−6,072,600

Chairman HAYDEN. Mr. Hartzog, if agreeable, will you please file your written statement for the record and summarize it as you wish.

(The statement referred to follows:)

STATEMENT OF DIRECTOR HARTZOG

Mr. Chairman and members of the committee, thank you very much for the opportunity to discuss with you, today, the plans and programs of the National Park Service and to answer questions concerning the estimates of the Service's 1966 fiscal year fund requirements which are now before you for consideration.

This is the second year I have appeared before you are Director of the National Park Service. Before getting into a discussion of the Service's 1966 fund requirements, I want to pause, briefly, to express my deep appreciation to this committee for its interest, understanding, and support of the conservation programs assigned to the National Park Service by the Congress. For myself and my colleagues in the Service, I wish to tell you that we are proud to work with you toward meeting our mutual responsibilities to the American people. I know you share with us justifiable pride in the accomplishments that have been attained in recent year under the Mission 66 program and in trying wisely, and with determination, to meet the ever-greater challenges that lie ahead.

We have distributed to each of you a brochure about the organization, management, objectives, and principal functions of the National Park Service. The brochure gives a bird's-eye view of the Service and its varied programs and we hope it will serve as a handy reference document for you. Briefly, I would like to call your attention to certain sections of it.

There is a brief introduction to the National Park Service on page 1 which points out, among other things, that the Congress has assigned the Service a most vital and stimulating mission in the Nation's total conservation effort. This mission is to manage the superlative scenic, historic, and recreational

resources that comprise the national park system for the continuing benefit and enjoyment of all the people. The National Park Service, therefore, is a people-serving agency. It is also a resource-managing agency.

In his memorandum of July 10, 1964, Secretary Udall clarified the management principles of the National Park Service and defined for it a heightened responsibility to meet the challenges of a rapidly changing world. His memorandum is quoted on page 7 of the brochure. Also, in that memorandum he defined the long-range objectives of the Service. The long-range objectives and goals of the National Park Service are identified and discussed in a booklet entitled "Road to the Future," included in the appendix of the brochure.

To strengthen our day-to-day management we have developed working annual goals for the Service which are listed on page 13.

I call your special attention to the fact that most of the seasonal employment of the Service occurs in the parks and is closely tied to the periods of heavy visitation, as indicated on page 11 of the brochure.

It is estimated that park visits (including National Capital Parks) will exceed 126 million in 1966 as compared to more than 111 million in 1964 and an estimate of 119 million in 1965. These estimates for 1965 and 1966 were made prior to the President's suggestion and encouragement to the American people to see their own country now. With this type of emphasis on seeing America first, we can expect a significant increase in the number of visits to the parks. For that reason I feel the estimates may be somewhat understated.

In the 1966 budget proposals before you, we have again given energetic attention to the objectives announced by President Johnson over a year ago with regard to improving manpower utilization, effecting economies, increasing productivity, and improving services. To this end, we shall continue to further those programs which are aimed at reducing costs and increasing efficiency of operations.

Our programs for 1966, particularly those involving increases, have received very thorough and even critical review at all levels up through the Bureau of the Budget.

ESTIMATES, 1966

The estimates under consideration total $120,718,000. This is a net decrease of $6,072,600 under the amount of $126,790,600 available for 1965. The amount indicated as available for 1965 includes a total of $729,000 for increased pay increase costs for classified employees which could not be absorbed in fiscal 1965, and which is proposed for inclusion in a 1965 supplemental estimate. The amounts represent an increase of $5,007,000 over the amount available for 1965 for operating programs and a decrease of $11,079,600 for capital programs.

OPERATING PROGRAMS

The appropriation items which finance the operating programs, the amounts requested for 1966, and the increases provided for in the estimates are as follows:

Appropriation item	1966 request	Increase
Management and protection	$33,215,000	$3,353,000
Maintenance and rehabilitation of physical facilities	24,660,000	1,560,000
General administrative expenses	2,516,000	94,000
Total	60,391,000	5,007,000

The 1966 budget provides modest increases in operating funds and staffing for the Service, primarily to meet requirements incident to the activation of new park areas and the increasing public use of the parks. In addition to the need to recognize and plan for serving the increasing number of visitors, including those in the new park areas, the budget also makes provision for, as it has for the past several years, increased fund requirements for operating and maintaining the many new facilities that are being completed in the parks.

The increase of $4,913,000 requested in the "Management and protection" and "Maintenance and rehabilitation of physical facilities" appropriations consists of $104,000 for important functions (recreation planning) other than those concerned with the operation of park areas; $478,400 to cover wage rate increases in effect as of August 15, 1964; and $4,910,600 for various general needs benefiting the park operating programs. The increase also reflects a program savings

of $450,000 resulting from organizational realinements, and a reduction of $130,000 in the funds required for the U.S. share of the cost of operating Roosevelt Campobello International Park, Canada.

Increases in park programs for various general needs include $884,000 for operations in 11 new park areas, 9 of which were authorized in the 2d session of the 88th Congress and 2 recreation areas to be operated under cooperative agreements between the National Park Service and the Bureau of Reclamation. These areas are: Allegheny Portage Railroad National Historic Site, and Johnstown Flood National Memorial, Pa.; Canyonlands National Park, Utah; Fire Island National Seashore, N.Y.; Fort Bowie National Historic Site, Ariz.; Fort Larned National Historic Site, Kans.; John Muir National Historic Site, Calif.; Ozark National Scenic Riverways, Mo.; Saint-Gaudens National Historic Site, N.H.; Bighorn Canyon Recreation Area project, Montana-Wyoming; and Curecanti Recreation Area project, Colorado. Increases of $2,962,600 are also included for strengthening operations in the more than 200 other park areas of the system.

Also in the category of increases for the benefit of park operating programs is an item of $87,000 for strengthening the U.S. Park Police force for the National Capital Park areas; $100,000 for commencing a program for surveying and monumenting park boundaries; $100,000 for strengthening the motion picture and audiovisual program; $50,000 for continuing natural science studies; $50,000 for initiating a park operations study program; $111,000 for a minimum staff of safety personnel in the regional and Washington offices; $138,000 for strengthening the land-use functions in the regional offices; $225,000 for paying service-connection charges incident to obtaining commercial electric and telephone service in some of the isolated park areas; $90,000 for more adequate fire protection services in the parks; $70,000 for production of increased quantities of informational publications to meet heavy visitor demands; $18,000 for strengthening the concessions management program; and $25,000 for additional employee compensation fund payments to the Department of Labor.

The increase of $94,000 for general administrative expenses provides for meeting increased costs of general expenses of the administrative staffs in the Washington and regional offices incident to the additional workload that has taken place since the commencement of Mission 66; and to intensify the management analysis and statistical functions in those offices.

The total increased staffing provided for in the 1966 budget under the operating appropriation items is 155 permanent full-time positions and 236 man-years of temporary employment.

CAPITAL PROGRAMS

Our capital program estimates include $26,327,000 for construction and $34 million for construction (liquidation of contract authorization).

The construction estimate provides for the following:

Buildings, utilities, and other facilities	$25,827,000
Acquisition of water rights [1]	500,000
Total	26,327,000

[1] The 1966 fiscal year fund requirements for acquisition of lands is not included in this estimate. It is included in the fiscal 1966 budget of the Bureau of Outdoor Recreation to be funded from the land and water conservation fund. This action accounts for the reduction in the budget below the 1965 level as indicated on p. 3 of this statement under the heading "1966 Estimates."

The construction (liquidation of contract authorization) estimate provides expenditure authority for liquidating obligations incurred and to be incurred under the contract authorizations for parkways and roads and trails construction. The contract authorizations for parkways and roads and trails construction programs for 1966 are in the amounts of $9 million and $24,274,000.

The estimate of $25,827,000 for buildings, utilities, and other facilities includes large fund increments for facilities in such areas as Independence National Historical Park ($997,800); Grand Canyon National Park ($1,547,000, including $770,000 for a hospital building); Lake Mead National Recreation Area ($849,500); Yellowstone National Park ($1,853,700); and Yosemite National Park ($971,800). As the need for public-use facilities is critical in some of the newer areas, such as Cape Cod, Padre Island, and Point Reyes National Seashores, an appreciable amount ($1,551,900) is included in the estimate for these areas. The estimate also includes $2,042,000 for facilities in 10 of the newly authorized park areas.

Some of the major projects included in the parkways construction program are: $2,273,500 for starting construction on a 7-mile section of the Foothills Parkway in Tennessee from State Highway 73 and the Little River easterly to Carr Creek—this new work is adjacent to the 17-mile unit in various stages of construction on Chilhowee Mountain between Highway 73 and Chilhowee, the western terminus of the parkway; and $2,113,200 for continuing construction of the Natchez Trace Parkway in Lewis County, Tenn., from State Highway 99 to the Keg Spring Road near the Hickman County line, for a distance of about 7 miles—this construction is adjacent to a 5-mile unit already in various stages of construction.

Some of the major projects included in the roads and trails construction program are: $1,162,000 for continuing construction of the Bryson-Monteith Branch Road in Great Smoky Mountains National Park; $1,105,000 for reconstructing 6 miles of the North-South Road in Wind Cave National Park; $1,025,000 for Canyonlands National Park for constructing or improving portions of an approach road from Dugout Ranch to Squaw Flat and for portions of roads inside the park; $947,000 for the Wetherill Mesa Road (8.85 miles) in Mesa Verde National Park; $845,000 for a portion of an entrance road (3.5 miles) at Point Reyes National Seashore; $754,000 for surfacing and paving Big Oak Flat Road from Crane Flat to Carl Inn (8 miles) in Yosemite National Park; and $936,000 for grading and drainage on 12 miles of road from U.S. 40 to Deerlodge Park in Dinosaur National Monument.

I would like to mention at this point that in planning, designing, and constructing park improvements, we are placing increasing emphasis on the fact that proper development can actually enhance the opportunity for preservation. A simple example is that of a surfaced footpath through a fragile area, such as the boardwalks through the thermal areas of Yellowstone. Visitors are inclined to stay on the defined walks rather than to wander aimlessly over the broad expanses of the thermal basins where much damage can be done through the trampling of millions of feet. Also, I should like to report that we have placed special emphasis on getting our construction underway during the fiscal year for which appropriated, and we are pleased to be able to tell you that as of December 31, 1964, we have obligated 32 percent of our available funds; this is an increase of 7 percent over the rate of accomplishment for the past 2 years, and we expect to improve further as the year goes on.

DONATIONS

It has been our practice for a number of years to report to the committee annually on donations of cash, lands, and other objects received by the Service. I am pleased to report that during the 1964 calendar year additional cash donations totaling $865,905 and donations of lands and other objects—exclusive of White House furnishings—valued at approximately $785,000 have been received. We anticipate that further contributions will be received as time goes on. We will continue our efforts to stimulate assistance from outside sources to help carry out our programs wherever possible.

STAFFING ADJUSTMENTS

The Service's 1965 fiscal year budget justifications stated that to meet minimum staffing needs in new areas, certain areas now partially staffed, the resources studies programs, certain administrative functions, etc., adjustments would be made in the previously authorized staffing for other programs, offices and parks. Even before preparing the 1965 budget it had become apparent that through changes in workload some of the areas, offices and programs were more adequately staffed than others.

To meet this situation and to give full support to steps taken by the administration in the interests of economy, manpower utilization, and reduction in employment, studies have been instituted aimed at (1) bringing about a realinement of permanent full-time staffing as between the various areas, offices, and programs; (2) determining functions that can be carried on as economically and efficiently under contractual arrangements as by Service forces; (3) determining functions now performed by permanent employees that can be handled by temporary employees; and (4) identifying permanent full-time positions that can be abolished through such changes in methods of operations.

The studies are being conducted in two phases.

In the first phase the regional directors have reviewed the workload and staffing levels of the various programs, areas, and offices under their jurisdiction and determined staffing adjustments that should be made in light of the foregoing. Likewise, the workload and staffing of the Washington office have been reviewed and decisions reached as to adjustments that should be made. To date these studies indicate that about 150 permanent, full-time positions may be reassigned from lower priority programs and from more adequately staffed areas and offices to higher priority programs and new or inadequately staffed areas and offices.

In the second phase, ad hoc committees make on-site reviews of the workload and staffing of various programs, areas, and offices. Such reviews have already been completed at Isle Royale, Yellowstone, and Grand Teton National Parks, and Lake Mead National Recreation Area. A comprehensive review of the organizational arrangement of the regional offices (except National Capital region) and the field design and construction offices is now underway which is aimed at determining the most efficient and effective way to carry out the mission of the Service.

CLOSURE OF PARK FIELD FINANCE OFFICES

Action is being taken to close all of the park field finance offices (presently a part of the superintendents' offices) and to consolidate the payrolling, accounting, and financial reporting work now handled by them in the regional offices. There were 14 such offices in operation at the beginning of the 1965 fiscal year. This action is being taken in the interests of economy and efficiency of operations and will result in a net reduction of more than 40 permanent, full-time positions by the end of the 1966 fiscal year. Automatic data processing (ADP) equipment will be installed in the regional offices to facilitate execution of the functions on a regionwide consolidated basis.

LAND COST ESTIMATES

During the past year we have made a special effort to improve the quality of our estimates of acquisition costs of proposed new area lands, as well as those involving inholdings and boundary extensions. To accomplish this work we have made work adjustments within our present staffing and funds.

However, to continue to do the job right, we badly need the additional staff allowed by the Bureau of the Budget in the estimates now before you. The increase of $138,000 will allow us to employ a professional real estate appraiser and a realty clerk in each of five regional offices. What little of this work we are now able to perform is being accomplished at the expense of other important program functions by temporarily reassigning whatever qualified personnel we have from their regular work and by employing outside assistance when it is economically feasible to do so. Previously, the reliance has been on the use of tax records and assessments and whatever fragmentary opinion information could be obtained, which in many cases, as you know, has not been reliable.

TRAVEL LIMITATIONS

We sincerely hope that you will give favorable consideration to the elimination of the statutory travel limitations. The ones contained in the appropriation language for the 1964 and 1965 fiscal years have been of real concern to us; they have generated a significant workload throughout the Service and have hindered efficient program execution. Moreover, I believe that the management improvements we have made in this area have, indeed, accomplished the objective of the committees at the time the legislative control was imposed.

The magnitude of the administrative burden attendant to this requirement is illustrated by the number of officials in this program, as shown in the tabulation below. The extra effort required to comply with the requirement is reflected at the Washington office, regional office, design office, and park area levels. It involves complicated recordkeeping, allocations, accounting, reporting, programing, etc. As no additional staff has been employed to handle any part of this increased workload, it is necessarily being performed at the expense of other program functions. There are about 750 primary program officials (including Assistant Directors, regional directors, superintendents, field design office chiefs, and certain other officials) throughout the Service under the five appropriation items involved.

The untold number of hours and days devoted to the functions at each location adds greatly to the administrative cost burden, particularly at the 18 finance

office stations (including the Washington office) where limitation accounting records must be maintained, and the monthly travel limitation reports are made to the numerous program officials concerned.

As each program official must stay within his travel limitation allocation under each appropriation item, good management on the part of each dictates that he operate on the safe side by programing travel at a level somewhat less than the allocations. This, in the aggregate creates a significant "cushion" throughout the Service that tends to prevent full utilization of the amounts authorized by law. This accounts in part for the significant and unrealistic balances that existed at the end of the 1964 fiscal year, as follows:

Appropriation item	Limitation	Obligations	Unused balance	Estimated number program officials
Management and protection	$660,000	$578,000	$82,000	300
Maintenance and rehabilitation	187,500	140,000	47,500	220
Construction	350,000	283,000	67,000	75
Construction (liquidation of contract authorization)	500,000	413,000	87,000	95
General administrative expenses	103,000	101,000	2,000	60
Total	1,800,500	1,515,000	285,500	750

Mr. Chairman, in closing I should like again to thank the committee for the consideration it has given to our budget requests in the past and to express our appreciation for the interest it has had in our programs through the years. We again renew our pledge to strive to obtain the maximum benefit from every dollar that is made available to the Service.

SUMMARY OF STATEMENT

Mr. HARTZOG. Thank you very much, Mr. Chairman. I have asked, with your permission, to join me here at the table Mr. Clarence P. Montgomery, who is our Assistant Director of Administration. On my right is Mr. Howard W. Baker, Assistant Director of Operations, and Mr. T. Sutton Jett, who is our regional director here in Washington.

Chairman HAYDEN. We are happy to have you here sir.

Mr. HARTZOG. Thank you. I would like to state our appreciation to this committee for its interest, understanding, and support of the conservation programs assigned to the National Park Service by the Congress. This is my second time to appear before you as Director of the National Park Service. It has been a great privilege to work with you, sir, and we appreciate your interest.

BRIEFING BROCHURE

Sir, we have two publications here we would like to leave with the committee. One is a briefing book which has been prepared this year to highlight some of the programs and objectives and organization of the National Park Service. The other is a publication "Colonials and Patriots," which is the second in a series of publications as a result of the studies being carried on under the Historic Sites Act of 1935.

Last year we distributed a copy of "Soldiers and Braves," which was the first such publication.

Chairman HAYDEN. We are glad to have them, sir.

CATEGORIES OF PARK AREAS

Mr. HARTZOG. Thank you, sir. In this briefing folder which is before you is a brief general statement outlining the scope of the national park system and Secretary Udall's memorandum of July 10, 1964, in which he clarified the management principles of the National Park Service and categorized the areas that comprise the national park system.

His memorandum deals with the natural, historical, and recreational areas which have been included in this system since the beginning of the national park program in this country with the establishment of Yellowstone National Park in 1872.

ANNUAL WORKING GOALS

There is also outlined in the brochure the annual working goals of the National Park Service. This is a program we have started this year in an effort to improve our own day-to-day management. These supplement the long-range goals and objectives as outlined in the Secretary's memorandum.

In the back of the brochure is a new publication, "Road to the Future," which is the long-range program of the National Park Service.

INCREASE IN VISITATION

The visitation to the national park system is continuing to increase as more and more people come to realize the great recreational as well as educational values that are to be found in the natural, historical, and recreational areas of the system. We estimate in 1966 this visitation will exceed some 126 million visits. With the recent emphasis of the President on the program to see America first, even this figure may be too conservative.

SUMMARY OF BUDGET

In our 1966 budget which is now before you, there is a net decrease, as between all of the activities, of some $6 million.

A summary of the operating accounts indicate a net increase of some $5 million. In other words, management and protection shows an increase of approximately $3,353,000; maintenance and rehabilitation of physical facilities, $1,560,000; and general administrative expenses, $94,000.

STATUS OF CONSTRUCTION PROGRAM

Mr. Chairman, we are placing increased emphasis, as suggested by the Congress, upon the rate of obligation of our construction program. I am pleased to report to the committee that through December 31 of 1964 we have achieved a 7-percent increase in the rate of obligation of our construction funds in comparison to the performance during the past 2 years. I am also pleased to tell you that this rate of increase is likewise holding in January and the first 2 weeks of February. Our preliminary figures support this improvement over the same period last year.

DONATIONS

It has been our custom for a number of years to report to the Congress the donations received by the National Park Service in support

of the programs assigned by the Congress. In 1964 these cash donations totaled $865,905, and donations for land and other objects, exclusive of White House furnishings, $785,000.

MANAGEMENT IMPROVEMENTS

We have been carrying out during this past year an active program of management analysis with the funds which were provided by the Congress for this activity last year. We are pleased to report that considerable progress has been made in this area as reported by some of the adjustments which are reflected in the estimates now before you for consideration.

We have also been able as a result of these studies to bring about the reassignment of about 150 permanent full-time positions from programs of lower priority or adjustments in staff from one area to another to more adequately serve the public needs.

This program is being continued and, with some of the items that are in this budget now before you for consideration, we hope that we will be able to improve the effectiveness of this program. We have also this year, as a part of our continuing program and emphasis on cost reduction and manpower conservation, been able to adapt the accounting work in the regional offices to automatic data processing equipment.

As a result of this we will now be able to close the field finance offices remaining in 14 park area offices and consolidate this largely routine activity in the regional offices.

LAND COST ESTIMATES

As suggested by this committee and also by the Interior and Insular Affairs Committee we have made a special effort during this past year to improve the quality of the cost estimates for land acquisition in proposed new areas as well as in our inholding program.

This improvement has been brought about through the assignment of existing personnel to these particular activities. This has resulted in deferring other needful work. To continue this job in the manner in which we believe it should be done and to comply with the committee's suggestions in this connection, we are asking for an increase in the budget now before you of some $138,000, which will permit us to put regional appraisers in each of the regions.

TRAVEL LIMITATIONS

Mr. Chairman and members of the committee, 2 years ago the Congress placed in our appropriation language a travel limitation. This has been a matter of continuing concern to us. The cost of administration has been burdensome. The net result has been that we have not been able to effectively utilize the limitation provided by the Congress. In order to control the travel it has been necessary to make allocations of the limitation under the 5 appropriations to a total of some 750 program officers, as indicated on page 14 of my general statement. We had an unexpended balance of some $285,500 in 1964 below the amounts authorized by the Congress.

This at first may appear to be a real saving but what has happened, in our judgment, is that it has actually impaired our management, in

that much of the travel that needed to be done by our management personnel to inspect and improve our operations was not accomplished by reason of the fact that each of the program officials held a little reserve. When you analyze the unexpended balance it indicates that each of them exercised prudent management. But the total of all of these reserves made a tremendous impact in the reduction of appropriate travel. For example, we have not been able to go into GSA motorpool arrangements in certain areas because we do not have adequate travel limitations to utilize the GSA cars. If we use our own car, then the operation of that car is not chargeable as travel expenses, but if we rent the car from GSA, the operation is chargeable to travel. These are some of the things that we are having to contend with.

REMOVAL OF LIMITATION

We have improved the management of our travel activity and we believe that the procedures that we have initiated during this past year have fully achieved the objective which the Congress had in mind when it first imposed this legislative requirement, and we respectfully urge that it be removed in 1966.

Mr. Chairman, there is one problem illustrative of this difficulty in connection now with our own major road program, a large part of which is carried out by the Bureau of Public Roads. The Bureau of Public Roads money, while transferred to them for their general expenditure in pursuing this program pursuant to the cooperative agreement we have with them, is nevertheless subject to the same statutory limitations as ours. They are now out of travel limitation, or practically so. For example, they estimate that they will require between now and the end of this fiscal year $147,000 in order to accomplish needed travel. They have a balance on hand of about $70,000 or a shortage of some $77,000.

Our own programs, too, are short in this respect. We discussed this matter with the House Appropriations Committee at our hearings this week, pointing out that there is, because of this balance which I previously spoke about in our 1964 program, unobligated balances in these accounts. And we would hope that you will not object to our utilizing these unexpended balances in order to do the needed work that we believe should be accomplished in the remainder of this fiscal year.

This concludes a summary of our statement, Mr. Chairman. We will be pleased to try to answer any questions that you may have. Thank you very much.

MANAGEMENT AND PROTECTION

Chairman HAYDEN. There will be placed in the record the justification statement for the budget estimate of $33,215,000 for fiscal year 1966 requirements of the "Management and protection" activity. This is an increase of $3,985,000 over the amount appropriated in fiscal year 1965. There is proposed, however, a supplemental estimate of $632,000 to cover pay increases which cannot be absorbed within the 1965 appropriation.

(The statement referred to follows:)

MANAGEMENT AND PROTECTION

HIGHLIGHT STATEMENT

Broad purpose and long-range objective of program

The programs financed under this appropriation are those concerned with the the management, protection, and interpretation of the areas administered by the National Park Service, including soil and moisture conservation, land use and water resources studies, and the management and audit of concessions operations; and those aimed at fulfilling the responsibilities placed upon the Service by provisions of the Park, Parkway, and Recreation Area Study Act, approved June 23, 1936 (49 Stat. 1894); the Colorado River Storage Project Act, approved April 11, 1956 (70 Stat. 105); the Historic Sites Act, approved August 21, 1935 (49 Stat. 666); and the Roosevelt Campobello International Park Act, approved July 7, 1964 (78 Stat. 299).

The broad purpose and long-range objectives of the programs concerned with park operations are as stated in the act of August 25, 1916, establishing the Service, which provides that "the Service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The year 1966 will be the final year of the 10-year Mission 66 program which was designed to provide adequate personnel and facilities needed to carry out this mandate. Visits to the parks are expected to increase from 102.5 million in 1964 to 117.5 million in 1966.

The Park, Parkway, and Recreation Area Study Act of 1936 authorizes and directs the Secretary of the Interior "to cause the National Park Service to make a comprehensive study, other than on lands under the jurisdiction of the Department of Agriculture, of the public park, parkway, and recreation area programs of the United States, and of the several States and political subdivisions thereof, and of the lands throughout the United States which are or may be chiefly valuable as such areas."

Much of the responsibility set forth in this act, and originally delegated in full to the Service, was administratively transferred to the Bureau of Outdoor Recreation when it was established. However, under working arrangements within the Department, the Service, still in part under the legislative authority of this act, remains responsible for certain park and recreation area planning functions. These include (1) national park system planning and studies of specific areas proposed for inclusion in the system; and (2) planning assistance to Federal and State agencies as outlined in the memorandum of understanding between the Bureau of Outdoor Recreation and the National Park Service as approved by the Secretary of the Interior on September 2, 1964.

Under the national park system studies function studies are conducted to determine the significance and suitability of areas proposed for inclusion in the national park system. It also includes the assembly and dissemination of material and data necessary for the review and consideration of such projects; the formulation of the long-range national park system plan, including identification of areas of national significance which are suitable for national park system status; and the consideration of park boundaries to assure that they are adequate to permit accomplishment of the purposes for which the parks were established.

Under the Federal agency and State assistance functions this Service, upon request, through its regional offices makes available to other Federal agencies, the States and their political subdivisions, the skills and knowledge of its park and recreation planners, interpreters, historians, archeologists, management specialists, and other experts. Sharing of this expertise eliminates the need for full staffing of professional park and recreation specialists by other Federal agencies. It also assists, to the extent possible, those States which for many reasons are not yet able to staff adequately, or are in the process of developing their programs, and want specialized assistance, or desire objective assessment of their planning and operations. These programs are carried out in full cooperation with the Bureau of Outdoor Recreation.

The Colorado River Storage Project Act of 1956 provides, under section 8, that, "in connection with the development of the Colorado River Storage Project and of the participating projects, the Secretary is authorized and directed to

investigate, plan, construct, operate, and maintain (1) public recreational facilities on lands withdrawn or acquired for the development of said project, or of said participating projects, to conserve the scenery, the natural, historic, and archeologic objects, and the wildlife on said lands, and to provide for public use and enjoyment of the same and of the water areas created by these projects by such means as are consistent with the primary purposes of said projects: * * *." The National Park Service is primarily responsible for carrying out the recreational obligations of the Department under this statutory provision. The Service is currently conducting archeological investigations and salvage and recreation site planning programs in connection with the Colorado River storage project in fulfillment of this responsibility. It has also commenced management, protection, interpretation, and maintenance operations in the Glen Canyon area, Arizona and Utah, and the Flaming Gorge area, Utah and Wyoming; areas that have been determined to be of national significance. Funds are being provided in Bureau of Reclamation appropriations for transfer to the National Park Service for constructing recreational facilities in the upper Colorado River areas as authorized by the above-cited statute.

The Historic Sites Act of 1936 provides that "* * * it is a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States * * *." The act further provides that the Secretary of the Interior through the National Park Service, for the purpose of effectuating this policy, shall—

"(a) Secure, collate, and preserve drawings, plans, photographs, and other data of historic and archaeologic sites, buildings, and objects.

"(b) Make a survey of historic and archaeologic sites, buildings, and objects for the purpose of determining which possess exceptional value as commemorating or illustrating the history of the United States.

"(c) Make necessary investigations and researches in the United States relating to particular sites, buildings, or objects to obtain true and accurate historical and archaeological facts and information concerning the same."

In fulfilling the foregoing responsibilities, the Service has, in progress, an archeological investigations and salvage program, a historic American buildings survey, and a historic sites survey. The archeological investigations and salvage program is aimed at recovering irreplaceable historic and archeological resources from water control projects in the major river basins of the United States prior to flooding or other destruction. The historic American buildings survey comprises a national plan for making and preserving records of existing monuments of the builder's art in the United States and its possessions. Its first aim is the conservation of our national cultural resources in historic architecture and its secondary aim is service to the public by making available and preserving exact records of this cultural background of American history. The historic sites survey has as its objective a systematic nationwide inventory, investigation, and recording of significant historic and archeological sites; the formulation of clearly defined standards for determining which historic and archeological sites possess national importance within the scope of the Historic Sites Act; the preparation of a classified list of recorded historic and archeological sites, indicating which possess national importance and which do not; definition of the nature and extent of Federal responsbilities for the preservation and use of sites of national importance; and the formulation of policies and practices to carry out those responsibilities.

The Roosevelt Campobello International Park Act provides for the establishment of this international park commemorating Franklin Delano Roosevelt, and the Service is responsible for cooperating with the International Commission, through which the park will be operated, including making provision for the United States to provide one-half the annual cost of operations and development.

Accomplishments during the past year

Good progress was made in fiscal 1964 in the prosecution of all the continuing programs discussed in the foregoing. Some of the specific accomplishments of 1964 were:

1. The Service was host to 102,475,145 visitors to the park areas administered during the last travel year (1964).

2. Operations were commenced at the newly authorized Point Reyes, Calif., and Padre Island, Tex., National Seashores; at two national historic sites—Theodore Roosevelt Birthplace, N.Y., and Sagamore Hill, N.Y.; and at the Frederick Douglass home, District of Columbia.

3. About 12,838,000 copies of free informational publications for use of park visitors were printed for distribution.

4. Visitor fee revenues deposited into the U.S. Treasury as miscellaneous receipts totaled $5,786,876.

5. Field investigations, including both initial studies and followup detailed planning studies, were conducted during the fiscal year on 54 proposed areas. Specific area reports were completed for 24 areas.

6. During the fiscal year, boundary adjustments were authorized affecting Andrew Johnson National Monument, Tenn.; Big Hole National Battlefield, Mont.; Carlsbad Caverns, N. Mex.; Great Smoky Mountains, N.C. and Tenn.; Mesa Verde, Colo., National Park; Salem Maritime National Historic Site, Mass.; and Vicksburg National Military Park, Miss.

7. Fourteen comprehensive geological and ground-water investigations and 19 continuing measurements of streamflow and ground-water level were accomplished in or for the parks.

8. Archeological surveys were accomplished in 33 project areas and major salvage in 41 project areas in 30 States. Similar archeological investigations were made in 23 Service areas. Approximately 80 percent of the work was accomplished by cooperative agreements and contracts with 45 State and local institutions. In turn, the cooperating agencies expended approximately $209,000 of their own funds in cash or equivalent services on these projects.

9. Progress on the historic American buildings survey continued with completion and deposit in the Library of Congress of 1,007 sheets of measured drawings and 2,075 photographs covering approximately 592 structures. Work accomplished during 1964 reflects the increasing tempo of the program, due in large measure to effective cooperation, including donations.

10. The historic sites survey completed 31 studies of which 5 were major theme and subtheme, and the remainder were supplemental special studies and investigations. Special studies were completed in response to congressional requests, and a number of requests for investigations from other sources were received.

11. One major concession contract was executed calling for a construction program of $1 million. At the end of the fiscal year there were approximately 81 major concession contracts and 120 miscellaneous ones in effect. The franchise fees of six concessioners were reconsidered of which two were increased, two were unchanged, and two are pending..

12. During the year audits were completed and reports rendered on 86 concessioners, cooperating associations, and special audits covering an aggregate of 141 years' operations. This represents an increase of 14 audits over the 1963 fiscal year. Periods covered in audits of individual concessioner's operations varied from 1 to 5 years, with the exception of one which covered 15 years.

Objectives and program for budget year

The objectives for the budget year are to achieve maximum progress during the last year of the 10-year Mission 66 program by strengthening the Service's efforts to manage, protect, and interpret the parks and facilities administered to accommodate an estimated 117.5 million visitors.

The budget contemplates that park visitation will reach 117.5 million in calendar year 1966 as compared to 102.5 million for 1964 and an estimate of 110 million in 1965. It also recognizes, as it has for the past several years, the increased fund requirements for operating the many new and reconstructed facilities that are being completed in the parks under the Mission 66 construction program. A substantial portion of the total increase is for the benefit of park operations; it will place the Service in a better position to handle the increase in visitor workload in the parks, including extension of the visitor season in some of them, and for operating new visitor centers, and other new Mission 66 facilities.

The budget includes increases in the park programs for the establishment and operation of 9 new park areas and 2 new areas to be operated under cooperative agreements between the Service and the Bureau of Reclamation, making a total of 11 new park areas to be operated.

Also, in the category of increases for the benefit of park operating programs is the provision for eight additional U.S. Park Police positions; for paying service connection charges incident to obtaining commercial power and telephone services in some of the isolated parks; for safety staffs in five of the regional offices and strengthening the safety staff in the Washington office; for production of increased quantities of informational publications to meet heavy visitor de-

mands; for strengthening the motion picture and audiovisual production program; for commencement of a program of surveying and monumenting park boundaries; for strengthening the natural sciences studies and land-use functions; for the initiation of a park operations study program; for strengthening the concessions management program; and for more adequate fire protection service in the parks.

Management and protection

Appropriation, 1964	$27,124,000
Deficiency appropriation, 1964	225,000
Total appropriation, 1964	27,349,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration Reorganization Plan No. 1 of 1963	−47,417
Total available, 1964	27,301,583
Appropriation, 1965	29,075,000
Supplemental appropriation, 1965	155,000
Pay cost supplemental	632,000
Total available, 1965	29,862,000

Summary of increases and decreases, 1966

New park areas	633,000
Park areas activated since beginning of Mission 66 now partially financed	372,000
To operate newly constructed facilities and to meet requirements generated by increased visitor use and general park program expansion in pre-Mission 66 areas	1,690,000
Commercial power and telephone service connection charges	75,000
Commencement of a program for surveying and monumenting park boundaries	100,000
To provide safety staffs in five of the regional offices and to strengthen the safety staff in the Washington office	111,000
Motion picture and audiovisual production program	100,000
Natural sciences studies	50,000
To initiate a park operations study program	50,000
Eight additional U.S. Park Police positions—salaries and expenses	87,000
Production of additional park informational publications	70,000
Employees' compensation fund payments	25,000
Roosevelt Campobello International Park	−130,000
To provide for more adequate fire protection service	90,000
To develop a comprehensive plan for the protection, preservation, and interpretation of continental glaciation in Wisconsin for the ice age scientific reserve	50,000
Participation in the coordinated interdepartmental comprehensive river basin planning studies	54,000
To meet increased requirements for the following programs:	
Land use	138,000
Concessions management	18,000
Nonrecurring item due to program savings resulting from organizational realinements	−230,000
Net increase, 1966	3,353,000
Budget estimate, 1966	33,215,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
1. Management of park and other areas	$21,993,748	$24,116,300	$516,700		$24,633,000
2. Forestry and fire control	1,525,438	1,514,700	18,300		1,533,000
3. Soil and moisture conservation	197,064	205,000			205,000
4. Park and recreation programs	2,843,871	2,877,000	80,000		2,957,000
5. Concessions management	470,747	517,000	17,000		534,000
Unobligated balance lapsing	260,715				
Total	27,301,583	29,230,000	632,000		29,862,000

Activity	Fiscal year 1964, amount available	Fiscal year 1965, amount available	Fiscal year 1966 estimate	Increase compared with 1965
1. Management of park and other areas	$21,993,748	$24,633,000	$27,766,000	$3,133,000
2. Forestry and fire control	1,535,438	1,533,000	1,603,000	70,000
3. Soil and moisture conservation	197,064	205,000	205,000	
4. Park and recreation programs	2,843,871	2,957,000	3,089,000	132,000
5. Concessions management	470,747	534,000	552,000	18,000
Unobligated balance lapsing	260,715			
Total	27,301,583	29,862,000	33,215,000	3,353,000

1. Management of Park and Other Areas

Analysis by subactivities

Subactivity	Fiscal year 1964, amount available	Fiscal year 1965, amount available	Fiscal year 1966, estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) National parks, monuments, etc	$18,668,294	$20,658,000	$23,649,000	+$2,991,000
(b) National Capital parks	2,795,405	3,182,000	3,359,000	+177,000
(c) Informational publications	470,666	530,000	600,000	+70,000
(d) Employees' compensation fund payments	59,383	108,000	133,000	+25,000
(e) Roosevelt Campobello International Park		155,000	25,000	−130,000
Total	21,993,748	24,633,000	27,766,000	+3,133,000

(a) *National Parks monuments, etc.*

The estimate of $23,649,000 is an increase of $2,991,000 consisting of—

(1) A decrease of $100,000 due to program savings resulting from organizational realinements;

(2) An increase of $3,091,000 for purposes discussed below. The amount shown as available for 1965 includes $332,700 for increased pay costs which could not be absorbed in fiscal 1965, and which is proposed for inclusion in a 1965 supplemental estimate.

The programs financed under this subactivity are those concerned with the management, protection, and interpretation of the areas administered by the National Park Service other than those comprising the National Capital region. The estimate contemplates that 218 park areas with a total of about 26 million acres in Government ownership will be administered during the 1966 fiscal year. The estimate also contemplates that visitation to those areas will reach 117.5 million in calendar 1966 as compared to 102.5 million for 1964, the last completed calendar year, and an estimate of 110 million for 1965. Fulfillment of the Service's responsibility incident to this visitor use requires adequate staffs of

uniformed personnel—rangers, naturalists, historians, guides, etc.—as well as adequate numbers of management and administrative employees.

While much progress has been made in overcoming staffing and other program component deficiencies that obtained at the commencement of Mission 66 and in meeting the heavy increase in workload that has taken place; that is, the increase in visitor use, the addition of new park areas to the system, and the provision of new visitor facilities in the areas the operation of which requires additional staffing and general expense funds, adequate staffing and funding levels have not been reached. It is essential that the full amount requested in the estimate be provided if minimum requirements for the management, protection, and interpretation of the park areas are to be met in the budget year. Amounts requested for the individual park areas and other entities, except for the new area requirement, have been determined on the basis of estimates justified by the park superintendents as adjusted after regional and Washington office review. Amounts requested for other purposes, all of which are in support of area operations, have been determined as indicated in the justifications for the individual items.

The increase included in the estimate is for the following purposes:

New park areas	$633,000
Park areas activated since beginning of Mission 66 now partially financed	372,000
To operate newly constructed facilities and to meet requirements generated by increased visitor use and general park program expansion in pre-Mission 66 areas	1,600,000
Commercial power and telephone service connection charges	75,000
Commencement of a program for surveying and monumenting park boundaries	100,000
To provide safety staffs in 5 of the regional offices and to strengthen the safety staff in the Washington office	111,000
Motion picture and audiovisual productions program	100,000
Natural sciences studies	50,000
To initiate a park operations study program	50,000
Total	3,091,000

Need for increase.—Fund requirements under this subactivity continue to increase from year to year. Principal factors bringing about the increased requirements are (1) constantly increasing visitor use of the parks; (2) completion and placing into operation the new Mission 66 facilities requiring additional management, protection, and interpretive personnel and supporting general expense funds; (3) establishment of new park areas; and (4) increases in the cost of doing business.

Aside from the year-to-year increases in requirements, there are still many longstanding needs that must be satisfied. A safety staff must be provided in each regional office (and the Washington office staff must be strengthened) if adequate measures for visitor and employee safety are to be assured; all park boundary lines must be established and properly marked if management and protection of the parks are to be accomplished efficiently and at a minimum of cost; urgently needed natural sciences and park operations studies should be undertaken immediately if required data upon which to base policy, planning, and management decisions are to be available; and there is a serious need for more and better audiovisual and motion picture productions for use in the park interpretative programs.

Substantially all of the increases requested are for going programs or for programs that cannot be deferred, such as the establishment of the newly authorized park areas. Justification for the increase under each of the major categories is set forth below:

New park areas, $633,000.—Fund requirements incident to the establishment and operation in the 1966 fiscal year of 9 new park areas authorized in the 2d session of the 88th Congress and 2 new areas to be operated under cooperative agreements between the Service and the Bureau of Reclamation (a total of 11 new areas) are included under this heading. Through the Service's cost reduction and manpower conservation efforts it has been possible to make funds available for minimum staffing at some of the areas (as indicated below) that must be manned prior to the close of the 1965 fiscal year. The funds and staffing that have been provided for the new areas have been made available through

reductions in staffing previously provided for some of the older areas. These adjustments have come about after careful review of the workload and authorized staffing in the various areas and after making new determinations as to relative requirements that can be met within the funds and staffing currently authorized. The increase requested herein will provide permanent positions and funds for management, protection, and interpretation purposes for each of the new areas as follows:

Area	1965 program		1966 estimate		Increase	
	Funds	Permanent positions	Funds	Permanent positions	Funds	Permanent positions
Allegheny Portage Railroad National Historic Site; and Johnstown Flood National Memorial, Pa. (2) (Public Law 88-546, approved Aug. 31, 1964)	$20,100	1	$41,000	4	$20,900	3
Bighorn Canyon Recreation Area project, Montana-Wyoming (cooperative agreement approved Dec. 31, 1964)	-------	-------	59,500	5	59,500	5
Canyonlands National Park, Utah (Public Law 88-590, approved Sept. 12, 1964)	51,900	8	163,400	12	111,500	4
Curecanti Recreation Area project, Colorado (cooperative agreement now in final stages of negotiation)	-------	-------	121,800	8	121,800	8
Fire Island National Seashore, N.Y., (Public Law 88-587, approved Sept. 11, 1964)	25,600	2	121,000	8	95,400	6
Fort Bowie National Historic Site, Ariz. (Public Law 88-510, approved Aug. 30, 1964)	-------	-------	28,000	2	28,000	2
Fort Larned National Historic Site, Kans. (Public Law 88-541, Aug. 31, 1964)	-------	-------	51,500	5	51,500	5
John Muir National Historic Site, Calif. (Public Law 88-547, approved Aug. 31, 1964)	-------	-------	24,500	3	24,500	3
Ozark National Scenic Riverways, Missouri. (Public Law 88-492, approved Aug. 27, 1964)	25,800	2	107,100	8	81,300	6
Saint-Gaudens National Historic Site, N.H. (Public Law 88-543, approved Aug. 31, 1964)	-------	-------	38,600	3	38,600	3
Total, new park areas	123,400	13	756,400	58	633,000	45

Park areas activated since beginning of Mission 66 now partially financed, $372,000

Since the beginning of Mission 66 in 1957, 25 new areas have been, or soon will be, activated for which management, protection, and interpretation funds totaling $1,627,600 are programed under this subactivity in the 1965 fiscal year. The initial amounts and any subsequent increases provided have been requested and allocated to meet minimum needs in activating the new areas and their increased requirements to date. Requirements for new areas increase from year to year as progress is made in getting the operations underway and in providing services and facilities to meet progressive increases in visitor use. This estimate provides an increase of $372,000 for 24 of the 25 newly activated areas to meet operating requirements during the 1966 fiscal year. The areas activated

during the Mission 66 period, or soon to be activated, and pertinent fund and staffing data with respect to each follows:

Area	1965 Program		1966 Estimate		Increase	
	Funds	Permanent positions	Funds	Permanent positions	Funds	Permanent positions
Arkansas Post, Ark	$25,600	2	$27,200	2	$1,600	
Bent's Old Fort, Colo	32,100	3	33,900	3	1,800	
Booker T. Washington, Va	26,000	3	27,600	3	1,600	
Cape Cod, Mass	211,900	15	278,300	18	66,400	3
City of Refuge, Hawaii	44,200	3	57,100	3	12,900	
Flaming Gorge, Utah and Wyo	96,300	9	125,400	9	29,100	
Fort Clatsop, Oreg	37,600	3	39,900	3	2,300	
Fort Davis, Tex	48,300	4	48,300	4		
Fort Smith, Ark	49,700	6	54,600	6	4,900	
General Grant, N.Y	22,700	3	23,700	3	1,000	
Glen Canyon, Ariz. and Utah	201,000	19	247,800	23	46,800	4
Grand Portage, Minn	45,800	4	48,000	4	2,200	
Hamilton Grange, N.Y	34,300	5	40,800	5	6,500	
Horseshoe Bend, Ala	39,300	4	44,200	4	4,900	
Lincoln Boyhood, Ind	38,700	3	45,100	3	6,400	
Minute Man, Mass	95,800	9	103,300	9	7,500	
Padre Island, Tex	75,300	6	138,000	8	62,700	2
Pea Ridge, Ark	43,700	5	50,200	5	6,500	
Point Reyes, Calif	72,600	7	109,200	8	36,600	1
Russell Cave, Ala	26,100	3	27,400	3	1,300	
Sagamore Hill, N.Y	56,300	6	64,900	7	8,600	1
Theodore Roosevelt Birthplace, N.Y	20,500	3	27,000	3	6,500	
Virgin Islands, V.I	166,300	17	187,800	17	21,500	
Whiskeytown, Calif	86,800	6	116,100	7	29,300	1
Wilson's Creek Battlefield, Misscuri	30,700	3	33,800	3	3,100	
Total, Mission 66 areas	1,627,600	151	1,999,600	163	372,000	12

The number of permanent positions (151) reflected in the 1965 column is 19 more than the number (132) provided for fiscal 1964. These 19 additional positions were provided for through reductions in authorized permanent positions for older areas as explained in the discussion of the foregoing item.

The increases requested, as indicated in the foregoing, are needed to meet the workload anticipated to obtain in the 1966 fiscal year. In addition to the 13 new permanent positions reflected in the foregoing tabulation, the increase requested provides for 21.2 man-years of temporary employment.

To operate newly constructed facilities and to meet requirements generated by increased visitor use and general park program expansion in pre-Mission 66 areas, $1,600,000

Since the beginning of Mission 66, the two major purposes for which increases have been requested under this subactivity for park areas existing at the commencement of Mission 66 have been (1) for operating newly constructed facilities and (2) for requirements generated by increased visitor use and general park program expansion.

Increases have been provided for these purposes each year since the beginning of Mission 66. However, the Mission 66 objective of providing adequate staffing and supporting general expense funds for management, protection, and interpretation of the park areas has not been realized and the requirement increases from year to year as visitor use of the parks increases, as new facilities are placed into operation and, with respect to management requirements, as the overall park operating and development programs expand in the progress of Mission 66.

From the commencement of Mission 66 through June 30, 1964, an 8-year period, there were completed and placed into operation in all Service areas, among a wide variety of other facilities, 74 new visitor centers, 16,786 new campsites in 289 new campgrounds, 65 new amphitheaters and campfire circles with a capacity of 19,650 persons, 456 miles of new roads and 910 miles of reconstructed and improved roads, and 270 miles of new parkway sections. The programs for completing and placing into operation additional units in all of these categories will continue at a reasonably high level in the 1965 and 1966 fiscal years.

The completion and placing into operation of new units in each of these categories bring requirements for additional funds under this appropriation activity.

New visitor centers require additional uniformed interpretive personnel. The new campgrounds and campfire circles require additional protective and interpretive personnel (rangers, naturalists, historians, etc.), plus supporting general expense funds, including uniform allowances. New miles of roads and parkways, and, in some instances, reconstructed and reconditioned roads require additional ranger personnel for patrol functions, plus supporting general expense funds, including such expensive items as the acquisition, operation, maintenance, and replacement of motor vehicles.

Park visitation to pre-Mission 66 areas is expected to reach 107.1 million in 1966 as compared to 92.3 million in 1963 and 95.9 million in 1964 and an estimate of 101.4 million for 1965. This also is compared to annual visitation of 60.3 million at the beginning of Mission 66 and the original Mission 66 estimate of 88.8 million for 1966, the last year of the 10-year period. Only through the provision of adequate uniformed personnel and supporting program assistance can minimum visitor services and park protection requirements be met, to say nothing of improving the service to the public and providing more adequate protection of park values. Also, in some cases, the management staffs must be increased if executive direction and administrative functions are to be performed in an efficient manner and if satisfactory progress is to be made in the prosecution of all park programs.

Aside from the increased visitor use of the parks during the previously recognized travel season, use patterns are changing and extending to the degree that in some heretofore seasonal parks, public use is steadily approaching a year-round basis. New public use areas and improvements of roads and trails tend to spread public use within the parks. Water use and back-country use are steadily increasing. Campground use increased approximately 86 percent from 1956 to 1964. In 1956 camper days totaled 3,628,600 while in 1964 they totaled 7,433,400. All of these factors bring about progressively increasing fund requirements for management, protection, and interpretive staffing and general expenses.

Total requirements under this heading have been determined on the basis of estimates justified by the individual park superintendents as adjusted after regional and Washington office review. This is the same basis upon which the requirement has been determined in prior years.

The total increase requested under this heading is for application to requirements in 139 parks. The increase requested would provide for 35 new permanent positions and 65 man-years of temporary employment.

Commercial power and telephone service connection charges, $75,000

The Service arranges for obtaining electric power in the parks from commercial sources unless it is determined not to be in the interest of the Government to do so. Mission 66 plans call for the commencement of commercial electric power service in 16 areas in the budget year. Negotiations with the power companies to extend service to isolated park areas must be on the basis of paying a service connection charge to cover all or a part of the extension costs or, when possible to do so, the paying of increased rates over a specified period until the power company's extension investment is recovered. On the basis of experience to date, more satisfactory and more economical arrangements can be made on the basis of paying a lump-sum charge at the time the service is commenced. In many instances it is not possible to negotiate on any other basis.

To obtain telephone service in some of the isolated areas or to isolated sections of some areas, it is necessary to construct lines at Government expense from points where the telephone service is required to connect with telephone company lines or to arrange with the telephone companies for extension of their lines. Such arrangements with a telephone company, as is the case with respect to extension of electric lines by the power companies, must likewise be on the basis of paying a service connection charge or paying a higher monthly rate for telephone service over an extended period of time. In most cases it has been determined to be in the interest of the Government to negotiate with the telephone companies on the basis of making a lump-sum payment at the time the service is connected. The Mission 66 plans call for 10 such connections in the budget year.

Such lump-sum payments for both electric and telephone connections are proper for financing under the appropriation items that benefit from the electric and telephone service. Negotiations underway for services to be commenced in 1966 carry a total connection charge fund requirement of $600,000 of which

$300,000 will be chargeable to this appropriation activity and $300,000 to activity 2 of the "Maintenance and rehabilitation" appropriation item. Funds totaling $375,000 ($225,000 under "Management and protection" and $150,000 under "Maintenance and rehabilitation") have been provided as increases in prior years to meet the major portion of the total $600,000 fund requirement in 1966. The increase of $225,000 requested for the purpose ($75,000 under "Management and protection" and $150,000 under "Maintenance and rehabilitation") must be made available if the program for providing adequate electric power and telephone service for the parks is to go forward as planned.

Commencement of program for surveying and monumenting park boundaries, $100,000

Boundary lines have not been properly established or suitably monumented so as to enable ready identification in more than 100 park areas. This situation creates problems in the management, protection, maintenance, and development of the parks. The responsibilities imposed by laws and regulations with regard to hunting, fishing, timber cutting, and other forms of trespass have, under the circumstances, become increasingly difficult to meet, particularly under present-day conditions with the tremendous increase in population and travel. Numerous inholdings or private lands in many of the parks add to the complexity of the situation. Basically, boundary lines are a prime necessity to forestall infringement on park land and to define the areas within which official activities may be exercised.

Permanent corner and boundary line markers at appropriate intervals are needed to readily identify the boundaries of the parks. On the basis of recent estimates, a total of $2,500,000 will be required to do the survey work and install markers. The program envisions the performance of necessary engineering records research and boundary surveying, the casting and installation of suitable permanent monuments or markers and the establishment of proper reference records.

It is proposed to initiate the program beginning with the 1966 fiscal year, at a $100,000 level and to expand it in subsequent years in order to complete the program within a 10-year period. It is anticipated that the work would be done by the Bureau of Land Management on a reimbursable basis and/or by local licensed land surveyors on a contract basis. No additional staffing is included in the estimate for this purpose. As needless and expensive litigation can result if this situation is not corrected, steps should be taken to implement the program at the earliest possible date.

To provide safety staffs in five regional offices and to strengthen the safety staff in the Washington office, $111,000

The Service's safety staffs now consist of a chief safety officer, a safety specialist and a safety assistant in the Washington office; a small safety staff in the National Capital regional office and a safety engineer in the western office of design and construction. Neither of the other two design and construction field offices has a full-time safety engineer. The safety engineer in the western office of design and construction is concerned almost wholly with construction project planning. Staffing for the formulation and execution of programs to promote employee and park visitor safety and to promote adequate safety measures on the part of concessioners and construction contractors in the parks and technical assistance to the other two design and construction field offices is limited almost entirely to the small Washington office and National Capital region units. It is not possible to formulate and implement a fully effective safety program throughout the Service with this limited staffing.

With park visitation expected to reach 117.5 million in 1966, a large percentage of which will be comprised of persons inexperienced in outdoor activities, there is a serious accident potential. Park employment is expected to exceed 11,000 permanent and seasonal employees in 1966. Park concessioner employees are expected to exceed 10,000 and employment on construction and maintenance contracts in the parks will probably exceed 5,000.

Some of the Service's maintenance and construction work is performed under most hazardous environmental conditions—such as scaling mountain sides and high road banks for loose rock; constructing, repairing and/or demolishing fire towers, buildings, and other structures at high elevations; trail and road work on edges of canyons, etc. Other hazardous activities, to mention only a few, are rescue work, vehicle traffic patrolling on curved and steep mountain roads, road maintenance operations exposed to heavy traffic conditions, handling

of dangerous culprits, tree work, fighting forest fires, vehicle travel over all types of mountain roads, water activities (boating, skiing, swimming, and skin-diving), snow activities (snow removal, avalanche detection, skiing, snowplane operations), handling of wild animals, etc. With a Service employment force in excess of 11,000, representing both permanent and seasonal employees, many of whom work under hazardous conditions, and the constantly increasing number of persons visiting the park areas, it is essential that the Service have a safety staff to be able (1) to develop and maintain an up-to-date effective safety program, and (2) to provide professional assistance to the park staffs in the application of the program elements and in solving technical safety problems.

In 1963, 64 visitors lost their lives and 1,523 were known to be injured from accidents while visiting in the parks. More striking is the fact that a total of 613 visitors were killed in accidents during the last 12 years. While the annual fatality rate would be less than 1 (0.68) per million visitors, and the accident rate about 17 injuries per million visitors, any such loss of life or personal injury is a most serious matter and one to which maximum effort must be applied in devising and implementing preventive measures. The Service must take every reasonable step to provide safe environments and to become acquainted with environmental situations where potential accidents can occur but where the environment cannot be made safer.

The operations of the concessioners and construction contractors in the parks must be included in the Service's safety effort not only from the standpoint of employee accident prevention, but for the protection of visitors using the facilities. Concessioners are required to take all appropriate steps for the prevention of accidents to visitors and to protect buildings in their use from fire damage. The construction contractors are required to maintain safe operations and provide necessary safety features to safeguard employees and the visiting public from accidents directly attributable to the construction operations, but the Service has to provide some assistance and maintain compliance with safety codes and practices. During 1963, six construction contractor employees were killed on projects in the parks. This is a high fatality rate even for construction work and the Service, as the contracting agency, must make an effort to improve this situation.

The safety of people, structures, and personal property is involved in the fire prevention and fire control activities of the National Park Service. The Division of Safety has primary responsibility for this important aspect of accident prevention and damage control, involving an overall fire protection program which includes (1) the largest number of irreplaceable historic structures in the world; (2) many millions of dollars worth of real property and operating equipment; (3) millions of visitors using various accommodations; and (4) over 26 million acres of land and its wildlife.

Methods of inspection of properties for the identification and correction of hazardous conditions which might be the cause of accidents and fire losses are constantly being refined for effectiveness. The Division of Safety is closely associated in the development of the fire protection programs which must include training and development of personnel with an appreciation for and understanding of potential hazards and safe practices. This involves the integration of the principles of safety into the execution of fire prevention and fire control programs of the Service directly, and through management staffs and operational personnel.

To provide a minimum of badly needed safety personnel, this estimate proposes the establishment of safety staffs in the five regional offices for which no such staffing is currently provided and the addition of a clerk-stenographer in the Washington office, plus a small increase for travel and general expenses of the staff. The regional office staffs would consist of two positions each—a safety officer and clerk-stenographer. This additional staffing for an effective safety program is long ovedue.

Motion picture and audiovisual productions program, $100,000

The National Park Service has traditionally stressed personal services of uniformed park employees as the primary method for providing park visitors with information and interpretation. In recent years, however, park visitation has increased to the point where park staffs can no longer provide such personal service, except for a very small percentage of visitors. In view of this, and in an effort to provide needed information and interpretation for park visitors, the Service has turned increasingly to the use of automatic, visitor-activated audiovisual devices which present recorded messages and projected pic-

tures. The use of such audiovisual methods began essentially in 1956 and has increased steadily since then. The Service was actually the leader in using automatic audiovisual devices, and it has set the pattern and the stage for tremendous advances in the audiovisual industry. Coincidentally, during the same period, the public has been exposed to increasingly sophisticated methods of film projection, high fidelity sound, color television, and videotape. Today the simple sound/slide films which the Service began presenting in 1956 are outmoded and overshadowed by the greater sophistication and effectiveness of motion picture and television methods. There is an urgent need to professionalize the automatic park presentations to the end that they can compete for the attention of today's park visitors.

Among the projects which the increase will make possible is the production of four interpretive motion pictures which will present specific park stories more effectively than can sound/slide films.

It is proposel also to produce a conservation education film which will take the park story to schools, educational television audiences, and to clubs and other out-of-park audiences. The need for this type of film has long been recognized.

The production of a motion picture film for Service training purposes will also be made possible by the increase. To assist in providing more effective training of seasonal employees of both the National Park Service and park concessioners such a film is urgently needed. A motion picture film would permit the actual demonstration of proper methods for serving all the needs of park visitors, and the film would thus raise the levels of training effectiveness in all parks.

The increase will also make possible the contracting for advisory and testing services to discover new and better methods of sound control, to improve the automatic program controls, and to increase the effectiveness of existing audiovisual installations. This is needed because in many of the new auditoriums and exhibit rooms there are audiovisual situations for which no satisfactory design criteria have ever been developed. Here again the Service must pioneer in a new field.

Today more than half of the parks have audiovisual installations of some kind. They include 172 audio stations (automatic message repeaters) in 84 parks; 65 sound/slide film presentations in 55 parks; 23 silent captioned-slide cabinet presentations in 19 parks; 6 automatic electric maps with sound in 6 parks; and new ampitheaters or campfire circles equipped with modern audiovisual aids in more than 50 parks. Work continues in making new audiovisual installations in connection with the construction of new visitor centers and other park interpretive facilities, and in adding audiovisual automatic methods in existing facilities where they are needed. Adding to the workload of the small staff is the need to upgrade and professionalize more than half of the existing sound/slide film presentations, and to plan for appropriate installations in the new parks that are being added to the system.

It is not proposed to add any additional permanent positions to the existing small staff that has primary responsibility for this function in the Washington office at this time. The increase will provide funds for augmenting the small staff by entering into contractual arrangements for most elements of the film productions as well as for certain advisory and testing services.

Natural sciences studies, $50,000

In 1963 the Department and the Service received a clear warning, "Unless drastic steps are taken to restore the deteriorated environments within this generation, several, if not all, of the national parks will be degraded to a state totally different from that for which they are preserved and for which they were to be enjoyed."

The above is the sobering conclusion reached by a National Academy of Sciences committee appointed, at the request of Secretary Udall, to study and to advise the National Park Service regarding its needs for scientific information as a basis for effective park management, use, and preservation.

The report cites specific examples of degradation or deterioration that have occurred because scientific data were not developed and brought to bear upon problems of management, development, public use, or preservation.

Prior to receipt of the National Academy's analysis and recommendations, no budgetary provision had been made for the initiation of carefully planned, comprehensive natural science studies. While in the past some natural science research has been accomplished from year to year with park operating funds as a part of the regular park management, protection, and interpretive function,

this has not been a coordinated effort aimed at meeting the situation described in the National Academy committee report. Prior to the 1965 fiscal year only $28,000 was specifically identified in the budget for natural history studies. In the recent reorganization of the Service five biologist positions in three of the regional offices were made a part of the Service's resource studies organization and funds provided for their salaries and expenses ($67,000) were added to the $28,000 specifically identified for natural history studies, for a total program level of $95,000. This action plus the increase of $100,000 provided in the 1965 appropriation allowed the Service to commence tooling up. With the increase requested herein the Service will be in a more favorable position to initiate further efforts to meet some of the most pressing of its responsibilities for correcting situations outlined in the Academy's report.

The results of forest fires, erosion, trampling, and pulverizing of forest understory and flower-carpeted meadows, and tree pests and blight, are obvious. But more often, these and other adverse influences do not reveal their presence until irreversible harm has been done. Then the situation can explode with sudden violence and disastrous effects, like the failure of mechanical devices because of metal fatigue. The wise course, and the economical one, is to "nip in the bud," to apply remedial measures while the problem is small, before the damage becomes irreversible.

To do this the Service must have comprehensive knowledge about the resources it is protecting, and the dangers it must protect against. The task is by no means simple, for the interrelations, interdependence, and interactions among animals and plants in their natural environments are exceedingly complex, frequently obscure, and are most incompletely understood at the present time. As in medicine, a little knowledge may prove more dangerous than none at all. Adequate and accurate information is required for the diagnosis, and scientific competence is necessary in applying the remedy.

The scientific program also has a bonus value, providing data and concepts necessary for public information and interpretation.

The following cases illustrate the necessity for competent scientific investigation in the solution of practical park problems:

(1) Overpopulations of elk, deer, and buffalo already have severely damaged range environments and natural resources in various national parks. Wildlife management control programs are essential in such cases for conserving the integrity of park wildlife and associated vegetation, but to be effective, they must be based upon scientific study and recommendations. Thus far the complexities of the interaction between range response and population phenomena of large mammals are poorly understood.

The elk, buffalo, and pronghorn antelope herds of Yellowstone National Park have drastically altered food availability and quantity. Consequently, the whitetail deer and bighorn have either been completely eliminated from these ranges or severely reduced. If not checked in their early stages, ecological changes caused by these overpopulations, pyramid. Then soil erosion, reduction or elimination of particular plant species, reduction of suitable food and cover for smaller wildlife species, disruption of normal life patterns, starvation, and outbreaks of disease, follow, further complicating the requirements necessary for restoring the original conditions.

The solution is not simple. It cannot be found by only counting elk, but rather by conducting complete studies of the total environment, and basing corrective management plans upon data derived therefrom. Similar serious problems exist, requiring similar lines of attack in Grant Teton, Rocky Mountain, Glacier, Sequoia, Yosemite, Zion, Dinosaur, Acadia, and other parks and monuments.

(2) Introduced nonnative wildlife species compete seriously with native species for food, cover, and water in many parks. Studies need to be conducted to develop and guide control and management programs for the restoration of native habitats and native wildlife species. Burros, goats, wild pigs, or mongooses are presently in serious conflict with native wildlife in 15 areas administered by this Service, including Great Smoky Mountains, Hawaii Volcanoes and Virgin Islands National Parks and Death Valley National Monument.

Information must be obtained as to the conditions which facilitate the development of these nonnative populations and which hinder the well-being of the native species, in order that such conditions can be manipulated to favor the latter species.

(3) Restoration of rare, endangered, and vanishing wildlife species is recognized by the Service, the National Academy of Sciences, and the Secretary's Advisory Board on Wildlife Management, as a special responsibility when the

principal remaining natural habitats of such species are in units of the national park system.

The black-footed ferret is by national consensus one of the rarest and most endangered land mammals in this country at the present time. Its successful restoration to Badlands National Monument, Wind Cave National Park, and Theodore Roosevelt National Memorial depends on a determination of its food, territorial, and other survival requirements so that management can provide these essentials for the only significant population of these animals so far located during a 4½-year countrywide search.

(4) Invasions of exotic fishes endanger natural fish populations in some parks. The native cutthroat trout has been severely depleted in Rocky Mountain National Park through competition with the exotic eastern brook trout. Snake River trout in Grand Teton National Park are declining as a result of unknown factors, possibly related to waterflow regulation from Jackson Lake. A significant increase in the Service's study effort is essential to provide the facts needed to correct these and similar situations throughout the park system.

Most studies now underway have not yet reached the stage where definitive management recommendations can be made. However, in three instances, sufficient data have been accumulated to date to suggest changes in management procedures:

(*a*) Studies on the bighorn sheep population of Joshua Tree National Monument revealed the adequacy of available forage, identified water supply as the critical factor in the welfare and survival of these animals and showed that bighorn can compete effectively with mule deer, but are endangered by certain water supplies being preempted for human use. Fortunately, however, certain waterholes were found, now dry, that can be rehabilitated adequately for bighorn utilization, and others where nonessential human activities can be controlled sufficiently for bighorn use.

(*b*) The large population of feral goats in Haleakala National Park were identified as the primary cause of the increasing destruction of the unique native plant communities which the park was established to preserve, and as the cause of the severe erosion in certain areas of the park. Complete removal of all feral goats, and a goat-tight fencing around the park are indicated as being needed. The findings are equally applicable to Hawaii Volcanoes National Park with a population of nearly 10,000 feral goats.

Limnological investigation of two lakes in Lassen Volcanic National Park indicates changes in fishery management practices in the lakes should be modified to reduce supplementary planting of one species of trout; to relocate future airdrops of trout to places where predation by larger fish will be minimal; and to increase the size of trout planted in order to permit more favorable competition with resident populations for food. Institution of these changes in fish management policy should result in reduced cost of fish planting and in increased survival rate among the individuals planted.

The program increase provides for entering into contracts and cooperative arrangements with academic and Government institutions and research agencies that can make substantial matching contributions of their own manpower and funds because of their established interests and commitments in these fields. Such contracts will be made with universities and other State agencies, and by cooperative arrangements with the Fish and Wildlife Service, the U.S. Geological Survey, and other Federal agencies, to undertake specific studies directed toward the solution of certain park conservation problems. The increase will also provide needed additional support to projects now in progress, such as elk studies in Grand Teton, Glacier, Yellowstone, and Rocky Mountain National Parks, grizzly and black bear management, restoration of the bighorn, and protection of moose range on Isle Royale National Park.

Substantially all of the increase is programed on the basis that the studies will be carried out under contractual arrangements or by the temporary employment of consultants, with incidental amounts required for travel and other general expenses related to the staff direction and supervision of the various studies.

To initiate a park operations study program, $50,000

That the National Park Service is a resource-managing agency (protector and preserver) of the physical resorces of over 200 parks and a people-serving agency to over 100 million visitors annually is generally recognized. The management of the physical resources, with their varying degrees of susceptibility

to fire, erosion, disease, overpopulation, accidential demolition, depreciation, spoliation, etc., requires varying numbers of personnel and physical facilities for their preservation and protection. The serving of over 100 million visitors, with their varying activities, ranges of behavior, lengths of stay, degrees of interest, susceptibility to accident, etc., requires varying numbers of personnel and facilities for their protection, guidance, convenience, and welfare at different parks. In a word, the natural resources themselves, physical facilities and the visitors at each park not only impose work on the park staff but also require Federal investment in additional constructed conveniences. The Service needs to know more about these relationships and their demands upon its resources.

During the planning of Mission 66 and after its inception, rigorous analysis was not required to determine the need for the expansion of park staffs and the restoration, refurbishing, reconstruction, and expansion of physical facilities. The facts and the record testify to the then urgent and across-the-board need for closing the wide gap between imposed work and available staff and facilities resources. During the Mission 66 period this gap has perceptibly narrowed. Indeed, with respect to some staffs and some facilities in some parks, the gap, for the time being, may be said to be substantially closed, at least on a purely quantitative basis. In many others, however, a gap still exists with respect to one resource or another and in varying degrees among the various areas.

What is critical here is that the Service is without assurance that the provision of personnel and facilities in relationship to needs is uniform throughout the Service. Some parks may stand in much more favorable relationship to their staff and resource needs than do others. Viewed from the standpoints of both equity and economy, the relationship between total work responsibilities and total park staffs and other resources should be uniform throughout the Service. To assure such equity and economy, thorough studies into the composition, patterns, and duration of workloads in the parks are required. These studies necessarily involve designing and executing park operations, work measurement, development priority, and demand-forecasting projects. Analyses will have to be made of totals of demand and use as well as of fragments of park operations.

Broadly speaking, park operations studies will be oriented to vigorous formal analysis of park workload and work operations, and behavioral analysis of park visitors. With respect to the latter, it is not contemplated that the Service will embark upon psychological investigations of individual park visitor motivations, preferences, interests, etc. What the Service intends to do is to deal with park visitors as aggregates. One can rarely enjoy the luxury of custom-made services for each individual patron when confronted with over 100 million visits annually. Thus, while the Service will be concerned with the public's interests, preferences, and requirements, these will be derived from the studies of the measured behavior of aggregates rather than through the depth probing of individuals.

This request does not contemplate an expansion in the permanent staff. The work is to be carried on under the supervision of the existing small staff of professional personnel in the Statistics Analysis Branch of the Division of Management Analysis in the Washington office. This kind of deliberate progress will assure the composition of a park operations studies group properly tailored to recognized needs. Accordingly, no personnel increments are included in this request. Rather it is desired to move through at least the 1966 fiscal year with the skeleton staff currently authorized and utilizing the medium of study contracts and the possible temporary employment of expert consultants. These, it is believed, will provide the most efficacious vehicles for moving prudently into the experimental period.

Plan of work.—The program for fiscal 1966, which is the last year for Mission 66, contemplates a continuing effort to manage, protect, and interpret the parks and facilities administered to accommodate an estimated 117.5 million visitors and, at the same time, preserve park values.

Of the increase requested, about 52 percent has been applied to the operation of newly constructed facilities and to cover requirements generated by increased visitor use and general park program expansion in pre-Mission 66 areas; about 32 percent is for the operation of 11 new park areas and for additional operating requirements in 25 park areas that have been activated since the beginning of Mission 66; about 4 percent to provide safety staffs in five regional offices and to strengthen the safety staff in the Washington office; about 6 percent to provide for service connection charges incident to obtaining commercial electric power and telephone service in various parks, and for surveying and monumenting park boundaries; about 3 percent for motion picture and audiovisual production functions; and the balance, about 3 percent, is for natural sciences and park operations studies.

(b) National Capital Parks

The estimate of $3,359,000 is an increase of $177,000 over 1965. The amount shown as available for 1965 includes $129,000 for U.S. Park Police salary increase costs and $46,000 for classified employee salary increase costs which could not be absorbed in fiscal 1965 and which are proposed for inclusion in a 1965 supplemental estimate.

The program increase is for the following purposes:

Eight additional U.S. Park Police positions—salaries and general expenses	$87,000
Additional staffing and general expense funds to meet visitor services and protection workload in outlying areas and certain memorials	90,000
Total	177,000

Funds requirements under this subactivity continue to increase from year to year. The principal factors bringing about the increased requirements are (1) the constant increase in the number of visitors (vehicular and pedestrian) using the various park units, (2) the increasing number of and interest in special events involving park facilities and personnel, (3) the increase in the crime rate, (4) the completion and placing into operation of new Mission 66 facilities requiring additional management, protection, and interpretive personnel and supporting general expense funds, (5) the addition of new areas, reservations and memorials to the National Capital park system, and (6) the increase in the cost of doing business. Additional staffing and general expense funds are needed essentially at all levels of operation to handle the increased workload. Visitation increased at a greater rate during 1964 over any year since 1946 at the major memorials where actual counts are taken. Increases range from 8 to 125 percent. The following statement reflects increases in the volume of individuals using park facilities in the National Capital region and/or comprising vehicular and pedestrian traffic handled by the U.S. Park Police for certain calendar years from 1937 to 1964.

	1937	1961	1962	1963	1964
Out-of-town visitors	3,500,000	14,960,000	16,270,000	18,550,000	22,445,000
Active and inactive recreation participants	15,000,000	26,000,000	29,000,000	33,000,000	37,000,000
Business motorists and pedestrians	30,000,000	108,000,000	124,200,000	136,000,000	150,000,000
Total	48,500,000	148,960,000	169,470,000	187,550,000	209,445,000

This increase in visitation and in all types of park use, together with expanded facilities, increasing crime rate, and overall program expansion, make it essential that the management, interpretative, and protective functions be strengthened. Justification for each major category of increase requested follows:

Eight additional U.S. Park Police—Salaries and expenses, $87,000

This increase will provide more adequate police coverage for Greenbelt Park, Md. (consisting of over 1,100 acres) and Great Falls Park, Va. (consisting of 780 acres).

The only protective service currently provided at Greenbelt Park is an occasional patrol by an officer assigned to the Baltimore-Washington Parkway. This limited service is no longer satisfactory. Greenbelt Park is being developed and contains, at present, 50 campsites in which tent camping is permitted. During 1965 more of the park will be open for public use. As it is the only camping area in this vicinity, over 250,000 persons are expected to take part in outdoor recreation and enjoyment of these park facilities. Over 250 campsites will be available when completed.

Great Falls Park, Va., is being developed for camping, hiking, and picknicking and will include a police substation which should be manned during all periods of public use. This is not possible with the presently authorized force. The eight additional privates requested will meet the minimum staffing needs on a 7-day-week basis at these areas. It is essential that additional officers be provided to meet this growing need. Otherwise it will be necessary to reduce the police coverage in the intown areas where the crime rate is increasing and where additional coverage in depth is urgently needed.

This increase, together with 10 additional positions that are being requested in the District of Columbia budget, will bring the total strength of the force to 297, which is 138 short of the 1966 staffing level recommended in the 1957 report on the survey of the Park Police operation.

Additional staffing and general expense funds to meet visitor services and protection workload in outlying areas and at certain memorials, $90,000

The workload brought about by increased visitation and public use of park units has created the need for the following additional protection and visitor services:

1. *National memorials.*—The visitation at several of the memorials has increased at an unprecedented and unexpected rate. Visitation increases for 1964 over 1963 are 125 percent at Custis-Lee Mansion; 16 percent at the Lincoln Memorial; 8 percent at the Washington Monument; 20 percent at Lincoln Museum and House Where Lincoln Died; and 17 percent at the Jefferson Memorial. Orderly crowd handling and interpretation is not possible with the present staffs and hours of operation. Present resources only allow an average of four employees at each memorial at one time to perform collection, protective, and interpretive functions. It is necessary for the supervisor to regularly man posts due to the shortage of personnel, thereby reducing needed time for planning and other supervisory duties. The increase will provide for 5.5 man-years of seasonal guide service which is urgently needed to make the visits to these memorials as pleasant and meaningful as possible. Without sufficient personnel for crowd control and proper interpretation, visitors do not derive maximum benefits from their visits to the memorials. Visitor fee revenue from these units increased from $114,602 to $204,388 during 1964 as compared to 1963.

2. *Prince William Forest Park.*—The increase will provide 0.5 man-year of additional seasonal protective and clerical help and required general expense funds to meet the added visitor workload at this popular park. The park attracted 211,427 visitors in 1964, an 18-percent increase since 1962. These included 11,484 tent campers, 12,662 cabin campers, and an estimated 125,000 picnickers. Many more users of this 12,215-acre area are anticipated with the opening of additional campgrounds and trailer camps during the year.

3. *Catoctin Mountain Park.*—The increase will provide about 1 man-year of needed temporary clerical assistance. In addition to the clerical functions, the incumbents will also be assigned to receptionist and informational duties in the new visitor center scheduled for completion during the 1965 fiscal year. The new camping and picnic facilities being developed in this area have greatly increased the workload in the park headquarters office, and there is only one employee assigned to this office at present. The expansion of the headquarters building, including the visitor center operation, makes it essential to have this additional help.

4. *Fort Washington, Md.*—The increase will provide for two permanent park rangers and 1 man-year of seasonal protective and interpretive personnel at this historic location. One employee would live at the fort site to provide added protection. New construction in this 341-acre park has added 500 picnic sites and includes rebuilt roads and restoration of Fort Washington structures. These new recreational facilities and the growing interest in historic Fort Washington, along with the increase in population in the Washington urban area and better accessibility from the Capital Beltway and the Woodrow Wilson Bridge, have greatly increased the use of the fort's resources. Estimated visitation for 1964 was 230,000, representing a 560-percent increase since 1960. This area receives only casual surveillance by park personnel at present, which has resulted in a loss of much of the historic restoration work through destructive acts of vandalism.

Plan of work.—The program under this activity contemplates the management, interpretation, and protection of the Federal park system of the Nation's Capital and the adjacent metropolitan areas in Maryland and Virginia. The system comprises over 39,000 acres representing capital investments of approximately $237 million. The functions will be performed principally by employees of the National Capital region.

The increase will provide additional staffing needed to meet the increased workload brought about principally by the large increase in visitation and park uses in the outlying areas and at certain of the memorials.

During calendar year 1964, 59 million persons used the parks as tourists or participated in active and inactive recreation. Some of the significant accomplishments in 1964 include: (1) Completion of one unit of the park operations

building in East Potomac Park and occupancy by the management, administrative and professional staffs of the region and the National Capital Office of Design and Construction; (2) acquisition of title to the Frederick Douglass Home; (3) acquisition of 248 acres of land and 53 scenic easements in Piscataway Park across from Mount Vernon; (4) continuation of construction and opening as fast as possible of 1,000 picnic and camping sites throughout the region; and (5) enhancement of the beauty of the parks through the floral displays in many of the parks in Washington.

Significant accomplishments anticipated in 1965 include: (1) Completion of the second unit of the park operations building in East Potomac Park and occupancy by the U.S. Park Police; (2) opening of the George Washington Memorial Parkway in Maryland; (3) completion of the additional 1,000 picnic and camp sites; (4) opening of a trailer camp in Prince William Forest Park; (5) removal of most of the temporary office buildings from park areas by the General Services Administration; and (6) reopening of the reconstructed Ohio Drive, which has been closed due to sewer construction by the District of Columbia.

(c) *Informational publications*

The estimate of $600,000 is an increase of $70,000 over 1965. The program increase will provide needed funds to improve the quality and quantity of Service publications. The amount shown as available for 1965 includes $9,000 for increased salary costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

The objective of this program is to develop and provide an adequate supply of free information publications and sales publications, including natural history and history handbooks, to meet the heavy demand for park information from visitors in the parks, and mail, telephone, and personal inquiries to the Washington and regional offices of the National Park Service.

Need for increase.—The request for an increase is based primarily on two factors:

1. The need for a higher volume of publications to meet an unprecedented demand, as indicated below.

Publications will be needed at an early stage in the management program for nine new park areas authorized for addition to the national park system in the 2d session of the 88th Congress.

Visits to areas of the national park system are increasing each year. Anticipated visitation for 1965 is 110 million. In 1966, it is expected to be 117.5 million.

Visits to the National Capital parks are expected to run higher than the average. At some memorials and at the Curtis-Lee Mansion, in 2 years, visitation has risen more than 50 percent.

The U.S. Travel Service has made numerous requests to the National Park Service for publications. Public Law 88–416, approved August 11, 1964, which authorizes and requests the President to issue a proclamation to proclaim 1964 and 1965 as a period to "See the United States" will undoubtedly generate the need for more park publications.

The completion of new visitor centers in the parks and the opening of a public reception center on the first floor of the Interior Building in Washington have drastically increased the quantity of publications distributed to the public.

Letter and telephone inquiries for publications are between 60,000 and 70,000 each year to the Washington office alone. Requests of this nature are far greater than can be filled. This results in disappointments to teachers and schoolchildren who can be sent only a portion of what they ask for.

To provide a free park folder for every three visitors has long been an objective of the Service. With the increase requested herein the ratio will approximate one free publication to every six visitors, as compared to one such publication to approximately every seven visitors in 1965.

2. The need for more functional publications in terms of graphics, maps, and texts, as indicated below:

Graphic considerations are important because of the showcase aspect of the national parks. The very significance of these archeological, historical, natural, and recreational areas suggests that the publications should provide high graphic standards. The Service also seeks to make its publications workable in terms of specific park situations. This emphasis on appearance and function will be augmented in the 1966 program.

Maps represent a large investment in the Service's publications program. More than a half-million dollars' worth of maps are maintained for the program.

Today, as a result of swelling park attendance and changing conditions within the parks, such maps must be updated and new ones supplied. For 1966, it is planned to undertake a broad program of modernization. Much of this work will be done on a reimbursable basis through the Branch of Special Maps of the Geological Survey. A study of needs has been completed, and several new maps are already being prepared. With this program, it is hoped to put greater emphasis on the map aspect of park folders. In places like Yellowstone, Yosemite, and Grand Teton National Parks, the folder will emphasize the map features and the text will be reduced to only the most essential information.

Text considerations will be greater in 1966 than ever before. The Service's informational program is going through a change of major proportions as new park areas are created and the Service undertakes cooperative efforts with other Government agencies, such as the Forest Service, the Bureau of Land Management, and the Bureau of Reclamation. In keeping with this situation, the Service has initiated a publications evaluation study. From this study has evolved a number of possibilities for meeting the almost limitless demands for informational publications. The Joint Committee on Printing has authorized several of these innovations on an experimental basis during the 1965 and 1966 fiscal years. Park publications which will be initially included in this experiment involve those for Cape Cod National Seashore, Mass.; Gettysburg National Military Park, Pa.; and Grand Canyon National Park, Ariz. While the costs involved are not a major budget factor, the Service has taken the initiative to cope with mounting demands on finances. It is hoped that the 1966 fiscal year will bring many cost-saving innovations to this volume-publishing activity.

The increase requested, in combination with the anticipated cost reduction, should provide for a more realistic publications program. No increase in staffing is proposed in 1966; substantially all of the increase will be used for producing more and better publications.

Plan of work.—By and through this program, it is planned to continue the production of general informational publications and their important adjuncts, the historical and natural history handbooks. Service personnel in the parks, the regional offices, and the Washington office, prepare and edit the publications and the Government Printing Office does the printing. The publications program for the current and budget years is as follows:

1965 fiscal year

	Copies	Estimated cost
Free informational publications:		
22 booklets	2,500,000	$72,500
162 folders	12,800,000	166,400
5 general information publications	120,000	8,400
Total (189)	15,420,000	247,300
Sales publications:		
3 historical handbooks, 2 natural history books (5, at $2,600)		13,000
Total		260,300

1966 fiscal year

	Copies	Estimated cost
Free informational publications:		
25 booklets	3,000,000	$87,000
165 folders	15,300,000	198,900
5 general information publications	130,000	9,000
Total (195)	18,430,000	294,900
Sales publications:		
3 historical handbooks, 3 natural history handbooks (6, at $2,600)		15,600
Total		310,500

(d) Employees' compensation fund payments

The estimate of $133,000 is an increase of $25,000 over 1965. The estimate is the amount required for payment to the Bureau of Employees' Compensation, Department of Labor, as required by Public Law 86–767, approved September 13, 1960.

(e) Roosevelt Campobello International Park

The estimate of $25,000 is a decrease of $130,000 under 1965. The amount requested is one-half (the U.S. share) of the amount estimated to be required for operating the Roosevelt Campobello International Park during fiscal year 1966, as authorized by Public Law 88–363 (78 Stat. 299). The other one-half of the estimated fund requirement is to be provided by the Canadian Government.

2. Forestry and Fire Control

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) compared with 1965
(a) Forest management	$221,431	$247,000	$227,000	−$20,000
(b) Fire protection service	980,049	1,079,000	1,169,000	+90,000
(c) Tree preservation	96,534	107,000	107,000	----------
(d) Forest fire suppression	237,424	100,000	100,000	----------
Total	1,535,438	1,533,000	1,603,000	+70,000

Vegetation, whether forest, brush, or grass, is an extremely important component in the internationally known national park scenery. It is the outstanding feature in many of the parks; in others, it is an essential element of the total park environment.

Forestry and fire protection activities financed from these funds protect the vegetation totaling over 13 million acres from fire, insects, disease, and other preventable damage and preserve it unspoiled for the inspiration and enjoyment of the people. Thousands of structures for visitor and administrative use, and many of historical importance, must be protected from fire.

In addition, serious insect or disease outbreaks must be appraised and controls undertaken where feasible to protect park vegetation. Continuing emphasis is placed upon the prevention of man-caused or influenced damage to the irreplaceable forest resources of the parks. Protection organizations and facilities need to be strengthened and new and improved methods of equipment adopted to keep abreast of protection requirements resulting from increasing numbers of visitors, the changing patterns of visitor use, and long-range programs for proper park management. Funds to accomplish these objectives are requested in these estimates, as discussed below.

(a) Forest management

The estimate of $227,000 is a decrease of $20,000 under the amount available for 1965. The decrease of $20,000 is due to program savings resulting from organizational realinements. The amount shown as available for 1965 includes $8,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

Plan of work.—Technical staff direction for investigation and planning and the development of procedures and standards for resources management, including the protection of vegetation and control of forest and structural fires, is provided under this program by the Washington and regional offices. The forest management staffs in the Washington and regional offices, give staff direction to activities involving protection of park features—lands, waters, vegetative cover, and facilities from impairment by fire, human misuse, unnatural erosional forces, encroachment by nonnative plants, outbreaks of plant diseases and insect infestations. They maintain close liaison with park operations and give technical assistance to park rangers and other protection personnel, foresters, tree preservation crews, white pine blister rust and forest pest control personnel.

They cooperate directly with other Federal and State conservation agencies to provide efficiency and uniformity on joint operations, mutual aid during fires or other emergencies, interagency training, and development of new techniques, methods, and equipment.

They are responsible for staff direction and coordination of programs involving protection of approximately 26 million acres of Federal land, which contain some 13 million acres requiring intensive protection from fire. The preservation of these park forests, natural features, and wildlife is a major responsibility of the National Park Service. Facilities and structures of great value, irreplaceable historical buildings and objects, and the millions of people who use the parks must also be protected from fire. The values at stake require the highest standard of performance at all levels.

Under provisions of the Lea Act of April 26, 1940 (54 Stat. 168), and the Forest Pest Control Act of June 25, 1947 (61 Stat. 177), the Department of Agriculture transfers funds to the Department of the Interior and the National Park Service for the control of white pine blister rust and outbreaks of forest insects and tree diseases within the parks. It is anticipated that approximately $1½ million will be made available for these purposes during the 1965 and 1966 fiscal years. The forest management staffs are responsible for the administration of these programs. They also maintain liaison with departmental and U.S. Forest Service officials, formulate policies and procedures, issue instructions, approve projects and methods of control, and give on-the-ground assistance in detection and suppression operations.

(*b*) *Fire protection service*

The estimate of $1,079,000 is an increase of $90,000 over 1965. The amount shown as available for 1965 includes $9,400 for increased pay costs which could not be absorbed in fiscal year 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

The increase of $90,000 is for operating requirements generated by increased visitor use, activation of new park areas, and general park program expansion.

Need for increase.—Additional fire protection and control facilities and services are needed as new or enlarged public use areas are developed under the long-range program of providing recreation facilities adequate to meet present and future needs. Increased visitor use and expansion of facilities result in changing use patterns and require revision and strengthening of the protection programs.

The increase will enable the Service to streamline its fire protection service program by providing additional aircraft services, specialized equipment, better communications, and training which will greatly increase the efficiency of the fire protection organization. It will provide 4.2 man-years of temporary services in the parks and funds for additional contractual arrangements for such items as aircraft, communications, etc.

Some of the things that should be done, and will be done insofar as possible with the increase requested, to improve and facilitate the fire protection services program include:

1. Select and adopt modern techniques of fire control which are ideally situated for park operations.

2. The steadily increasing visitor use of the parks has intensified the responsibility and workload of park staffs, especially in connection with the forest and structural fire control program functions. Public use is not only increasing during normal periods, but use patterns are changing and expanding to the degree that in some parks such use is approaching, or has already reached, a year-round basis. There is an increasing tendency to spread visitor use within the parks, including back-country and water use areas. Irreplaceable historical buildings and their contents must be given the best protection possible. Fire prevention and presuppression activities must be modernized and broadened accordingly.

3. The typically rough terrain and roadless expanses of the parks present special problems in detecting fires and reaching them with suppression crews while they are still small. The increasing use of aircraft is paying off in this respect. Aircraft has been and will continue to be used to a greater extent to supplement fire lookout stations and fire patrols to locate fires. Presuppression costs for aircraft contracts and training and equipping air attack personnel are high, but they pay off in the prevention or early suppression of what could be large and costly fires. Provision must be made in advance in anticipation of forest fires for use of fire retardant chemicals to be dropped as a "holding action" before crews arrive or to knock down "hot spots" on large fires, and for heli-

copters to be used for scouting and to transport men and equipment to isolated areas.

4. To engage in an effective air operation, the Service must provide better ground-to-air communications; special equipment such as helipumpers, firehose trays, and retardant mixing equipment; and strategically located helispots.

5. Newer and more efficient radio communication is being provided; however, there is still inadequate communication in many of the areas. These areas must be provided with better communications to increase the efficiency of the fire protection organization.

6. To keep up with the latest developments and techniques in fire prevention and suppression, the Service will continue the regular fire suppression training and in addition, will conduct specialized training in fire behavior, fire weather, air operations, and fire generalship; participate to a greater degree in interdepartmental and interbureau fire training programs; and assign more trainees to actual going fires. Fire qualification standards are used to provide minimum requirements for filling key positions with properly trained and experienced personnel.

7. The Service has and will continue to cooperate with other agencies in planning for emergency operations through mutual training and assistance agreements and will continue participation in the development and testing of new fire equipment and methods.

Plan of work.—The fire protection services program provides services and facilities within the parks to carry out prevention on the ground and to organize and train Service employees and others to combat fires when they do occur by the most economical means with the least possible damage to park features.

(c) *Tree preservation*

The estimate of $107,000 is the same as the amount available for 1965. The amount shown as available for 1965 includes $900 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

There are two mobile tree crews—one operating in the eastern part of the United States and the other operating in the western part of the United States. The purpose of this program is to provide special care and protection for individual or significant trees such as those in historical and military park areas; and to those trees in developed public use locations.

Many individual trees or groups of trees in the parks have scenic, scientific, or historic significance. Examples of historically significant trees are those at Shiloh National Military Park, Tenn., and Vanderbilt Mansion National Historic Site, N.Y. The General Sherman Tree in Sequoia National Park, Calif., and the General Grant Tree in Kings Canyon National Park, Calif., both giant sequoias, are examples of scenic and scientific trees. The trees and forests in cemeteries, battlefields, campgrounds, overlooks, parkways, and landscaped areas are significant because of their esthetic value as well as for shade and shelter to the park visitor. Constant surveillance by specialists to identify deterioration of the trees and to take timely prevention and maintenance measures is essential in achieving the objectives and purposes of this program.

Plan of work.—All of the work in tree preservation is given technical supervision. Surveys are made annually by technical personnel to determine the extent and amount of tree preservation work to be done so that priority can be given to the most important needs. There will be constant surveillance to detect hazardous trees in public use areas. Some of the work, such as that in campgrounds, can be done only when visitor use slacks off.

Pruning, trimming, and bracing are practices that require skilled and trained workers. The greatest volume of this type of work is performed by two mobile, specially equipped tree preservation crews. The eastern tree crew will continue to carry out the tree preservation activities in areas east of the Mississippi River. The western tree crew will similarly provide the special care, treatment, and protection for individual or significant groups of trees throughout the West.

(d) *Forest fire suppression*

The estimate of $100,000 is the same as the amount available for 1965.

Plan of work.—These funds are used to cover forest fire suppression and emergency presuppression costs when and as they occur. They are funds which may be required in addition to the regular fire protection service and on-site management activities for fire suppression and emergency presuppression actions. Suppression involves actual on-the-ground fire fighting to control fires with dis-

patch and at least cost. Emergency presuppression activities include stepping up fire protection forces beyond normal operations during periods of critical fire danger as a preparedness measure in the event of fire.

3. Soil and Moisture Conservation

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase 1966 compared with 1965
Soil and moisture conservation	$197,064	$205,000	$205,000	----------

The estimate of $205,000 is the same as the amount available for 1965.

The Service's soil and moisture conservation program is directed toward preventing and repairing accelerated erosion, restoration of certain historical scenes, and stabilization of areas receiving heavy recreational use. Of the approximately 26 million acres of Federal lands administered by the Service, more than 2 million acres require intensive conservation treatments.

Some of the major soil and moisture problems in the areas administered by the National Park Service have developed through prior misuse of lands in farming, lumbering, and grazing. In some cases, immediate corrective action is needed on and adjacent to sites being developed for public recreation. Other problems have developed because of unnatural concentrations of wildlife, trespass, grazing, and overuse of fragile high mountain meadows in some of the western parks, and must be corrected through a continuous long-range soil and moisture conservation program.

Plan of work.—Other Service programs, such as forestry and fire control, maintenance of grounds and facilities, and certain construction and wildlife management activities are directly related to the soil and moisture conservation program. It is intended that the program be a diminishing one with rehabilitation treatments accomplished as early as practicable. In turn, management practices and maintenance operations will insure permanence of restored lands. The 1966 program will consist of conservation measures in 36 parks. Approximately 63 percent of the estimate will be directed toward reestablishment of vegetative cover, fencing, brush control, and other soil stabilization measures. About 13 percent of the estimate involves water management—primarily bank protection and small developments. The remaining 24 percent of the proposed work will be land-use planning, studies and investigations which are coordinated with programs of adjacent jurisdictions and soil and water conservation districts.

The program is directed by the Washington and regional offices and accomplished by park forces and/or by contract.

4. Park and Recreation Programs

Analysis of subactivities

Subactivity	Fiscal year 1964, amount available	Fiscal year 1965, amount available	Fiscal year 1966, estimate	Increase (+) or decrease (—) 1966, compared with 1965
(a) Cooperative activities	$790,880	$717,000	$821,000	+$104,000
(b) Visitor services	610,864	705,000	595,000	—110,000
(c) Land and water resource studies	390,748	452,000	590,000	+138,000
(d) Archeological investigations and salvage	754,195	771,000	771,000	----------
(e) Historic American buildings survey	141,909	152,000	152,000	----------
(f) Historic sites survey	155,275	160,000	160,000	----------
Total	2,843,871	2,957,000	3,089,000	+132,000

(a) Cooperative activities

The estimate of $821,000 is an increase of $104,000 over 1965. The amount shown as available for 1965 includes $25,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

This continuing program is comprised of two main functions:

(1) National park system studies, and (2) Federal agency and State assistance. Under the first function (national park system studies) studies are conducted to determine the significance and suitability of areas proposed for inclusion in the national park system. It also includes the assembly and dissemination of material and data necessary for the review and consideration of such projects; the formulation of the long-range national park system plan, including identification of areas of national significance which are suitable for national park system status; and the consideration of park boundaries to assure that they are adequate to permit accomplishment of the purposes for which the parks were established.

Under the second item (Federal agency and State assistance) this Service, upon request, through its regional offices makes available to Federal agencies, the States, and their political subdivisions, the skills and knowledge of its park and recreation planners, interpreters, historians, archeologists, management specialists, and other experts. This professional assistance is made available to Federal agencies partially on a reimbursable basis, particularly in those instances when the minimal permanent staffing in the regional offices has to be supplemented in order to provide such assistance. Sharing of this expertise eliminates the need for full staffing of professional park and recreation specialists by other Federal agencies. The Service also assists to the extent possible on a nonreimbursable basis those States which for many reasons are not yet able to staff adequately, or are in the process of developing their program, and want specialized assistance, or desire objective assessment of their planning and operations. These programs are carried out in full cooperation with the Bureau of Outdoor Recreation.

Need for increase

National park system studies, $50,000.—The increase of $50,000 is needed for the national park system studies function to implement section 2(a) of the act authorizing the establishment of the Ice Age National Scientific Reserve in the State of Wisconsin, Public Law 88-655, approved October 13, 1964, which provides:

"To implement the purposes of this act, the Secretary of the Interior (hereinafter called the Secretary), in cooperation with State and local governmental authorities of Wisconsin, may formulate within 2 years after this act takes effect a comprehensive plan for the protection, preservation, and interpretation of outstanding examples of continental glaciation in Wisconsin; but he shall not spend more than $50,000 of Federal funds thereon."

The Service's national park system studies staff will cooperate with the State of Wisconsin and its political subdivisions in formulating a comprehensive plan for the protection, preservation, and interpretation of outstanding examples of continental glaciation in Wisconsin as provided for in the foregoing.

In addition, the staff will be deeply concerned with the regular and continuing functions incident to the national park system studies program functions involving a heavy workload, as follows:

There has been a remarkable increase in the public's interest in recent years in the importance of and demand for outdoor recreation facilities. The country has responded with sharply increased requests to investigate and identify qualified natural, historic, and recreational areas so that Congress can act before it is too late to protect these areas of national significance.

The number of areas that qualify for inclusion in the national park system is but a fraction of the number of areas investigated, most of which fail to measure up to the criteria that have been established for the selection of national park system areas.

Not only are far more areas being investigated, but the amount of data required for consideration of proposed parks by the public and the Congress have multiplied. In readying a proposal for the consideration of high level government officials, the Congress and the public, a number of studies such as reconnaissance, suitability and feasibility, economic, land-use and boundary must usually be made; reports written, photographs taken; and voluminous correspondence answered.

In addition, numerous meetings and hearings must be attended, each requiring special preparation; written and oral statements prepared; matters of policy decided and legal questions resolved. Many of the existing national parks were carved with relative ease from the undeveloped public domain. A major share of today's proposals, however, involve areas located where many diverse inter-

ests and private ownerships are involved. The determination of what is in the best public interest is no longer as quick or simple as it was years ago. This was demonstrated in the mass of data collected and numerous steps required, involving a vast amount of time and effort on the part of many Service employees, before such projects as the Cape Cod and Fire Island National Seashores and the Ozark National Scenic Riverways, were authorized. All of this points up the very significantly increased Service responsibility and workload.

Also, for almost every recent major proposal, there have been additional demands for economic and other technical studies. These have been needed to provide the Congress, the directly affected State or local government bodies, and interested citizens the necessary information on which to make decisions concerning the economic enhancement or displacement involved when land is set aside for park purposes as well as to answer many other questions. Such studies are urgently needed in some areas now being actively considered, and similar situations are certain to arise in the coming year as additional areas come under consideration. Often these studies are carried out under contract with universities or other accredited institutions that have no vested interest in the area in question.

One of the current major goals of the Service calls for a careful systematic analysis of the present composition of the national park system and an evaluation of its desirable future makeup and scope—this to be based upon the remaining opportunities for preservation of nationally significant, scenic, scientific, historic and recreational values and the foreseeable needs of the Nation for such reservations. This would support and provide further solid background for specific area studies as they are requested of the Service and presented to Congress for consideration. If a well-rounded system of natural, historical, and recreational areas is to be eventually achieved, most of it must be done in the next relatively few years while overall public interests are being weighed, and before outstanding land and water values are preempted or their particular unique character or qualities are destroyed. To assure that the best or most representative examples may be available for the national park system comparative studies on a systematic basis are essential.

The urgency to supplement studies of specific areas with a systematic approach reflects pressures imposed by increasing public use and by other accelerated programs affecting the remaining natural and historical resources. It is quite important that the Service proceed with this phase of its studies in order to be in a better position to supply the Bureau of Outdoor Recreation this fundamental part of a nationwide recreation plan for which the Service is responsible. The Bureau of Outdoor Recreation by basic statute is required to complete its nationwide outdoor recreation plan by May 1968, with a target date set for completion by July 1967. While the workload of specific proposals to be studied is also increasing, it is hoped that the systematic studies work can be absorbed by the existing staff.

Federal agency and State assistance, $54,000.—An increase of $54,000 is needed to carry out the Service's responsibilities incident to the interdepartmental comprehensive river basin planning studies. The studies are necessary in order to safeguard existing park areas and to assure correlation with other Service studies including historical, natural science, and salvage archeology. Also, it provides for participation in the various field committee meetings and other conferences to assure continuity so that the Service may have the necessary background knowledge for the time when specific area planning and development is required.

The park and recreation skills and experience of the Service's professional staff are made available to Federal and State agencies upon specific request, within the limits of available funds and manpower. Each agency outlines its needs for assistance. Although requirements vary with different agency programs, they are normally limited to general development planning, site planning, consultation on design and construction of public-use facilities, providing assistance on related operation and maintenance matters, interpretive planning, guidance in negotiation of agreements with State and local government agencies for recreation administration on Federal lands, followup inspections to determine compliance with terms of agreements, and assessment of historical and archeological values and guidance in providing for their protection and preservation on the lands involved. Specifically in the Western States assistance is, and has been, rendered most often to the Bureau of Reclamation. The staff provides certain technical assistance in the preauthorization studies, development planning and related assistance as required. Following congressional authorization for a

project, the Service prepares general development and land-use plans showing the specific location and extent of user facilities and submits them along with recommendations to the requesting agency for its use in preparing construction plans. During construction, supervision and followup consultations are provided as requested. A significant amount of this work must continue to be done on a reimbursable or advance-of-funds basis. The Corps of Engineers has its own professional staff but does occasionally request the Service's assistance in reviewing its development plans and reports.

In keeping with its responsibilities, the Service will review Corps of Engineers' Bureau of Reclamation, and Federal Power Commission project reports and submit its comments concerning them to the Assistant Secretary, Water and Power Development.

Self-help by the States is encouraged by urging their development of agency staffs to handle as much of their own work as possible. It is not anticipated that all 50 States will require assistance. Some requests can be filled by letters or brief reports following personal contact; others will require field study and thorough analysis with recommendations for detailed planning by other consultants.

Thirty-four recreation demonstration areas comprising 222,317 acres of former Federal lands were conveyed to the States during the period between June 1942 and January 1957, with certain restrictive provisions and the stipulation that the land be inspected periodically to determine the degree of compliance with the terms of the transfer. This is being done; if any unauthorized use is found, action is initiated to assure compliance.

Plan of work.—As provided in a memorandum of understanding between the Bureau of Outdoor Recreation and the National Park Service, the latter is responsible for postauthorization recreation planning for the Bureau of Reclamation while the former is now responsible for providing preauthorization recreation planning. In order to implement the agreement, a task force composed of representatives from the Bureau of Outdoor Recreation, the Bureau of Reclamation and the National Park Service, is now considering arrangements whereby an orderly assumption of responsibilities by the Bureau of Outdoor Recreation will be effected before the end of the 1966 fiscal year. By mutual agreement, the National Park Service will complete preauthorization studies which are initiated during fiscal year 1965. Studies which are initiated in fiscal year 1966 will be completed by either the Bureau of Outdoor Recreation or the National Park Service as required to effect and to assure the orderly assumption of responsibilities by the Bureau of Outdoor Recreation.

In view of the current workload of proposed area and planning studies, and the increasing requests for assistance to Federal and State agencies, it will be necessary to undertake much of the Federal agency work on a reimbursable or advance-of-funds basis if it is to be accomplished. The increases requested herein do not provide for any additional permanent employees.

Future plans for this program.—The Service will continue, through studies and reporting, to identify natural, historical, and recreational areas that qualify for addition to the national park system. It will also continue its program of existing park area boundary studies as needed. Increasingly evident is the urgent need for emphasis on the systematic approach to formulate and develop a long-range national park system plan. This arises from the Service's awareness and concern over the rapidly diminishing number of available areas of of natural, historical, and recreational resources which are disappearing forever under population pressures and commercialization of nationally significant areas, and its responsibilities to the Bureau of Outdoor Recreation for segments of its nationwide recreation plan which is due, according to statute, in 1968. The systematic approach offers the best method of early identification and reservation of areas necessary to fill the gaps in the existing national park system to make it most useful and enjoyable to the Nation's public.

Requirements of Federal agencies, States, and their political subdivisions, for recreation assistance are expected to increase materially in view of new emphasis and interest in this activity that are being generated pursuant to the provisions of the Land and Water Conservation Fund Act of 1965.

(b) Visitor services

The estimate of $595,000 is a decrease of $110,000 under the amount available for 1965. The decrease of $110,000 is due to program savings resulting from organizational realinement. The amount shown as available for 1965 includes $25,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

This subactivity finances functions in the Washington and regional offices that are concerned with programs carried out by the uniformed staffs of naturalists, historians, guides, etc., who meet and render services to the public in the parks. These functions include the formulation of policies, procedures, and standards relating to, and the exercising of staff supervision and coordination over, the Service's interpretive programs, its visitor activities functions, and its museum and visitor center presentations. They also include participation in the preparation and review of park master plans and staff work incident to administration of the natural history and historic landmarks programs.

Plan of work.—The visitor services program functions are performed in the Washington and regional offices to provide overall supervision and guidance for the interpretation and visitor services programs in all of the park areas, the formulation and review of master plan material and for execution of the landmarks program. Staff responsibilities include the supplying of technical advice and assistance to parks; coordinating and reviewing interpretive activities in the parks; cooperating in the interagency and interdepartmental programs of interest to the Service, and maintaining close liaison and working relationships with other agencies, organizations, and individuals engaged in work with which the Service is concerned.

The ultimate objective of the program is to provide for the maximum enjoyment and appreciation of the parks by visitors at the least possible cost through interpretive, informational, and related services and facilities. These services are carried out primarily by employees in the parks who are financed under activity 1—"Management of Park and Other Areas," of the "Management and protection" appropriation.

(c) *Lands and water resource studies*

The estimate of $590,000 is an increase of $138,000 over 1965. The amount shown as available for 1965 includes $12,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

The land-use program is a continuing one, the objective of which is to provide technical assistance in solving a variety of problems relating to uses made of park lands, such as highway and utility rights-of-way and easements, agricultural permits, private accesses, and continued use and occupancy reserved by owners in deeds of conveyance. Also involved are adverse uses, such as those covered by grazing permits, some of which were inherited from other Federal agencies, mining claims, and trespass, making appraisals of lands involved in new area proposals, and assistance in the acquisition of the non-Federal lands within the boundaries of established park areas and those authorized for establishment. The water resource studies program is also a continuing one. Its primary objectives are to (1) locate adequate sources of water supply, (2) determine the annual and seasonal water needs for the parks, and (3) determine the extent to which the water is already appropriated and the best methods by which to establish Federal rights to its use in compliance with the water laws of the several States.

The following tabulation shows the amount programed for each function:

Function	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase
Land use studies	$209,878	$220,000	$358,000	$138,000
Water resource studies	180,870	232,000	232,000	
Total	390,748	452,000	590,000	138,000

Need for increase

Land-use studies.—The 1966 estimate of $358,000, an increase of $138,000, for land-use studies will provide for a program level which will permit the Washington and regional offices to meet their responsibilities for providing technical assistance and guidance to park area managers in solving the variety of land-use problems which are present in areas administered. It will also provide for a qualified professional real estate appraiser, GS–13, and a realty clerk, GS–5, in each of 5 of the regional offices; a total of 10 additional positions.

It is becoming increasing essential that the Service's estimates of costs of proposed new area lands, as well as those involving inholdings and boundary exten-

sions, be improved. This is particularly pertinent in view of the inadequacy of many existing land acquisition appropriation authorizations. Through the employment of full-time, qualified appraisers conversant with the Department's and the Service's land policies, objectives, and the growing exacting requirements, the Service will be in a position to obtain the more accurate land data and more realistic land acquisition cost estimates required for Bureau of the Budget consideration and, in turn, legislative hearings and congressional action.

Neither the types of land data obtained nor the methods used to determine the estimated land acquisition costs have been adequate or consistent in the past. The land cost estimates, for example, have in many cases necessarily been obtained from the assessed valuation (for tax purposes) of the lands and improvements planned for acquisition. In other cases, partial or incomplete appraisals or comparable sales prices have been the basis for determining the estimated cost figures. In the past, the Service's land cost estimates generally have been too low.

It has been determined that the estimated cost of land for each proposed area and each boundary revision should be made by a qualified appraiser. It is felt that the past deficiencies and weaknesses can be overcome with the increase requested herein which would provide salary and general expense funds for a staff real estate appraiser and a clerk in each of five of the regional offices.

It is anticipated that a more critical review of the cost estimates will now be made at all levels (departmental, Bureau of the Budget, and congressional) with the expanded and accelerated land acquisition activity contemplated under the Land and Water Conservation Fund Act. Appraisals involving the same land may have to be made several times (over a period of years) due to the fluctuating trends in realty values throughout the United States and the usual time lag between the proposed area studies, legislative considerations, congressional authorizations, and the ultimate land acquisition leading to establishment of new park areas. The employment of intermittent, part-time, or contract appraisers for these continuing studies and needs has not proven practical, and funds are urgently needed for the full-time employment of such specialists to facilitate this important function.

Plan of work

Land-use studies.—The work plan contemplates providing necessary technical services and guidance to Service officials at the park, regional, and Washington office levels concerning various land use, land appraisal, and land acquisition matters as discussed in the foregoing. The functions are performed by employees of the Service at the regional and Washington office levels.

Water resource studies.—This program calls for a continuing effort to locate sources of water supply necessary for operating the parks and for use of visitors, and the determination of methods for establishment or acquisition of rights to the use of such sources in compliance with the water laws of the several States. The work is performed primarily under the technical guidance and supervision of the staffs in the regional and Washington offices, with some technical assistance provided by the Geological Survey on a reimbursable basis. Where feasible and practicable, contracts with local consulting engineers, geologists, ecologists, and other professional specialists are utilized in making these technical studies.

(*d*) *Archeological investigations and salvage*

The estimate of $771,000 is the same as the amount available for 1965. The amount shown as available for 1965 includes $6,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

This is a continuing program the objectives of which are (1) to recover a minimum of 10 percent of the scientific archeological data threatened with destruction by multipurpose water control and other construction activities, (2) to disseminate information available, through publication to professionals, interested laymen, etc., concerning material objects recovered, the implications of their special relationships to one another, and scientific relationship to similar classes of data, and (3) to inventory basic archeological values in areas administered by the National Park Service and make them available for display, comparison, and further study.

Plan of work.—This program deals with archeological surveys, investigations, and/or excavations in reservoir areas under construction by Federal agencies, in the areas of the national park system, areas of urban renewal and expansion supported by Federal funds, and cooperation with other agencies in the preservation and protection of historic and prehistoric remains. The major portion of

the work (70 to 80 percent) is accomplished through contracts with qualified State and local educational and research institutions.

In 1966, the program contemplates surveys and salvage in approximately 67 reservoir areas in 27 States, and archeological investigations in 34 park areas. The funds requested in 1966 will (1) materially reduce the backlog of previous years; (2) provide more adequate sampling in each of the areas worked; and (3) narrow the gap between the pace of construction and that of archeological investigations.

(e) *Historic American buildings survey*

The estimate of $152,000 is the same as the amount available for 1965. The amount shown as available for 1965 includes $7,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

The objective of this program is to make and preserve records of existing structures of historic and architectural significance in the United States and its possessions before time, urban renewal, and other construction work destroys this cultural background of American history. The program is carried out under the authority of the Historic Sites Act of August 21, 1935.

This is a continuing national program undertaken with the cooperation of the American Institute of Architects to develop a national archive of historic American architecture maintained in the Library of Congress. The program was initiated during the depression, suspended during World War II and the immediate postwar years, and reinstituted under the Mission 66 program. The historic American buildings survey and the historic sites survey, as separate programs, stand in complementary relationship under the authority of the Historic Sites Act.

Plan of work.—The historic American buildings survey is focusing its effort on the assembling of historic data, photographs, and measured drawings of nationally significant and culturally important buildings in every section of the country, and representing every century of its development. The work has sometimes been termed a national cultural insurance policy. In many instances recording has been accomplished just before a building's demolition, and in other instances the honor conferred by historic American buildings survey certification has been a deterrent to destruction. In many cases buildings have been restored or entirely reconstructed on the basis of these records. The survey acts as a positive conservation force through cooperation and collaboration with governmental agencies at all levels, historical societies and preservation groups throughout the Nation.

There is a demonstrated need by the public and other Government agencies for this program. Urban renewal legislation has come to be recognized as an ally of historic preservation, and the survey is prepared for collaborative action to further common conservation commitments. The experience of the historic American buildings survey will be made available to guide decisions on historic architecture in the urban centers of the United States.

Collaborative work programs, now such an important element in the method of operations of the historic American buildings survey, have a particular pertinence with respect to the leading architectural schools in the recruitment of summer measuring teams. Close participation by the survey in architectural research and recording as a portion of the official architectural curriculums has been actively stimulated. Honorariums for the most proficient students are incentive for special efforts. Moreover, this method contains a hidden bonus because the colleges offer all of the drawings of the various buildings measured and those of acceptable quality become available for deposit in the Library of Congress. More than a dozen professional schools participate in active student programs, and discussions with others have reached a promising stage. Cumulative effectiveness of the summer programs are incalculable. Stimulating an awareness of these schools to the educational importance of the survey experience is vital to all advance planning and the established momentum.

(f) *Historic sites survey*

The estimate of $160,000 is the same as the amount available for 1965. The amount shown as available for 1965 includes $5,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

This is a continuing program the purpose of which is to discharge the Secretary of the Interior's responsibilities as set forth in the Historic Sites Act of August 21, 1935; namely, to make surveys that will lead to the preservation for public use

of historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States. The basic data developed by the program aid the Federal Government in determining its role in historic and prehistoric preservation. In like manner, State and local preservation groups are encouraged to take a more active part in saving the historical heritage. These data are also necessary in preparing Presidential proclamations, national historic site designation orders, departmental reports on proposed legislation, replies to congressional inquiries and to private and semipublic requests regarding the preservation of important sites. They are also essential in assisting the Department of the Army, Bureau of Reclamation, Corps of Engineers, and the Office of Territories in their historic sites problems.

Plan of work.—The work of the survey is performed by technical employees of the National Park Service assigned to the three phases of the program, and by contracts with qualified professional historians, architects, and archeologists outside the Service.

Phase I of the national survey of historic sites and buildings began with the inventory and evaluation of sites and buildings, which is continuing. In this phase, historic and prehistoric sites are inventoried and studies are made to determine which sites possess exceptional value (national significance) in commemorating and illustrating the history and prehistory of the United States, and are therefore worthy of preservation as part of the American heritage.

Phase II is the registry of national historic landmarks, which involves entering into simple preservation agreements with the owners of nationally significant properties, and the issuing to them of certificates and plaques. Under this phase of the program, technical assistance is provided to site owners in the preservation of their properties. This approach to the preservation of historical and archeological sites of value to the Nation as a whole is a most economical one, and at the same time provides for the widest participation on the part of individuals, organizations, communities, and States, as well as the Federal Government.

Phase III is the publication of the survey studies, so that the basic historical data are available to all.

5. Concessions Management

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase
(a) Management	$198,702	$231,000	$249,000	$18,000
(b) Audit	272,045	303,000	303,000	
Total	470,747	534,000	552,000	18,000

(a) Management

The estimate of $249,000 is an increase of $18,000 over 1965. The amount shown as available for 1965 includes $9,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

The purpose of the program is to supervise, coordinate, and regulate the establishment, operation, and maintenance of facilities and services being furnished, or to be furnished, by concessioners to the public in areas administered by the National Park Service. The objective is to have developed, by private capital within such areas, sufficient clean, modern, and efficiently operated facilities and services to insure the visiting public a comfortable and enjoyable visit within the area at prices they can afford to pay. In addition, the important function of furnishing guidance and assistance to municipalities, other Government agencies, State, and foreign governments will be continued.

Need for increase.—As a result of the exceptions taken by committees of Congress to existing policy, there is a backlog of some 20 contracts which will have to be negotiated and processed as soon as policy matters are resolved. In addition, increased activities are being generated because of new areas added to the national park system, such as Flaming Gorge, Glen Canyon, Cape Cod, Padre Island, Canyonlands, Point Reyes, Ozark Rivers, etc., the expanding

and upgrading of existing concessions, and the addition of concessions operations required in existing areas. The program increase of $18,000 is needed to help defray increased costs in the regional and Washington offices, such as those incident to employment of consultants and other assistants needed on a temporary basis, economic studies, financial surveys, professional training in the hotel and restaurant field of Service personnel, and travel and other general expenses in connection with the authorizing of new concessions operations and the negotiations of new contracts where existing ones have expired.

Plan of work.—The program contemplates general and technical supervision over the establishment, operation, and maintenance of facilities and services being, and to be, furnished by concessioners to the public and the providing of technical assistance to the superintendents and their staffs relating to all phases of the program, including contract compliance, business procedures, corrective measures when appropriate, and contract terms and conditions. Since visitor housing costs are of major importance, the Service will continue its program of exploring new developments in low-cost accommodations. In addition, the program of developing new sources of concessioner financing will be continued, as well as giving assistance, when requested, to municipal authorities, other Government agencies, both domestic and foreign, in handling matters of similar nature.

(*b*) *Audit*

The estimate of $303,000 is the same as the amount available for 1965. The amount shown as available for 1965 includes $8,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

The purpose of the program is to audit the accounts and records of the concessioners and to examine their operating and financial statements to insure that the Government is paid the full amount of franchise fees due; that rates charged for goods and services are in accordance with contractual stipulations; that financial data are reliable, and that the internal financial controls are adequate to protect the Government's interest.

As visitation to the parks continues to increase, and as new parks come under the jurisdiction of the Service, it is necessary to expand concession operations accordingly. Future plans for the program provide for continuing audits and the reviewing of reports thereon covering these operations on a 3-year cycle which is considered the minimum period for achieving maximum administrative usefulness from the audit reports.

Plan of work.—The program entails the audit, by Service personnel, of the accounts and records of concessioners who provide food, lodging, transportation, and various other services and facilities to park visitors, to insure that provisions of the concession contracts have been and are being complied with. It also entails financial surveys, by Service personnel, of the financial ability of prospective concessioners prior to the negotiation of contracts. The plan provides for an audit of each concession operation requiring audit once every 3 years with provision for more frequent audits in particular instances when determined to be necessary.

Itemization of estimate

	Actual, 1964	Available, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$27,040,868	$29,862,000	$33,215,000	+$3,353,000
Unobligated balance	260,715			
Transferred to General Services Administration	47,417			
Appropriation	27,349,000	29,230,000	33,215,000	+3,985,000
Proposed supplemental due to civilian pay increases		632,000		−632,000
Obligations by objects:				
11 Personnel compensation	19,891,183	21,556,000	23,035,000	+1,479,000
12 Personnel benefits	1,749,937	1,877,000	2,004,000	+127,000
21 Travel and transportation of persons	578,302	680,000	850,000	+170,000
22 Transportation of things	197,816	265,000	309,000	+44,000
23 Rent, communications, and utilities	845,578	915,000	1,122,000	+207,000
24 Printing and reproduction	356,177	365,000	459,000	+94,000
25 Other services	1,284,439	1,450,000	2,482,000	+1,032,000
Services of other agencies	40,000	47,000	73,000	+26,000
26 Supplies and materials	1,073,227	1,298,000	1,469,000	+171,000
31 Equipment	971,812	1,254,000	1,387,000	+133,000
32 Lands and structures	39,350			
41 Grants, subsidies, and contributions		155,000	25,000	−130,000
42 Insurance claims and indemnities	13,047			
Total obligations	27,040,868	29,862,000	33,215,000	+3,353,000

STATUS OF MISSION 66

Chairman HAYDEN. Fiscal year 1966 is the final year of the 10-year Mission 66 program. To what extent have you reached your Mission 66 goals?

Mr. HARTZOG. Thank you very much, Mr. Chairman. A total of $494,187,000 has been appropriated for construction since the beginning of the Mission 66 program. Taking into account the $59,101,000 estimate for 1966 there will be a lag of about $91 million or about 14 percent of the schedule for the overall program that will remain unappropriated for during the 1966 period.

If the 1966 budget estimate for construction is approved we will have achieved 86 percent of the total program that was projected. We have a detailed statement not only with respect to what has been accomplished in the total program of management and protection and construction, but also what has happened to the fantastic increase in visitation to the national parks which, at this point, we would like to insert in the record.

Chairman HAYDEN. The statement will be entered in the record.

(The statement referred to follows:)

MISSION 66 PROGRAM

When the Mission 66 program was launched on July 1, 1956, the Service administered 181 parks and other areas. Since then, a net of 37 other areas have been authorized or added, bringing the total to 218. Visitors have increased more than 61 percent over the approximate 60.3 million in fiscal year 1956, and we expect to have 117 million visitors in 1966, as compared to the 88.8 million contemplated at the time the program was launched. Overnight camping has doubled since 1955. The foregoing reflects the general growth of our workload.

Cost estimates for the Mission 66 program were projected on the basis of the system as it existed in 1956. Total development costs were estimated at $459 million; they have been updated to $644,325,000, an increase of $185,325,000. The increase takes into account development needs of new parks; a 22-percent increase in the cost of road construction and a 44-percent increase in cost of gen-

eral construction (as of September 1964) over the cost indexes on which the original estimates were based. A total of $494,187,000 has been appropriated for construction since the beginning of the program; and taking into account the $59,101,000 estimate for 1966, there will be a lag of about $91,037,000 or about 14 percent of the schedule for the overall program; if the 1966 budget estimate for construction is approved, the program will have reached 86 percent of its goal with respect to park developments. The Service is most pleased at the prospects of reaching this level of attainment. It is grateful for the consideration and support given the program by the Department, the Bureau of the Budget, and the Congress.

Visitors [1]

1964 visitors	102,475,145
1956 visitors	60,300,000
Increase	42,175,145
Current visitor forecast for 1966	117,500,000
Original Mission 66 visitor forecast for 1966	88,800,000
Increase over original estimate	28,700,000

[1] Visitors figures do not include those for certain areas in the District of Columbia.

Mission 66 funding

Original Mission 66 funding schedules	$459,000,000
Construction cost increases	96,360,000
New Mission 66 base	555,360,000
Add funds programed for "new legislation" or projects not contemplated by the Mission 66 program	78,770,000
Add funds programed for new areas in the 1966 fiscal year estimate	10,195,000
Adjusted Mission 66 "needs"	644,325,000
Appropriated or programed through 1965 fiscal year	494,187,000
1966 estimates	59,101,000
Apparent program authorization level	553,288,000
Lag or deficiency in Mission 66 program (14 percent)	91,037,000
Total Mission 66 needs	644,325,000

COORDINATION WITH BUREAU OF OUTDOOR RECREATION

Chairman HAYDEN. Will you please comment to the committee on the coordination of your activities with those of the Bureau of Outdoor Recreation?

Mr. HARTZOG. Sir, during the past year we have completed an agreement with the Bureau of Outdoor Recreation covering those activities about which the committee raised questions last year. These pertain particularly in the areas of national park system planning and also to river basin and general recreation area work.

We have a copy of that agreement which, with your permission, we would be pleased to enter in the record.

(The agreement referred to follows:)

MEMORANDUM OF UNDERSTANDING BETWEEN BUREAU OF OUTDOOR RECREATION AND NATIONAL PARK SERVICE

This memorandum of understanding is intended to clarify the responsibilities and functions between the two agencies, as follows:

1. *National park system planning.*—The National Park Service is responsible for national park system planning, including national recreation areas to be administered by it. The national park system is a part of the nationwide

recreation plan of the United States which is the responsibility of the Bureau of Outdoor Recreation. Accordingly, to facilitate the greatest possible coordination between the two agencies in performing their respective functions, the National Park Service shall notify the Bureau of Outdoor Recreation of any study proposal the Service undertakes and the Bureau will notify the Service of any study proposal it undertakes that is likely to involve or affect the Service and its plans. To enable the National Park Service and the Bureau to discharge their respective responsibilities, each shall provide the other with copies of their professional reports on any area proposed as a national recreation area.

2. *Federal water project studies.*—The Bureau shall be responsible for the recreation aspects of comprehensive river basin planning as sponsored by the Ad Hoc Water Resources Council or by a Federal agency and preauthorization recreation planning for projects outside of the river basin concept, including the updating of feasibility planning where warranted.

The Service shall (*a*) have primary responsibility for the historical, archeological, and natural sceince aspects of all comprehensive river basin planning and shall (*b*) provide technical assistance for the Bureau in its preauthorization studies in those established fields of endeavor where the Service is experienced, such as general development planning and related activities.

The Service shall also be responsible for all postauthorization assistance involving development planning, site planning, consultation pertaining to the development, interpretation, and operation of recreation areas, reservoir management planning, negotiation of agreements for administration of reservoir recreation areas, and in the followup on administration of such agreements.

3. *Federal contacts and activities.*—The Bureau of Outdoor Recreation will assume primary responsibility for (1) surveys or studies relating to the formulation of the nationwide outdoor recreation plan; (2) special studies involving several Federal or non-Federal agencies having outdoor recreation responsibilities; (3) determining an area's suitability for designation as a national recreation area, and, if suitable, recommending which Federal agency should administer; or (4) special studies assigned by the secretariat or the Recreation Advisory Council.

The National Park Service will assume primary responsibility for studies or surveys which (1) involve historic, archeologic, and special natural science themes; (2) are initiated to evaluate potential additions to the national park system; (3) are requested by other Federal agencies to provide assistance in development, operation, interpretation, and planning for proposed or existing specific areas or systems of areas and provision of consultative assistance on same subjects; or (4) special studies assigned by the secretariat.

In the event that field investigation or subsequent review reveals the desirability of shift of primary responsibility from one agency to another, such shift will be made. Should as the result of such study or any other study conducted by the Bureau of Outdoor Recreation, the National Park Service be recommended as the agency to administer a particular existing or potential national recreation area, and upon approval of such recommendation by the Secretary of the Interior, the Service will from that time on have the primary responsibility for all basic followup planning and action on the proposal.

4. *Other contacts and activities.*—The Bureau shall be responsible for cooperating with, assisting, and advising other Federal agencies, States, local governmental entities, and others, on broad recreational planning including the nationwide recreation plan, the allocation of grants-in-aid funds, etc.; and basic coordination and liaison between Federal agencies and non-Federal interests in matters pertaining to outdoor recreation. (This should not prevent direct contacts between Federal agencies and State or local agencies of like disciplines.)

The Service is responsible for cooperating with, assisting, and advising other Federal agencies, States, local governmental agencies, and others, with respect to specific area planning, management, interpretation, protection, maintenance, and operating problems, including development of specific projects, parks recreation areas, etc.

EDWARD C. CRAFTS,
Director, Bureau of Outdoor Recreation.
GEORGE B. HARTZOG, Jr.,
Director, National Park Service.

Approved September 2, 1964.

STEWART L. UDALL,
Secretary of the Interior.

TERMINATION, TRANSFERS, AND CONSOLIDATIONS

Chairman HAYDEN. Several days ago I asked that you be prepared to supply information to the committee with regard to each action of termination, transfer, or consolidation of activities, stations, or facilities of your Service referred to in fiscal year 1966 justifications or otherwise announced. These will be fairly detailed, I understand, so will you please insert these data in the record.

Mr. HARTZOG. We will be delighted to, sir. We have the statements.

(The information referred to follows:)

PROGRAM SAVINGS INDICATED IN CONGRESSIONAL JUSTIFICATIONS, FISCAL YEAR 1966

It is anticipated that program savings resulting from organizational realinements will accrue in fiscal year 1966 in the estimated amount of $450,000 as a result of two separate actions, as follows:

1. Closure of park field finance offices

Action is being taken to close all of the park field finance offices (presently a part of the superintendent's offices) and to consolidate the payrolling, accounting, and financial reporting work now handled in them, in the regional offices. There were 14 such offices in operation at the beginning of the 1965 fiscal year. This action is being taken in the interest of economy and efficiency of operations and will result in a net savings of around $150,000 in 1966 and a reduction of more than 40 permanent full-time positions, as indicated on the enclosed supplemental tabulation. Automatic data processing equipment will be installed in the regional offices to facilitate execution of the functions on a regionwide basis. It is anticipated that some of the incumbents of the positions to be eliminated will be offered opportunities to move to the regional offices to help handle the additional workload that will be generated in those offices incident to the consolidation of the accounting and related functions. Every effort will be made to offer suitable positions to the other employees involved in other areas and offices of the Service. It is hoped that, if the employees are willing to move, suitable arrangements can be made to place them. Reduction-in-force action will not be resorted to unless it is absolutely necessary to do so in an individual situation.

2. Review of workload, organization, and staffing of regional offices and field design and construction offices

A comprehensive review of the organizational arrangement of the regional offices (except National Capital region) and the field design and construction offices is now underway and is aimed at determining the most efficient and effective way to carry out the mission of the Service. It is estimated that when the study has been completed and conclusions have been reached as to what changes in those offices should be made, the organizational realinements will result in a net savings of approximately $300,000 in 1966. Until the study is completed it is not possible to forecast with accuracy the reduction that may be expected in permanent full-time positions.

SUMMARY OF ESTIMATED EFFECT OF CLOSURE OF PARK FIELD FINANCE OFFICES (LOCATION, SAVINGS, AND POSITIONS)

Geographic location of park field finance office	Anticipated or actual date of closure	Estimated net amount of savings [1]		Net number of positions estimated to be abolished by end of fiscal year 1966	Park field finance office function to be transferred to—
		Annual (after 1966)	Fiscal year 1966		
Blue Ridge Parkway, Va	July 1965	$21,000	$14,000	4	Southeast regional office, Richmond, Va.
Everglades National Park, Fla	March 1965	10,400	10,400	2	Do.
Glacier National Park, Mont	October 1965	15,700	6,600	2	Midwest regional office, Ohama, Nebr.
Grand Canyon National Park, Ariz	November 1965	15,700	5,400	2	Southwest regional office, Santa Fe, N. Mex.
Grand Teton National Park, Wyo	April 1965	15,700	14,400	2	Midwest regional office, Omaha, Nebr.
Great Smoky Mountains National Park, Tenn	November 1965	15,700	5,400	3	Southeast regional office, Richmond, Va.
Lake Mead National Recreation Area, Nev	September 1965	10,500	5,300	2	Southwest regional office, Santa Fe, N. Mex.
Natchez Trace Parkway, Miss	May 1965	15,700	13,100	3	Southeast regional office, Richmond, Va.
Rocky Mountain National Park, Colo	November 1964	15,700	15,700	2	Midwest regional office, Omaha, Nebr.
Sequoia-Kings Canyon National Parks, Calif	June 1965	21,000	15,800	4	Western regional office, San Francisco, Calif.
Shenandoah National Park, Va	September 1965	10,400	5,200	2	Southeast regional office, Richmond, Va.
Yellowstone National Park, Wyo	November 1965	21,000	7,200	4	Midwest regional office, Omaha, Nebr.
Yosemite National Park, Calif	December 1964	21,000	21,000	5	Western regional office, San Francisco, Calif.
Zion National Park, Utah	October 1964	10,500	10,500	2	Southwest regional office, Santa Fe, N. Mex.
Total		220,000	150,000	[2] 39	

[1] The amounts of savings are reflected in net amounts only. It is not feasible to project gross savings in connection with this program as several very indefinite elements are involved, i.e., the time required to effect placement or separation, if necessary, of employees affected, lump-sum leave costs, transfer costs for employees, possible timing variations in dates of closing field finance office functions, delivery and installation of necessary automatic data processing equipment, etc. While these factors are also applicable to net savings, it is considered that a projection of the total impact can be more reasonably estimated.

[2] In addition, it is anticipated that 3 other permanent, full-time positions may be eliminated after automatic data processing equipment is installed in the Northeast and National Capital regional offices; no park field finance offices are scheduled to be consolidated in them.

Surveying and Monumenting Park Boundaries

Chairman Hayden. One of the new projects in the budget this year is a program for surveying and monumenting park boundaries for which you ask $100,000. What do you estimate to be the total cost of this program which you indicate will require 10 years?

Mr. Hartzog. Sir, we estimate that the total costs will be about $2.5 million and that the program level should increase to about $250,000 a year.

Chairman Hayden. What is the necessity for this?

Mr. Hartzog. Sir, as urban environments encroach more and more on the national park system it becomes increasingly important to document the boundary lines so as to eliminate conflicts between adjoining property owners and the Federal lands included in these areas. This has been a growing problem.

As our population increases, the parks become more and more surrounded by centers of population.

Senator Mundt. Mr. Chairman, may I ask a question here?

Chairman Hayden. Surely.

Senator Mundt. I was intrigued by this. It seemed incredible that we haven't known the boundaries of the national parks up to now.

Mr. Hartzog. Sir, this is true. About 100 parks will be involved in this program where we do not know the precise boundaries. They have never been monumented. Where they have been surveyed and the lands acquired, in many cases the boundary lines referred to natural landmarks which have since disappeared and it is necessary to reestablish them and monument them.

This is particularly true in the East and also to some extent in the West where the monuments have disappeared over the years.

Senator Mundt. Thank you.

Motion Picture Program

Chairman Hayden. On page 29 of your justifications you indicate that there will be produced four interpretive motion pictures. What areas will these four pictures cover?

Mr. Hartzog. Sir, we expect to have these four pictures dealing with the specific areas of Cape Cod, Acadia, Shenandoah, and Grand Portage. However, they will be general interest films which we will be able to show in other of our interpretive programs.

We have started experimenting with a program of these motion pictures which we believe has a tremendous potential of saving money in the long run in terms of our overall interpretive program.

In some instances, for example, where we have been building museums, we think that we could probably even better tell the story with an auditorium and a motion picture than we could with a fixed investment in a museum. We are hoping in this way to improve the quality of our interpretation.

Contracts for Advisory and Testing Services

Chairman Hayden. How much do you propose to allocate to contracting for advisory and testing services to discover new and better methods of sound control, et cetera?

Mr. HARTZOG. In this estimate, sir, there is about $6,000 for this purpose. The problem that we are trying to get at relates to the difficulties in operating these automatic pieces of equipment in isolated stations. In many places such as our self-guiding trails, for example, we now have these audioboxes.

What we need is a better system of controlling the quality of the sound control programs. Raytheon Corp. has done some work with us in this program and we are hoping to be able to continue it and to step it up. The amount of about $6,000 will be needed for this purpose this next year.

Chairman HAYDEN. Do not commercial companies do this sort of research?

Mr. HARTZOG. Raytheon is working on this type of program. We have not entered into any contracts specifically for this kind of work at this time. But we hope, if we get this money, that we will be able to do so in the next year to the extent of about $6,000.

NATURAL SCIENCES STUDIES

Chairman HAYDEN. What specific project do you propose with the funds which you request for natural sciences studies?

Mr. HARTZOG. Sir, we have a statement of the projects proposed for the increase which we should be pleased to insert in the record.

Chairman HAYDEN. That will be good.

Mr. HARTZOG. Thank you, sir.

(The statement referred to follows:)

PROJECTS INCLUDED IN INCREASE REQUESTED FOR 1966 FISCAL YEAR

MISSION-ORIENTED RESOURCE STUDIES PROGRAM—NATURAL SCIENCES

WILDLIFE (ELK, DEER, AND BIGHORN)

Statement of the problem

Abnormal increases in elk and deer have resulted in severe range depletion, soil erosion, a decline in bighorn through excessive competition, and disturbance of forest reproduction in certain parks. Trapping and other methods of direct reduction by the Service, and special hunting seasons established by the States outside the parks, are presently keeping these herds within certain limits. But this expedient provides no sound base for long-term management. To what levels must these populations be brought to permit range recovery? What populations will a fully restored range support? What is the degree of open range and forest depletion, and how can these be restored? Which of several summer herds are involved in the overpopulation? What are their migratory patterns? To what degree do these different herds mingle on the winter range? At what time and at what place can the control of the problem herds be most effectively accomplished? Can migration patterns be manipulated to avoid damaged areas?

Despite more than 50 years of protection, bighorn have continued to decline in national parks. In the United States as a whole, poaching, competition with domestic livestock, disease and predation, have often been blamed but these factors appear to be insignificant or absent in the parks. Competition with increasing numbers of other native animals for forage is suspected as an increasingly adverse factor in the parks.

These are some of the practical problems that need answers for more effective control and subsequent management of the animals mentioned.

Information needed

Data are needed concerning the individual characteristics of each species mentioned. Generally, data obtained in one location are applicable to the species in other locations. Thus, a carefully done project for one park often lays the basis for comparison and general application in other areas. The range re-

quirements of elk, for example, their response to population pressures, the behavior of their reduced population resulting from controls, and effects of predators, are important factors in their management and are of general application. It is imperative that the true factors causing bighorn declines in the various national parks be identified, and as promptly as possible modified through appropriate management measures.

Specific data are needed concerning the characteristics of individual park herds. These include population data, migratory routes and dates, degree and effect of range competition among elk, bighorn, and deer. The respective range characteristics and their capacity for restoration and improvement, effects of adjustment of adjacent hunting areas and dates, methods of adjustment of reintroduced herds to their new surroundings, and causes of reproductive failure.

Cooperating agencies: U.S. Forest Service; Bureau of Land Management; Bureau of Indian Affairs; cooperative State-Federal wildlife research units; State universities; State fish and game departments.

Principal study areas

	Estimated, 1966
Glacier, Yosemite, Sequoia, Rocky Mountain, Acadia, Zion and Lassen National Parks	$37,650
Increases for going projects: Badlands, Dinosaur and Grand Teton National Parks	3,450

RESOURCE SURVEYS—FISHERIES

Statement of the problem

Fishing is the only consumptive recreational use of park resources permitted by law, but park fishery sites are among the most poorly known resources of the national park system.

Information needed

Data on the chemical, biological and physical characteristics of park streams and lakes, and their capabilities for producing and sustaining native fish species.

Specific data for major lakes and streams on:

(*a*) Dissolved oxygen, alkalinity, turbidity, temperature, carbon dioxide content at different lake depths throughout the year, lakebed morphometry, thermal stratification, stream flow speeds and volumes, presence of pools, pollutants, and obstructions to flow.

(*b*) Abundance and sequence of phytoplankton and zooplankton population development throughout the year.

(*c*) Qualitative and quantative survey of invertebrate bottom fauna available for fishfood at various times of the year.

(*d*) Qualitative and quantitative analysis of fish fauna (both game and nongame) present, growth analysis of each species, year class success and population age structure, mortality rate, fecundity, longevity, parasites, condition of plumpness, food habits, and fishing effort and success.

(*e*) Surveys for potential areas and other conditions conducive to spawning for each fish species including adequate depth substrata, temperature conditions, stable water levels, and submergent vegetation or other sources of protection for young fish.

(*f*) Analysis of watersheds for source of nutrients, minerals, and adequate supply of water throughout the year. Cooperating agencies: University of Wyoming; Wyoming Game and Fish Department.

Principal study area

	Estimated, 1966
Grand Teton National Park	$6,900

ECOLOGICAL VEGETATION STUDIES

Statement of the problem

The basic living resource of any area is its vegetation. Upon it depends all wildlife. Furthermore, special features such as mountain meadows are important in their own right. Whenever the naturally occurring factors responsible for the development of the vegetative cover are altered or removed, a change in

the vegetation occurs and sets off chain reactions affecting the whole spectrum of the biological community. Often these specific species and features of importance are threatened. The most critical changes are those resulting from the impact of human activities such as the trampling of soil, overprotection of forest and meadows, the lowering of water tables, the pollution of soils by toxic substances, the destruction of plant cover, the introduction of weed species, and the like. The results of these changes have been many and varied within the national parks. The invasion of mountain meadow areas by forest trees threaten the existence of these scenic features. Invasions by weed species and changes in the overall plant composition of certain environments are evidences of poor ecological health.

Information needed

The problem is one of determining for each of the problem situations (1) what were the constituents of the original natural vegetation types; (2) how has this changed in response to natural and man-caused influence, and by what means; (3) how can such environments be restored and maintained in their natural state, offsetting the effects of human activity.

To answer these questions it is necessary to have the following kinds of data, varying with the nature of the individual problem situations: (1) the specific environmental requirements of individual plant species and of the habitats in which they occur; (2) the plant composition of the problem vegetation types and the degree and rate of change; (3) the effect of human use such as the amount and rate of soil compaction, changes in soil, alterations in ground water and other moisture patterns; (4) the effect of the presence of weed plants, of introduced animal species, and of overabundant natural wildlife on the natural vegetative cover.

Principal study area

	Estimated, 1966
Great Smoky Mountains National Park	$2,000

PARK OPERATIONS STUDY

Chairman HAYDEN. Another new item in your justification for fiscal year 1966 appears on page 35, the park operations study program for which you request $50,000. Do you have an estimate of the total cost of this study program and of the length of time which will be required to perform it?

Mr. HARTZOG. Mr. Chairman, with your permission, I will ask Mr. Montgomery to comment on this program.

Mr. MONTGOMERY. Mr. Chairman, we think at least 2 years will be required at this program level to accomplish a very significant part of the program. What we are trying to do at first is to determine standards for staffing in the various park areas.

We are working first with respect to the uniformed staff to work out a standard to determine how many rangers, naturalists, historians, et cetera, we need in each area. Up until now it has been a judgment proposition. The superintendent estimates his requirements and they are reviewed in the regional offices and in the Washington offices and the needs of one area are considered in relationship to the needs of others. Until now it has worked out very well because we have been in the process of catching up with the workload. From here on, however, we need a more scientific basis for determining these needs and for allocating funds and staffing among the various areas. This is the thing we propose to accomplish first through this study, and we feel it will take 2 years at $50,000 a year to accomplish the first part of it.

From there on, we would broaden out and make these determinations with respect to maintenance and construction and our other programs.

We would also in this program determine development requirements, the size and scope of improvements needed, and we would determine further where they should be placed in the parks on a scientific basis as opposed to a judgment basis as has been the case more or less in the past.

So, 2 years at a minimum, but we think that we will need to carry the program beyond that do what needs to be done.

Piscataway Park Lands

Chairman Hayden. On page 43 of your program in connection with your discussion on the National Capital Parks, I find a statement to the effect that you have acquired 248 acres of land in the Piscataway Park across from Mount Vernon. As I recall, funds have been made available for purchase of 133 acres belonging to the Clagett family. Were the other 115 acres donated to the Park Service?

Mr. Hartzog. Mr. Chairman, your understanding is correct. The money was provided for 133 acres. When we got into the actual survey and acquisition of it, it actually turned out to be less than that and the remaining acreage that makes up the 248 was donated.

In other words, we have only acquired the Clagett property with the money you gave to us. The rest of it was donated by the Accokeek Foundation, Inc.

Informational Publications

Chairman Hayden. With regard to informational publications what portion of the $70,000 increase over the fiscal year 1965 appropriation is for printing a larger number of the publications?

Mr. Hartzog. Sir, we estimate that about $50,200 of this amount will be used for printing about an additional 3 million publications. This is in response to the mounting visitation to the areas of the national park system and particularly in response to the newly authorized areas.

And about $17,800 of it is for the modernization of the cartographic equipment for making maps, and this kind of thing that goes into the publications.

Chairman Hayden. Does the U.S. Travel Service, which makes numerous requests for these publications, reimburse the Park Service for their costs?

Mr. Hartzog. No, Mr. Chairman, they do not reimburse us in funds. However, some of the publications which the Travel Service gets out can be utilized particularly in the multilingual areas where we have great visitations such as some of the Spanish forts in Florida, and at Independence Hall, and at other places. So they do give us a limited number of these multilingual publications for our use, particularly the publication they produced on the areas of the national park system which they use for oversea distribution.

Last year we gave the U.S. Travel Service about 50,000 publications. So there is not a great deal of interchange between the two programs.

USE OF AIRCRAFT IN FIREFIGHTING

Chairman HAYDEN. In your discussion of fire protection service there is a statement that the increase of $90,000 will be partly used to provide additional aircraft services. Does the Park Service own its own firefighting planes or does it contract with commercial companies for such service as is necessary?

Mr. HARTZOG. Sir, we own two small planes, one at Everglades, and one at Lake Mead which was provided by the Congress recently, and these are used to a small extent during the fire season as part of our equipment. The remaining aircraft that we use in these and other areas are through contract and charter arrangement.

Senator MUNDT. What fire are you worrying about at Lake Mead?

Mr. HARTZOG. That is used principally for rescue operations. But during the periods of fire danger, and they do have some forests up on the Shivwitz Plateau, it is available and used for fire protection purpose.

Senator MUNDT. They have a lot of sagebrush?

Mr. HARTZOG. Yes, sir. It is used for that, but it is an incidental use. The two are used incidentally, but the bulk of our work is through contract and charter service and cooperation with the U.S. Forest Service.

FIRE SUPPRESSION COSTS IN 1965

Chairman HAYDEN. As usual, you request only $100,000 for forest fire suppression, but we know that you will have to ask for a supplemental appropriation. How much do you expect that this supplemental request will amount to in fiscal year 1965?

Mr. HARTZOG. Sir, our records show additional requirements of $145,000 to date; for the rest of the year our experience would indicate that this would be in the vicinity of $120,000, a total of $265,000.

COORDINATION WITH FEDERAL AGENCIES, STATES, AND BUREAU OF OUTDOOR RECREATION

Chairman HAYDEN. In connection with your cooperative activities under the park and recreation programs, would you please explain to the committee the relationship between the work which you do for park system studies and Federal agency and State assistance and the activities of the Bureau of Outdoor Recreation?

Mr. HARTZOG. Thank you, sir. Sir, the national park system plan which is the responsibility of the National Park Service is but one facet of the nationwide outdoor recreation plan which is the responsibility of the Bureau of Outdoor Recreation. So, these activities are coordinated very closely with the Bureau of Outdoor Recreation. And while we do our own planning for these areas, we provide copies of the reports for the Bureau of Outdoor Recreation.

This is a matter that is covered by this agreement between Dr. Crafts and me which was placed in the record a while ago. We have eliminated any overlap in this area. With respect to the Federal and State assistance program, this has also been clarified in the agreement.

Our assistance is given in the areas of our expertise, park management, development, and land planning. Their assistance is on the broad scale of planning for the statewide recreational program and

such other broader assistance as may be needed other than that pertaining to a specific operation.

In other words, generally what we have done is to get out of the broad assistance program to the States. And we now provide the local assistance to a park, or a series of parks, on what we have in the field of management or interpretation or maintenance and these kinds of activities. This has been clarified in this agreement.

Regional Real Estate Appraisers

Chairman Hayden. You are requesting funds for a qualified professional real estate appraiser and a realty clerk in each of your five regional offices. Do you have no such personnel now?

Mr. Hartzog. Sir, we have some appraisers, but they are assigned to land acquisition work in the Washington office and at some of the newly authorized areas. We have been able to bring about the improvements that we have in the quality of our cost estimates simply by taking some of these appraisers that we have had in the Washington office, and by contracting with outside appraisers.

As a result, however, the existing workload has suffered. If we are to continue to maintain the quality of estimates which we believe we have now achieved not only for the benefit of this committee in its consideration of our land acquisition requests, but also for the Interior and Insular Affairs Committee in its consideration of authorization of new areas, we need an appraiser in each region who can carry on this function as part of his regular responsibility.

Maintenance and Rehabilitation of Physical Facilities

Chairman Hayden. There will be included in the record the statements in justification of the budget estimate for maintenance and rehabilitation of physical facilities in the amount of $24,660,000. Allocation to roads and trails requires $9,825,000, and buildings, utilities, and other facilities will need $14,835,000.

(The justifications referred to follow:)

Highlight Statement

BROAD PURPOSE AND LONG-RANGE OBJECTIVES OF PROGRAM

The maintenance and rehabilitation of physical facilities program is directed toward keeping, as nearly as possible, all park physical facilities—roads, trails, buildings, utilities, etc.—in their original condition, as constructed or as subsequently improved, and providing sanitation, utility, grounds maintenance and other services required by the visiting public.

ACCOMPLISHMENTS DURING THE PAST YEAR

The significant accomplishments during 1964, stated briefly, were the maintenance and operation of facilities which were utilized by 102.5 million visitors with only a few complaints by the visiting public of a general nature and the successful assumption of the maintenance and operation of newly constructed facilities and those in new areas activated during the year.

OBJECTIVES AND PROGRAM FOR BUDGET YEAR

Objectives for the budget year are to keep this segment of the Mission 66 program on schedule to the fullest extent possible.

The program for 1966 contemplates a continuation of the rise in visitor use and expanded maintenance and operating requirements due to the completion and placing into operation of new or reconstructed facilities, and the mainte-

nance requirements incident to the activation of new areas authorized by the 88th Congress and those to be operated under cooperative agreements with the Bureau of Reclamation.

Maintenance and rehabilitation of physical facilities

Appropriation, 1964	$21,566,750
Deficiency appropriation, 1964	400,000
Total appropriation, 1964	21,966,750
Transferred to "Operating expenses, Public Buildings Services," General Services Administration, Reorganization Plan No. 1 of 1963	−25,254
Total available, 1964	21,941,496
Appropriation, 1965	23,100,000
Total available, 1965	23,100,000

SUMMARY OF INCREASES AND DECREASES, 1966

Wage rate increases already in effect	478,400
New park areas	251,000
Park areas activated since commencement of Mission 66 now partially financed	132,100
Maintenance and operation of new and reconstructed facilities in pre-Mission 66 areas and more adequate maintenance and operation of facilities existing at commencement of Mission 66	768,500
Commercial power and telephone service connection charges	150,000
Nonrecurring item due to program savings resulting from organizational realinements	−220,000
Net increase, 1966	1,560,000
Budget estimate, 1966	24,660,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
1. Roads and trails	$8,860,709	$9,311,000			$9,311,000
2. Buildings, utilities, and other facilities	12,906,983	13,789,000			13,789,000
Unobligated balance lapsing	173,804				
Total	21,941,496	23,100,000			23,100,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase, 1966 compared with 1965
1. Roads and trails	$8,860,709	$9,311,000	$9,825,000	$514,000
2. Buildings, utilities, and other facilities	12,905,983	13,789,000	14,835,000	1,046,000
Unobligated balance lapsing	173,804			
Total	21,941,496	23,100,000	24,660,000	1,560,000

1. Roads and trails

The estimate of $9,825,000 is a net increase of $514,000 over 1965.

2. Buildings, utilities, and other facilities

The estimate of $14,835,000 is a net increase of $1,046,000 over 1965.

The net increases requested consist of—

(1) A decrease of $220,000 ($110,000 under each of the two activities) due to program savings resulting from organizational realinements.

(2) An increase of $1,780,000 ($624,000 under the "Roads and trails" activity and $1,156,000 under the "Buildings, utilities, and other facilities" activity) for the following purposes:

Purpose of increase	Roads and trails	Buildings, utilities, etc.	Total
Wage rate increases already in effect	$200,800	$277,600	$478,400
New park areas	61,000	190,000	251,000
Park areas activated since commencement of Mission 66 now partially financed	52,700	79,400	132,100
Maintenance and operation of new and reconstructed facilities in pre-Mission 66 areas and more adequate maintenance and operation of facilities existing at commencement of Mission 66	309,500	459,000	768,500
Commercial power and telephone service connection charges		150,000	150,000
Total	624,000	1,156,000	1,780,000

The programs financed under these appropriation activities are continuing ones and are directed toward keeping as nearly as possible, all park physical facilities—roads, trails, buildings, utilities, etc.— in their original condition, as constructed or as subsequently improved, and providing sanitation, utility, grounds maintenance, and other services required by the visiting public. The primary objective is to be in a position to handle satisfactorily the workload incident to the foregoing that is anticipated to obtain during 1966 and future fiscal years, taking into consideration new physical facilities being placed into operation under the Mission 66 construction program, new areas that are being added to the system, and the continued increase in visitor use of the parks.

Need for increase.—Fund requirements for maintenance and operation of physical facilities in the parks are governed principally by the size, number, and complexity of physical plants (roads, trails, buildings, utilities, campgrounds, sanitation systems, etc.), the number of visitors accommodated, and cost levels obtaining when the work is accomplished. Large-scale construction and reconstruction programs have been underway since 1957 and are planned through the budget year, resulting in the addition of many new and improved facilities. In addition, the maintenance and operation of such facilities in new parks are commenced from year to year, all of which require additional funds. The continued heavy park visitation exerts additional burden on maintenance and operating funds, and maintenance cost levels have increased steadily since, and even before, the start of Mission 66.

The increases requested are needed not only to meet currently increasing requirements but to meet annual requirements now existing that cannot be financed adequately within present resources.

All of the increases requested, except the amounts for new parks ($61,000 under "Roads and trails," and $190,000 under "Buildings, utilities, and other facilities") are for going programs. Justification for each of the increases summarized in the foregoing follows:

Wage rate increases

Roads and trails	$200,800
Buildings, utilities, and other facilities	277,600
Total	478,400

The funds requested under this item are to cover wage increases in effect as of August 15, 1964, and do not take into consideration such increases that may become effective during the balance of 1965 or during 1966. It is essential that the increase be granted in order that the maintenance and operating program level heretofore provided for will not have to be lowered due to the increased personal services costs.

New park areas, $251,000

Roads and trails	$61,000
Buildings, utilities, and other facilities	190,000
Total	251,000

Fund requirements for operating and maintaining facilities in 8 new park areas authorized during the 2d session of the 88th Congress and 2 new park areas to be operated under cooperative agreements between the Service and the Bureau of Reclamation (a total of 10 new areas) are included under this heading. Funds are not being requested for one newly authorized area (Ozark National Scenic Riverways) as maintenance needs are not expected to accrue for it in the 1966 fiscal year. The increase requested herein will provide funds and permanent positions for maintenance and operation purposes for each of the 10 new areas as follows:

Area	Roads and trails	Buildings, utilities, etc.	Total	Permanent positions
Allegheny Portage Railroad National Historic Site and Johnstown Flood National Memorial, Pa. (Public Law 88-546, approved Aug. 31, 1964) (2)	$11,300	$19,000	$30,300	2
Bighorn Canyon Recreation Area project, Montana-Wyoming (cooperative agreement approved Dec. 31, 1964)	3,500	8,800	12,300	----------
Canyonlands National Park, Utah, (Public Law 88-590, approved Sept. 12, 1964)	26,800	27,000	53,800	2
Curecanti Recreation Area project, Colorado (cooperative agreement now in final stages of negotiation)	4,500	25,900	30,400	1
Fire Island National Seashore, N.Y. (Public Law 88-587, approved Sept. 11, 1964)	4,500	46,400	50,900	3
Fort Bowie National Historic Site, Ariz. (Public Law 88-510, approved Aug. 30, 1964)	4,400	11,000	15,400	----------
Fort Larned National Historic Site, Kans. (Public Law 88-541, approved Aug. 31, 1964)	3,800	20,100	23,900	1
John Muir National Historic Site, Calif. (Public Law 88-547, approved Aug. 31, 1964)	----------	12,700	12,700	1
Saint-Gaudens National Historic Site, N.H. (Public Law 88-543, approved Aug. 31, 1964)	2,200	19,100	21,300	1
Total	61,000	190,000	251,000	11

Park areas activated since the beginning of Mission 66 now partially financed

Roads and trails	$52,700
Buildings, utilities, and other facilities	79,400
Total	132,100

This item is a companion to the one for which an increase is requested under subactivity 1(a) of the "Management and protection" appropriation as discussed beginning on page NP–19 of these justifications. The amount included in the 1965 "Maintenance and rehabilitation of physical facilities" appropriation for each of 25 areas activated since the beginning of Mission 66, or soon to be activated, the number of permanent positions provided for, the amounts and positions

proposed for 1966, and the increases in funds and permanent positions requested are as follows:

Area	1965 program		1966 estimate		Increase requested	
	Funds	Permanent positions	Funds	Permanent positions	Funds	Permanent positions
Arkansas Post, Ark	$8,200	1	$12,900	1	$4,700	
Bent's Old Fort, Colo	10,600		10,900		300	
Booker T. Washington, Va	21,700	1	21,900	1	200	
Cape Cod, Mass	111,000	7	127,200	8	16,200	1
City of Refuge, Hawaii	22,400	2	29,300	2	6,900	
Flaming Gorge, Utah and Wyo	89,900	3	107,000	3	17,100	
Fort Clatsop, Oreg	13,100	1	14,500	1	1,400	
Fort Davis, Tex	34,200	1	37,100	2	2,900	1
Fort Smith, Ark	20,200	3	21,100	3	900	
General Grant, N.Y	8,400	1	9,600	1	1,200	
Glen Canyon, Ariz and Utah	247,500	17	274,700	18	27,200	1
Grand Portage, Minn	14,500		14,500			
Hamilton Grange, N.Y	20,000	3	20,000	3		
Horseshoe Bend, Ala	23,800	3	25,000	3	1,200	
Lincoln Boyhood, Ind	14,000	1	17,700	1	3,700	
Minute Man, Mass	49,900	4	55,500	4	5,600	
Padre Island, Tex	43,400	2	49,400	2	6,000	
Pea Ridge, Ark	28,700	2	30,400	2	1,700	
Point Reyes, Calif	42,400	2	61,200	2	18,800	
Russell Cave, Ala	10,200	1	10,600	1	400	
Sagamore Hill, N.Y	37,500	5	41,100	5	3,600	
Theodore Roosevelt Birthplace, N.Y	12,500	1	13,800	1	1,300	
Virgin Islands, V.I	93,000	15	102,700	15	9,700	
Whiskeytown, Calif	38,700	4	58,400	5	19,700	1
Wilson's Creek Battlefield, Mo	14,300		14,800		500	
Total	1,030,100	80	1,181,300	84	151,200	4
Less increase for these areas included under heading "Wage Rate Increases"					19,100	
Program increase requested under this heading					132,100	

The amounts currently provided, as indicated in the foregoing, have been requested and allocated to meet minimum needs in activating the areas listed and their minimum increased requirements to date. Requirements for newly activated areas increase from year to year as progress is made in getting operations underway and in providing services and facilities to meet visitor needs. The increases requested are needed to bring maintenance and operations program levels of the areas involved more nearly in line with those of other comparable areas and to meet the workload anticipated to obtain in the 1966 fiscal year.

Maintenance and operation of new and reconstructed facilities in pre-Mission 66 areas and more adequate maintenance and operation of facilities existing at commencement of Mission 66

Roads and trails	$309,500
Buildings, utilities, and other facilities	459,000
Total	768,500

Since the beginning of Mission 66 the major purposes for which increases have been requested in the "Maintenance and rehabilitation" appropriation for areas existing at the commencement of Mission 66 have been (1) operating and maintaining newly constructed and reconstructed facilities; and (2) more adequate maintenance and operation of facilities existing at the commencement of Mission 66, including additional requirements brought about by increases in visitor use of those facilities.

While substantial headway has been made through appropriation increases in providing for more adequate maintenance and operation of facilities existing when Mission 66 was commenced and for maintenance and operation of new facilities, the standard of maintenance as contemplated in the Mission 66 program has not yet been attained. Also, as long as the visitor use workload continues to increase and new facilities continue to be placed into operation, it will be necessary to request additional funds under this heading.

The maintenance and operation of new buildings, such as visitor centers, administration buildings, utility buildings, comfort stations, entrance stations, etc.; new and improved campgrounds; new and improved utility systems; and other varied types of facilities provided in the parks under the Mission 66 construction program, bring about heavy increases in fund requirements. While some of these new facilities replace old ones for which maintenance and operation funds have previously been provided, most of them represent plant expansion, the maintenance and operation of which can be accomplished only through the provision of appropriation increases, or on a substandard basis through lowering the standard of maintenance of other facilities.

Experience of all agencies points up the fact that for the first 3 or 4 years after a road has been constructed or reconstructed, maintenance costs for drainage and shoulder and slope stabilization work are particularly high. Reconstructed roads are built to a higher standard with lesser grades, wider roadway, shoulders, ditches, and flatter slopes to safely handle increased visitor use. Accordingly, for reconstructed roads, maintenance costs are higher than for the old roads due to need for more frequent mowing, roadside cleanup, and the increased surface to be maintained on the improved road.

Many facets of the workload, comprising the maintenance and operating of buildings, utilities, and other facilities, are obvious and immediately recognized. However, it might not be fully understood that the placing into operation of a new campground requires, in addition to funds for maintaining guardrails, fireplaces, picnic tables, etc., substantial amounts for sanitation, and other cleanup service, including the replacement of garbage and trash containers as they become unserviceable. Also, in placing a new comfort station in operation, in addition to requirements for painting, plumbing repairs, structural repair, etc., the much more costly sanitation service must be performed several times daily while the facility is receiving visitor use. Many other similar operating costs, including janitor services and utilities for new visitor centers and administration buildings, which have a bearing on the Service's maintenance and operating fund requirements, could be cited.

Aside from the increased visitor use of the parks during previously recognized travel season, use patterns are changing and extending to the degree that in some heretofore seasonal parks, public use is steadily approaching a year-round basis. New public-use areas and improvements of roads tend to spread public use within the parks. Water use and back-country use are steadily increasing. Campground use increased approximately 86 percent from 1956 to 1963. In 1956, camper-days totaled 3,628,600 while in 1963, they totaled 6,745,000. All of these factors bring about progressively increasing maintenance and operation fund requirements.

The increases requested in this estimate must be provided if the many facilities are to be operated and maintained at standards that will protect the Government investment and adequately serve the visiting public during the estimate year.

The increases included under this item for the National Capital region are $20,600 for roads and trails, and $83,600 for buildings, utilities, and other facilities.

Commercial power and telephone service connection charges, $150,000

The need for this increase is explained under the "Management and protection" appropriation item.

Plan of work.—The roads and trails program contemplates maintenance and operation of primary and secondary roads, parkways, airport landing strips, and trails in such a manner as to prevent deterioration in the maintenance of existing mileage, and to provide adequately for new and reconstructed mileage. Maintenance plans and estimates are prepared by engineers based upon field inspections of existing conditions. The proposed increases will be allocated for the purpose mentioned above under the "Need for Increase." Where it is possible and economical to do so, the work will be performed under contracts with private concerns; otherwise, the functions under the roads and trails maintenance program are performed by technical, skilled, and unskilled employees of the Service assigned to these activities.

The buildings, utilities, and other facilities program contemplates the maintenance, preservation and operation of all physical facilities in the parks other than roads and trails. These facilities include buildings, structures, utilities, campsites, campgrounds, picnic facilities, prehistoric ruins, memorials, historic structures, scientific, historical, and archeological artifacts, grounds, etc.

As construction projects are completed, many diverse facilities must be maintained and operated to either directly or indirectly serve the visiting public. Many of the tasks required to be performed are routine housekeeping functions, such as cleaning and picking up litter, but there are also facilities which involve highly technical work, such as the operation of water, sewer, and sanitation systems, audiovisual installations, and preservation of priceless historic structures, paintings, and furnishings. While most of the buildings, utilities, and other facilities maintenance and operating functions are carried out by employees of the Service assigned specifically to those tasks, it will be possible and economical in many instances to enter into contracts with private concerns to have the work accomplished.

Itemization of estimate

	Actual, 1964	Available, 1965	Estimate, 1966	Increase
Program and financing:				
Total obligations	$21,767,692	$23,100,000	$24,660,000	$1,560,000
Unobligated balance	173,804			
Transferred to General Services Administration	25,254			
Appropriation	21,966,750	23,100,000	24,660,000	1,560,000
Obligations by objects:				
11 Personnel compensation	13,576,732	14,044,000	14,459,000	415,000
12 Personnel benefits	893,622	925,000	954,000	29,000
21 Travel and transportation of persons	139,908	200,000	225,000	25,000
22 Transportation of things	91,453	110,000	119,000	9,000
23 Rent, communications, and utilities	1,011,401	1,112,000	1,333,000	221,000
24 Printing and reproduction	28,247	28,000	28,000	
25 Other services	1,234,948	1,415,000	1,870,000	455,000
Services of other agencies	20,000	20,000	32,000	12,000
26 Supplies and materials	3,128,381	3,455,000	3,709,000	254,000
31 Equipment	1,541,101	1,695,000	1,826,000	131,000
32 Lands and structures	87,784	96,000	105,000	9,000
41 Grants, subsidies, and contributions	1,040			
42 Insurance claims and indemnities	13,075			
Total obligations	21,767,692	23,100,000	24,660,000	1,560,000

SUMMARY OF MAINTENANCE AND REHABILITATION INCREASES

Chairman HAYDEN. Would you please describe for the committee the work which you contemplate under this heading in the coming fiscal year?

Mr. HARTZOG. Thank you, sir.

Sir, the net increase in our maintenance activity is $1,560,000. This would be devoted, of course, to the maintenance of our buildings and utility systems and also to our campground sites, roads, and trails. The increase includes $478,400 for wage rates already in effect. This is an item over which we have no control. In other words, this is an item for wage rates already in effect for our wage board employees; $251,000 of this increase is for the operation of facilities that are provided in newly authorized areas.

So, almost half or approximately $729,000 of this increase is more or less for fixed items. Of the remainder $132,100 is for maintenance of facilities in areas that were established since the start of Mission 66; $768,500 is for maintaining new facilities provided in areas that were in existence prior to Mission 66; and $150,000 is to continue the program started several years ago of connecting commercial power and telephone services to the park areas.

Senator MUNDT. May I ask a question, Mr. Chairman?

Chairman HAYDEN. Yes.

MISSION 66

Senator MUNDT. Mission 66, is that a calendar year mission or fiscal year mission?

Mr. HARTZOG. Sir, the original concept of it was a 10-year program tied to the 50th anniversary of the National Park Service which is August of 1966. Budgetwise, it figured out to be fiscal 1966 because it was started in fiscal 1957.

Senator MUNDT. I was there when they kicked off that meeting. Are we going to get everything done that was planned?

Mr. HARTZOG. Sir, with the budget now before you about 86 percent of that total forecasted program will have been accomplished, which we think is a tremendous record and certainly is a tremendous and a concrete indication of the great interest and support which we have received from the Congress.

Senator MUNDT. The remaining 14 percent is because of change of plan or lack of money?

Mr. HARTZOG. Lack of money, sir. There is some change of plan, because of new parks, but primarily a lag between the forecasted schedule and the appropriation rate. But even so, we think it is a remarkable record and we are deeply grateful for support the Congress has given.

Senator MUNDT. I remember that night when they had the kick-off meeting. It sounded like a pretty ambitious program. Eighty-six percent completion is pretty good.

Senator YOUNG. Mr. Chairman?

Chairman HAYDEN. Yes.

FORD'S THEATER

Senator YOUNG. I don't see anything in the budget for the work on Ford's Theater. Are any funds included for the reconstruction of Ford's Theater?

Mr. JETT. No; there is nothing in the budget. We received funds in the 1965 appropriation. We have let the contract and the renovation of the theater is underway.

Senator YOUNG. Do you have enough money now to finish all of the reconstruction?

Mr. JETT. Yes, sir; we do. We have enough money to do restoration and also the museum to be part of the exhibit, as you know.

Senator YOUNG. What is the schedule on that work?

Mr. JETT. The contract is for 18 months, Senator Young. We hope that it will be completed by the fall of 1966. We are very pleased by your interest in it, and I heard you planned to come down and see it.

Senator YOUNG. I think we should all go down to see this project. The chairman and the Senator from South Dakota have been very interested in this project, too.

ROAD FOR THEODORE ROOSEVELT NATIONAL MEMORIAL

Do you plan to construct a road between the north and south units of the Theodore Roosevelt National Memorial Park? Does that require authorization?

Mr. BAKER. Yes; it does, sir.

Senator YOUNG. Thank you.

CONSTRUCTION

Chairman HAYDEN. For fiscal year 1966 you are requesting an appropriation of $26,327,000 for your construction activity. This is more than $16 million less than the amount appropriated to you last year. However, there is no request for funds for land acquisition inasmuch as these will be included in the budget of the Bureau of Outdoor Recreation. The justification for this request will be printed in the record.

(The justification referred to follows:)

HIGHLIGHT STATEMENT

BROAD PURPOSE AND LONG-RANGE OBJECTIVE OF PROGRAM

This program provides for the construction of buildings, utilities, and other facilities in the parks, and the acquisition of water rights to serve the parks. The objective of the program is to equip adequately the areas administered with structures and facilities needed for the safety and enjoyment of park visitors, and for efficient administration, maintenance, and conservation, and to acquire and establish such water rights as are needed to meet visitor and park operating requirements. Nineteen sixty-six will conclude the Mission 66 program which was designed to staff and equip the parks in a manner adequate to meet the 1966 visitor load, which is now estimated to reach 117.5 million. For 1966, the land acquisition program is included in the budget of the Bureau of Outdoor Recreation under authority of the Land and Water Conservation Fund Act of 1965 (Public Law 88–578, approved September 3, 1964).

ACCOMPLISHMENTS DURING THE PAST YEAR

During 1964, nearly $28 million was obligated for the construction of camping and picnicking facilities, public service and administrative units, utilities, employee housing, and miscellaneous items. Among 1964 accomplishments were the completion of 15 new visitor centers with 12 others under contract at the close of the year; provision of 1,370 new campsites; provision of 134 additional comfort stations; completion of 206 utility systems, including additions to existing systems; completion of 86 housing units for permanent and seasonal employees; and completion of 6 new campfire circles or amphitheaters.

In addition, about $13 million of appropriated and $450,000 of donated funds were obligated for land acquisition. Some 57,663 acres of land were acquired by purchase, donation, and exchange (exclusive of boundary adjustments) for addition to 52 areas of the national park system. About $354,000 of appropriated funds were obligated for water rights acquisition functions carried on in 71 parks, with major activities in 14. Accomplishments included drilling and testing of 97 wells, 53 of which are successful production wells; installation and operation of about 51 water and tidal measuring gages; receipt of 13 water right licenses; and extensive surveys and analyses of water resources and water use in several parks.

OBJECTIVES AND PROGRAM FOR BUDGET YEAR

The 1966 budget provides for the construction of facilities for park purposes and visitor use, and the acquisition and establishment of water rights which are of the highest priority throughout the Service. The program for the budget year totals $25,827,000 for the construction of 618 projects affecting 135 parks located in 39 States, the territories, and the District of Columbia; and $500,000 for acquisition of water rights.

Construction

Appropriation 1965	$42,406,600
Unobligated balance from prior years	13,705,759
Total available for obligation	56,112,359
Decreases:	
Buildings, utilities, and other facilities	33,826,508
Acquisition of lands and water rights	21,356,481
Executive Mansion and grounds	181,972
Parkways	3,974
Roads and trails	365,559
Unobligated balance, end of year	400,000
Undistributed	−22,135
Subtotal	56,112,359
Increases:	
Buildings, utilities, and other facilities	25,827,000
Acquisition of water rights	500,000
Roads and trails	400,000
Total available for obligation	26,727,000
Less unobligated balance from prior year	400,000
Budget estimate 1966	26,327,000

Analysis by activities

Activity	Amount available, 1965	Fiscal year 1966			Total available, 1966 compared with 1965
		Unobligated balance from prior year	Budget estimate	Estimated total available	
1. Buildings, utilities, and other facilities	$33,804,373		$25,827,000	$25,827,000	−$7,977,373
2. Acquisition of lands and water rights	21,356,481		500,000	500,000	−20,856,481
3. Executive Mansion and grounds	181,972				−181,972
4. Parkways	3,974				−3,974
5. Roads and trails	765,559	$400,000		400,000	−365,559
Total	56,112,359	400,000	26,327,000	26,727,000	−29,385,359

1. BUILDINGS, UTILITIES, AND OTHER FACILITIES

The $25,827,000 estimate is a decrease of $2,500,700 under 1965.

Need for funds

The year 1966 will be the last year of the Mission 66 program. Execution of the program provided for in the estimate will be the final step toward achieving the objective of completing sufficient developments to accommodate visitors adequately, as contemplated by the program. Gratifying progress has been made on that program, and although it may fall short of its objectives by about 15 percent, fundwise, this can be attributed to the additional fund requirements brought about by the needs of the new park areas, or other activities not contemplated in the original programs; to greatly increased costs of construction; and to a greater increase in visitor use than was anticipated. Thirty-seven additional park areas have been established or authorized for establishment since the Mission 66 program began. The numbers of visitors to the parks are continuing at a very high level, with increases expected each succeeding year of the foreseeable future. Accommodations and services for these people are a prerequisite to preserving the parks for future generations.

The various types of facilities proposed for construction within the estimate are discussed below:

Camping and picnicking facilities.—The amount of $2,268,100 is programed for camping and picnicking facilities under this activity. This is in addition

to the $722,900 programed for the related roads and trails item under the appropriation "Construction (liquidation of contract authorization)," making a total of nearly $3 million programed for campgrounds and picnic areas in 1966. By the end of 1965, it is expected that the Service will have increased the number of camping spaces to 27,782. The estimate includes such items as site development; water, sewer, and power systems; tables; fireplaces; garbage receptacles; comfort stations; shelters, amphitheaters, campfire circles, and camptender residences.

Public service and administrative units.—The amount of $11,152,200 is programed for public service and administrative units. It will provide facilities which give direct service ot the visitor and all units essential to proper administration, such as visitor centers, museums, wayside exhibits, contact stations, comfort stations (except those located in campgrounds), administration buildings, entrance stations, fire lookouts, utility buidings, and observation stations, among other things. Construction of these facilities will increase efficiency in park operations by replacing, enlarging, or modernizing facilities constructed 20 or more years ago, when visitors numbered less than a quarter of what they do today, and by providing new facilities in parks in which there have been no developments.

Utilities.—The amount of $6,582,800 is scheduled for utilities to serve the above-mentioned public service and administrative units and such units currently existing, and to provide the necessary services for new concessioner developments or expansions. Utilities are programed only for those parks where commercial facilities are not available or economically feasible.

Employee housing.—The amount of $2,889,700 is programed for employee housing to enable the Service to continue its high priority program of providing satisfactory living quarters for park personnel which has been lagging considerably behind the goal set by the Mission 66 program. The title, "employee housing" refers to facilities for housing permanent and seasonal employees such as detached residences, duplex residences, apartments, motel-type multiple quarters, dormitories, bunkhouses, and trailers. Initially the Mission 66 goal evisioned the construction of 1,000 single-family employee housing units and a total of 400 multiple units over the number existing at the beginning of Mission 66 in the then existing park areas. It was planned to construct 200 houses per year and complete the single-family unit phase by the end of the 1961 fiscal year. Single-family units constructed and/or programed for construction through the 1965 fiscal year in parks existing at the commencement of Mission 66 will total 682. Funds for an additional 64 units are included in the 1966 program.

Miscellaneous: The amount of $2,934,200 is programed for "miscellaneous" items such as park entrance facilities, fences, signs, seats, memorials, and grading, seeding and planting for public service and administrative units.

The above items include a total of $2,042,000 for initiating developments in nine new park areas recently authorized by the Congress and for one area (Bighorn Canyon) to be operated under a cooperative agreement between the Service and the Bureau of Reclamation as follows:

Area:	*Amount*
Allegheny Portage Railroad and Johnstown Flood, Pa., (2)	$141,500
Fire Island, N.Y.	713,000
Saint-Gaudens, N.H.	42,500
Bighorn Canyon, Mont.-Wyo.	113,000
Fort Larned, Kans.	22,000
Ozark, Mo.	153,000
Canyonlands, Utah	697,000
Fort Bowie, Ariz.	50,000
John Muir, Calif.	110,000
Total	2,042,000

Plan of work

For the most part, plans, estimates, and supervision for the construction work are carried out by professional employees of the Service, although in some cases it is desirable and possible to procure the services by contract with outside professional firms. The major portion of the construction will be performed under contract with some minor projects being accomplished with day-labor forces employed by the Service.

The 1966 program includes projects estimated to cost $100,000 or more, as follows:

NORTHEAST REGION

Cape Cod National Seashore, Mass.: Visitor center and exhibits, Provincelands	$250,000
Chesapeake and Ohio Canal National Monument, Md.: Stabilization and restoration of Paw Paw Tunnel	100,000
Edison National Historic Site, N.J.: Replacement of slate and bituminous deck roofings, sheet metal valley, and ridge rolls, etc., Edison Home	100,000
Fire Island National Seashore, N.Y.:	
Dredging for marinas and in Great South Bay Channel (portion)	227,200
Miscellaneous beach facilities	100,000
Home of Franklin D. Roosevelt National Historic Site, N.Y.: Visitor facility including comfort station facilities, ticket sales and information station	152,400
Independence National Historic Park, Pa.:	
Restoration of Independence Hall (portion)	545,300
Installation of primary electric lines, Independence Square group of buildings	128,900
Landscape construction, area A, center section, south portion	106,100
Isle Royale National Park, Mich.: Deepwater dock, Houghton headquarters	115,400
Statue of Liberty National Monument, N.Y.:	
Install transformers and substation, complete exterior glass and bronze work, and install portion of mechanical equipment, American Museum of Immigration	241,000
Enlarge west pier, Liberty Island, and provision for visitor protection and use	153,600

SOUTHEAST REGION

Cape Hatteras National Seashore, N.C.: Beach erosion control and stabilization	500,000
Colonial National Historical Park, Va.: Water main connections from Yorktown to Newport News waterworks	158,700
Everglades National Park, Fla.: Employee apartments, Flamingo	123,100
Petersburg National Battlefield, Va.: Visitor center, furnishing, exhibits, and audiovisual facilities	234,000

MIDWEST REGION

Glacier National Park, Mont.:	
FM radio system	220,100
Employee apartments	133,400
Jewel Cave National Monument, S. Dak.: Elevator shaft	150,600
Wind Cave National Park, S. Dak.: Expand and rehabilitate visitor center, concessions building, including exhibits and audiovisual facilities	275,000
Yellowstone National Park, Wyo.:	
Utility extensions to cabin, concessioner, and Government areas, Grant Village	128,900
Marina Center building, Grant Village	150,000
Incinerator and dump, Grant Village	100,000
Utility and storage building, Grant Village	110,000
Dormitory and mess hall, Grant Village	138,000
Incinerator and dump, Lake	107,000
Employee residences, Mammoth	208,000
Water line from lake reservoir, Bridge Bay	107,000
FM radio system	212,000

SOUTHWEST REGION

Canyonlands National Park, Utah:	
Utilities, water, sewage disposal, electrical, LP gas, Squaw Flat	$225,000
Utilities, water, sewage disposal, electrical, LP gas, Island-in-the-Sky	297,000
Fort Davis National Historical Site, Tex.: Restoration and stabilization of historic buildings	119,500
Grand Canyon National Park, Ariz.:	
25-bed hospital, South Rim Village	770,000
Sewage disposal system, Desert View	237,300
Two 11-unit apartment building, Training Center	325,800
Lake Mead National Recreation Area, Ariz. and Nev.:	
Water system expansion, lake intake, 100,000-gallon reservoir, Temple Bar	166,300
Utilities, including additional 500,000-gallon reservoir, campground, Cottonwood Cove	122,900
Mesa Verde National Park, Colo.: Mesa Top ruins shelters, including fencing and passageways	172,000
Padre Island National Seashore, Tex.: Main water system, north end	269,600

WESTERN REGION

Fort Vancouver National Monument, Wash.: Reconstruct portion of fort	100,000
Glacier Bay National Monument, Alaska: Cruise boat (50-passenger)	241,000
Hawaii Volcanoes National Park, Hawaii: Visitor center with offices and exhibits	128,900
Lassen Volcanic National Park, Calif.: Winter use building	198,000
Mount McKinley National Park, Alaska: Rehabilitate water, power, and heating systems, McKinley Park Hotel	485,000
Mount Rainier National Park, Wash.:	
Grounds improvement, day-use building	103,900
Concessioner employee dormitory	204,800
Narrow band radio system	182,500
Point Reyes National Seashore, Calif.: Lagoon dredging, stabilization, and tide gate	452,000
Sequoia and Kings Canyon National Parks, Calif.: Employee apartments	104,000
Yosemite National Park, Calif.:	
Visitor center and community building	581,000
Utility building, Hodgdon Meadow	147,000

NATIONAL CAPITAL REGION

Anacostia Park, District of Columbia: Visitor shelter and workshop	138,600
Chesapeake and Ohio Canal, District of Columbia: Restore Abner Cloud House	100,000
East Potomac Park, District of Columbia: Cafeteria and training facility	325,000
Park system general, District of Columbia:	
Improvement to small parks and reservations	385,000
Development of Virginia Avenue parks	200,000
Development of L'Enfant Square	200,000
President's Park, District of Columbia: Fire-protection measures for White House	175,000

2. ACQUISITION OF LANDS AND WATER RIGHTS

Analysis by subactivities

Subactivity	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Total available 1966 compared to total available 1965
(a) Acquisition of lands	$20,623,269		−$20,623,269
(b) Acquisition of water rights	733,212	$500,000	−233,212
Total	21,356,481	500,000	−20,856,481

(a) Acquisition of lands

The fund requirement for fiscal year 1966 is not included under this item; it is being included in the budget of the Bureau of Outdoor Recreation to be funded from the land and water conservation fund as authorized by Public Law 88–578, approved September 3, 1964.

(b) Acquisition of water rights

The estimate of $500,000 is an increase of $20,000 over the amount of $480,000 appropriated for 1965, but a decrease of $233,212 under the amount available for that year due to carryover balances.

The purposes of this program are (1) to define the quantities of available surface and underground water resources in parks administered by the Service; the past, present, and ultimate extent of use of those waters to serve the administrative, operational, and public needs; and the basis and adequacy of rights to those uses under State and Federal laws; (2) to acquire access to, and the right to use supplemental sources, as needed, in and outside of those parks; and (3) to preserve and protect those water resources and the rights to their use in compliance with Federal and State laws and regulations.

The effectiveness of the program is dependent upon advance completion of investigation and planning; the data developed serve as the basis for subsequent development, operation, and administration of the parks. The work consists of the construction and operation of test and observation wells and gages; the purchase of land, rights of access, and established water rights; surveys, mapping, analyses, and the preparation and filing of applications for appropriation, proof of completion of water-using facilities, and other prescribed action to obtain appropriative water rights in accordance with State water laws; and injunctive action, condemnations, and other legal actions to establish or defend the Federal right to the use of water. Conflicts with, or participation in, multipurpose developments such as the central and southern Florida flood-control project also require much conference negotiation and planning. Most of the work to establish or defend any water right extends over a number of years.

Need for funds.—The estimate of $500,000, which is an increase of $20,000 over the 1965 appropriation, is needed to finance a realistic program to carry out surveys to obtain needed data which are not provided in plans of existing water systems; preparation of maps to support applications for the appropriation of water in compliance with State water laws; purchase of water rights; drilling and observation of necessary test wells; and for preparation and filing of applications with supporting maps for new systems being constructed under the Service's development program. An annual program level of $500,000 is needed to meet requirements for acquisition, establishment, and amendment of water rights for new and existing park water systems. Water claims are being increased at an accelerated rate with the new construction under the Mission 66 development program requiring the preparation and filing of applications and supporting maps, surveys, mapping, engineering analyses, and related requirements. There also is accelerated activity at Everglades National Park, Fla., to define the quantity and distribution of natural riparian flows needed to preserve ecological conditions, in order that proper allocation of the water may be assured when most of the upstream sources are drained or diverted by the central and southern Florida flood-control project of the Corps of Engineers.

More than 1,500 water systems in the parks administered are being supplemented or enlarged under the Mission 66 development program for which water rights must be acquired or established. Increasing numbers of the Eastern States are adopting regulatory or appropriative water laws which will not conflict with the basic riparian doctrines.

These laws and related regulations are particularly applicable to the use of underground water and the drilling, development, and use of wells. As a result, the Service must establish increasing numbers of State permits and appropriative water rights for increasing use from systems which have formerly been operated under the riparian water laws.

With the increased public use of the parks, more water must be obtained than is available in surface water sources. This can only be accomplished by preliminary geological investigations and subsequent exploratory test well drilling. The increasing need for such wells has been brought about by the increase in prior appropriations of the national water resources in many areas where the parks are located. Florida and Mississippi, among other States, have adopted laws which define riparian rights as those to the average 5-year minimum

surface flow or ground water level during the past 20 or more years. These minimums now have to be estimated and revised as more data are obtained.

One of the most vital projects involves the acquisition of an assured right to sufficient continued natural flow of water in Everglades National Park from the tributary drainage of southern Florida. The normal southward pattern of flow into the park has been radically reduced as a result of the Corps of Engineers' construction of levees and canals north of the park as a part of the central and southern Florida flood-control project. Sufficient flow from the project area is essential to the preservation of the ecology for which the park was established. Florida water laws require such water rights to be obtained through allocation by mutual agreement of the ultimate water users, including the United States and the central and southern Florida flood-control district. The Chief of Engineers was directed by Senate resolution of May 4, 1962, to review and revise the basic flood-control plan incorporated in House Document 643, 80th Congress, 2d session, with a view to determining whether the existing project should be modified in order to insure the supply, distribution, and conservation of water for or in the park. The Service must have sufficient funds for its required participation with the Corps of Engineers to accomplish these objectives. In many of the other Eastern States, it is necessary to drill and pump several test wells to define the extent of small ground water basins and determine the safe withdrawals which will not affect the yield of other wells deriving their water from the same sources.

Plan of work.—A large portion of the studies, supervision, and analysis of ground water, are accomplished by the U.S. Geological Survey on a reimbursable basis, particularly with respect to geological investigations and exploratory test well drilling. Most test wells are drilled under contracts with private firms. Temporary survey crews are employed by the Service in gathering data on existing water systems, and for mapping in support of applications. The acquisition phases of the program are performed by professional employees of the Service.

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$41,747,905	$55,712,700	$26,726,659	−$28,986,041
Unobligated balance brought forward	−22,756,664	−13,705,759	−399,659	+13,306,100
Unobligated balance carried forward	13,705,759	399,659		−399,659
Appropriation	32,697,000	42,406,600	26,327,000	−16,079,600
Obligations by objects:				
11 Personnel compensation	6,159,307	6,140,000	5,723,000	−417,000
12 Personnel benefits	422,606	418,000	390,000	−28,000
21 Travel and transportation of persons	285,684	335,000	350,000	+15,000
22 Transportation of things	86,091	98,000	70,000	−28,000
23 Rent, communications, and utilities	202,625	260,000	175,000	−85,000
24 Printing and reproduction	51,219	51,000	50,000	−1,000
25 Other services	1,914,864	2,500,000	1,650,000	−850,000
26 Supplies and materials	779,530	970,000	650,000	−320,000
31 Equipment	562,943	575,000	500,000	−75,000
32 Lands and structures	31,211,862	44,362,450	17,168,659	−27,193,791
41 Grants, subsidies, and contributions	71,174	3,250		−3,250
Total obligations	41,747,905	55,712,700	26,726,659	−28,986,041

STATUS OF CONSTRUCTION PROJECTS

Chairman HAYDEN. Will you please place in the record a table of construction projects, except land acquisitions, for which funds were available during fiscal year 1965, showing the status of each of the projects, the amount expended thus far for each of them, and the amount remaining of the sum provided for each of them?

Mr. HARTZOG. Thank you very much, Mr. Chairman. We have that table and we will be pleased to put it in the record.

(The table referred to follows:)

CONSTRUCTION, NATIONAL PARK SERVICE

Summary of obligations and unobligated balances, by projects, as of Dec. 31, 1964

BUILDINGS, UTILITIES, AND OTHER FACILITIES

Region	Funds available	Expended or obligated	Balance
Northeast region	$13,789,943	$9,099,686	$4,690,257
Southeast region	7,815,036	4,495,532	3,319,504
Southwest region	12,549,326	9,046,011	3,503,315
Western region	9,909,404	6,179,490	3,729,914
Midwest region	21,040,600	17,846,632	3,193,968
National Capital region	8,105,876	6,390,757	1,715,119
Grand total, all regions	73,210,185	53,058,108	20,152,077
Plans, surveys, supervision, contingencies, etc			1,900,595
Total Balance, Dec. 31, 1964			22,052,672

Status of construction projects and funds available in 1965 as of Dec. 31, 1964

BUILDINGS AND UTILITIES

Area and project	Funds available	Expended or obligated	Balance
NORTHEAST REGION			
Acadia National Park:			
Visitor center	$221,500		$221,500
All other projects	258,154	$152,115	106,039
Adams National Historic Site: All other projects	125,800	36,972	88,828
Antietam National Battlefield Site: All other projects	61,223	40,139	21,084
Cape Cod National Seashore:			
Construction and rehabilitation of buildings	210,040	209,890	150
Visitor center, Eastham	396,874	379,651	17,223
All other projects	1,118,331	607,070	511,261
Chesapeake & Ohio Canal National Monument: All other projects	391,646	207,580	184,066
Dorchester Heights National Historic Site: All other projects	26,730	26,730	
Edison National Historic Site: All other projects	328,662	147,591	180,471
Federal Hall National Memorial: All other projects	365,649	365,649	
Fort McHenry National Monument: All other projects	63,056	47,583	15,473
Fort Necessity National Battlefield: All other projects	151,285	16,985	134,300
General Grant National Memorial: All other projects	54,200	10,000	44,200
Gettysburg National Military Park:			
Visitor center—Cyclorama building and utilities	990,433	986,734	3,699
All other projects	34,140	18,593	15,547
Gloria Dei National Historic Site: All other projects	10,100	8,500	1,600
Hamilton Grange National Memorial: All other projects	305,800	15,012	290,788
Hampton National Historic Site: All other projects	25,540	22,064	3,476
Harpers Ferry National Historical Park:			
Alteration and rehabilitation of Storer College structures and grounds (portion)	261,536	2,071	259,465
All other projects	558,429	538,344	20,085
Home of F. D. Roosevelt National Historic Site: All other other projects	300		300
Hopewell Village National Historic Site: All other projects	155,492	98,997	56,495
Independence National Historical Park:			
Rehabilitation of Kid-Fling and McIlvaine Houses and Yoh Building	837,758	834,900	2,858
Rehabilitate 2d Bank of United States (portion)	386,600	283,870	102,730
Rehabilitation and restoration, Philadelphia Merchants Exchange Building (complete)	432,600	432,057	543
Rehabilitate and restore Independence Square group of buildings	1,289,086	732,807	556,279
Rehabilitate and restore Walnut Street buildings (portion)	841,875	573,050	268,825
Rehabilitation of Independence Hall (portion)	211,100	13,950	197,150
All other projects	670,351	240,967	429,384
Isle Royale National Park: All other projects	448,500	446,487	2,013
Lincoln Boyhood National Memorial: All other projects	385,656	60,856	324,800
Minute Man National Historical Park: All other projects	274,400	89,974	184,426
Morristown National Historical Park: All other projects	129,507	120,111	9,396
Mound City Group National Monument			
Perry's Victory National Monument	51,700		51,700
Sagamore Hill National Historic Site: All other projects	61,748	25,930	35,818
Salem Maritime National Historic Site: All other projects	11,600	2,414	9,186
Saratoga National Historical Park: All other projects	52,269	8,328	43,941

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

BUILDINGS AND UTILITIES

Area and project	Funds available	Expended or obligated	Balance
NORTHEAST REGION—continued			
Statue of Liberty National Monument:			
American Museum of Immigration:			
Phase II	$861,047	$861,047	
Phase III	446,826	434,668	$12,158
Phase IV	256,000		256,000
All other projects	26,000		26,000
Vanderbilt Mansion National Historic Site	1,000		1,000
Total, Northeast region	13,789,943	9,099,686	4,690,257
SOUTHEAST REGION			
Andrew Johnson National Historic Site I (Tenn.): All other projects	1,140	1,140	
Appomattox Court House National Historical Park (Va.): All other projects	273,469	262,605	10,864
Blue Ridge Parkway (N.C. and Va.): All other projects	1,058,306	491,384	566,922
Booker T. Washington National Monument (Va.): All other projects	125,155	10,955	114,200
Buck Island Reef National Monument (Virgin Islands): All other projects	30,800	450	30,350
Cape Hatteras National Seashore (N.C.):			
Administrative headquarters building	200,000		200,000
Beach erosion control and stabilization	415,000	174,430	240,570
Do	500,500	497,948	2,552
Do	380,000	55,584	324,416
All other projects	171,912	104,332	67,580
Castillo de San Marcos National Monument (Fla.): All other projects	259,604	170,031	89,573
Chalmette National Historical Park (La.): All other projects	82,329	82,047	282
Chickamauga-Chattanooga National Military Park (Ga. and Tenn.): All other projects	2,500		2,500
Christiansted National Historic Site (V.I.): All other projects	111,400	107,388	4,012
Colonial National Historical Park (Va): All other projects	123,124	61,534	61,590
Cumberland Gap National Historical Park (Ky., Tenn., and Va.): All other projects	53,870	53,870	
DeSoto National Memorial (Fla.): All other projects	600	48	552
Everglades National Park (Fla.):			
Flamingo campsite development	358,207	357,383	824
All other projects	171,726	93,887	77,839
Foothills Parkway (Tenn.): All other projects	156,400	134,915	21,485
Fort Donelson National Military Park (Tenn.): All other projects	8,300	2,542	5,758
Fort Frederica National Monument (Ga.): All other projects	45,100	42,878	2,222
Fort Jefferson National Monument (Fla.): All other projects	75,200	51,028	24,172
Fort Matanzas National Monument (Fla.): All other projects	5,000		5,000
Fort Pulaski National Monument (Ga.): All other projects	29,484	19,039	10,445
Fort Raleigh National Historic Site (N.C.):			
Visitor center; utility and oil and paint building	388,450	385,746	2,704
All other projects	79,806	68,557	11,249
Fort Smith National Historic Site (Ark.): All other projects	55,640	51,780	3,860
Fort Sumter National Monument (S.C.): All other projects	17,500		17,500
Fredericksburg-Spotsylvania National Military Park (Va.): All other projects	18,600	16,711	1,889
Great Smoky Mountains National Park (N.C.): All other projects	332,173	184,537	147,636
Horseshoe Bend National Military Park (Ala.): All other projects	37,890	8,990	28,900
Hot Springs National Park (Ark.): All other projects	90,942	34,572	56,370
Kennesaw Mountain National Battlefield Park (Ga.): All other projects	69,384	52,114	17,270
Mammoth Cave National Park (Ky.): All other projects	269,841	107,121	162,720
Manassas National Battlefield Park (Va.): All other projects	225,573	146,121	79,452
Natchez Trace Parkway (Ala., Miss., and Tenn.): All other projects	465,785	102,084	363,701
Pea Ridge National Military Park (Ark.): All other projects	73,950	5,137	68,813
Petersburg National Military Park (Va.): All other projects	23,300	11,360	11,940
Richmond National Battlefield Park (Va.): All other projects	295	295	
Russell Cave National Monument (Ala.): All other projects	42,115	41,026	1,089
San Juan National Historic Site (P.R.): All other projects	89,150	45,040	44,110
Shenandoah National Park (Va.):			
Visitor center and related facilities	242,036	241,811	225
All other projects	316,313	110,556	205,757
Shiloh National Military Park (Tenn.): All other projects	98,600	2,444	96,156
Stones River National Battlefield (Tenn.): All other projects	6,023	4,440	1,583
Vicksburg National Military Park (Miss.): All other projects	90,094	43,482	46,612
Virgin Islands National Park (V. I.): All other projects	142,450	56,190	86,260
Total, Southeast region	7,815,036	4,495,532	3,319,504

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

BUILDINGS AND UTILITIES

Area and project	Funds available	Expended or obligated	Balance
SOUTHWEST REGION			
Arches National Monument (Utah): All other projects	$95,254	$93,254	$2,000
Bandelier National Monument (N. Mex.): All other projects	23,348	22,798	550
Big Bend National Park (Tex.): All other projects	347,089	168,530	178,559
Bryce Canyon National Park (Utah): All other projects	275,321	261,089	14,232
Canyon de Chelly National Monument (Ariz.): All other projects	119,145	102,264	16,881
Canyonlands National Park (Utah): All other projects	65,130	22,845	42,285
Capitol Reef National Monument (Utah): All other projects	367,080	366,747	333
Capulin Mountain National Monument (N. Mex.): All other projects	95,353	95,123	230
Carlsbad Caverns National Park (N. Mex.): All other projects	60,629	56,000	4,629
Casa Grande Ruins National Monument (Ariz.): All other projects	45,413	19,993	25,420
Cedar Breaks National Monument (Utah): All other projects	21,133	20,778	355
Chiricahua National Monument (Ariz.): All other projects	195,141	134,998	60,143
Coronado National Memorial (Ariz.): All other projects	19,400	5,698	13,702
El Morro National Monument (N. Mex.): All other projects	203,251	203,251	
Fort Davis National Historic Site (Tex.)	474,638	183,190	291,448
Gila Cliff Dwellings National Monument (N. Mex.): All other projects	321,261	100,566	220,695
Grand Canyon National Park and National Monument (Ariz.):			
Utility buildings	331,879	331,732	147
Supplemental water supply and rehabilitation of sewer systems, phase I	3,212,100	2,277,578	934,522
All other projects	340,409	78,570	261,839
Great Sand Dunes National Monument (Colo.): All other projects	226,477	226,477	
Hovenweep National Monument (Colo. and Utah): All other projects	127,157	108,118	19,039
Lake Mead National Recreation Area (Ariz. and Nev.): All other projects	800,691	583,584	217,107
Mesa Verde National Park (Colo.):			
Acquire fixed assets of Mesa Verde Co	400,000	400,000	
Storage reservoir	334,800	241,541	93,259
Morfield Canyon campground and Navajo Hill utilities	703,099	703,099	
Visitor center	212,800		212,800
Water supply rehabilitation	205,759	83,011	122,739
All other projects	800,521	458,685	341,836
Natural Bridges National Monument (Utah): All other projects	196,500	119,816	76,684
Navajo National Monument (Ariz.): All other projects	224,618	204,061	20,557
Organ Pipe Cactus National Monument (Ariz.): All other projects	345,939	281,445	64,494
Petrified Forest National Park (Ariz.): All other projects	101,911	72,979	28,932
Rainbow Bridge National Monument (Utah): All other projects	236,012	235,243	769
Saguaro National Monument (Ariz.): All other projects	133,138	74,000	59,138
Southwestern Archeological Center (Ariz.): All other projects	15,400	8,593	6,807
Timpanogos Cave National Monument (Utah): All other projects	12,230	8,329	3,901
Tonto National Monument (Ariz.): All other projects	137,599	104,096	33,503
Tuzigoot National Monument (Ariz.): All other projects	101,150	96,528	4,622
Tumacacori National Monument (Ariz.): All other projects	15,500	4,262	11,238
Walnut Canyon National Monument (Ariz.): All other projects	142,708	129,508	13,200
White Sands National Monument (N. Mex.): All other projects	10,500	7,700	2,800
Wupatki-Sunset Crater National Monuments (Ariz.): All other projects	193,900	103,920	89,980
Zion National Park (Utah): All other projects	258,042	246,102	11,940
Total, Southwest region	12,549,326	9,046,011	3,503,315
WESTERN REGION			
Cabrillo National Monument (Calif.):			
Visitor center	304,500		304,500
All other projects	125,100	66,010	59,090
City of Refuge National Historical Park (Hawaii): All other projects	95,200	80,229	14,971
Coulee Dam National Recreation Area (Wash.): All other projects	20,500	17,827	2,673
Crater Lake National Park (Oreg.): All other projects	700,436	666,725	33,711
Craters of the Moon National Monument (Idaho): All other projects	24,981	23,215	1,766
Death Valley National Monument (Calif.): All other projects	289,354	276,254	13,100
Devils Postpile National Monument (Calif.): All other projects	74,700	67,206	7,494

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

BUILDINGS AND UTILITIES

Area and project	Funds available	Expended or obligated	Balance
WESTERN REGION—continued			
Fort Vancouver National Historic Site (Wash.): All other projects	$950	$580	$370
Glacier Bay National Monument (Alaska):			
Lodge building	343,200		343,200
All other projects	329,600	106,036	223,564
Hawaii Volcanoes National Park (Hawaii): All other projects	139,350	74,935	64,415
Joshua Tree National Monument (Calif.): All other projects	32,233	31,186	1,047
Katmai National Monument (Alaska): All other projects	221,353	216,342	5,011
Lassen Volcanic National Park (Calif.): All other projects	393,736	195,967	197,769
Lava Beds National Monument (Calif.): All other projects	139,177	30,476	108,701
Lehman Caves National Monument (Nev.): All other projects	3,699	3,699	
Mount McKinley National Park (Alaska): All other projects	4,800		4,800
Mount Rainier National Park (Wash.):			
Day-use facilities	1,372,411	1,372,411	
All other projects	1,003,277	533,202	470,075
Muir Woods National Monument (Calif.): All other projects	19,230	19,230	
Olympic National Park (Wash.): All other projects	130,959	93,389	37,570
Oregon Caves National Monument (Oreg.): All other projects	3,540	3,540	
Point Reyes National Seashore (Calif.): All other projects	298,700	10,632	288,068
Sequoia-Kings Canyon National Parks (Calif):			
Visitor center	275,900	273,040	2,860
Water system reconstruction	295,653	295,653	
Maintenance building	495,840		495,840
All other projects	961,109	636,399	324,710
Sitka National Monument (Alaska):			
Visitor center, including arts and crafts center and utilities	330,600	292,601	37,999
All other projects	7,300	2,640	4,660
Whiskeytown National Recreation Area (Calif.): All other projects	867,893	410,025	457,868
Whitman Mission National Historic Site (Wash.): All other projects	4,200	3,077	1,123
Yosemite National Park (Calif.):			
Reconstruct sewer systems	249,000	136,836	112,164
All other projects	350,923	240,128	110,795
Total, Western region	9,909,404	6,179,490	3,729,914
MIDWEST REGION			
Badlands National Monument (S. Dak.): All other projects	173,701	101,038	72,663
Bent's Old Fort National Historic Site (Colo.): All other projects	54,193	26,933	27,260
Big Hole National Battlefield (Mont.): All other projects	134,400		134,400
Black Canyon of the Gunnison National Monument (Colo.): All other projects	15,800		15,800
Colorado National Monument (Colo.): All other projects	46,332	30,742	15,590
Custer Battlefield National Monument (Mont.): All other projects	55,300		55,300
Devils Tower National Monument (Wyo.): All other projects	45,388	21,788	23,600
Dinosaur National Monument (Colo., Utah):			
Administration and public contact building	211,000	177,634	33,366
All other projects	322,569	279,922	42,647
Fort Laramie National Historic Site (Wyo.): All other projects	210,153	196,080	14,073
George Washington Carver National Monument (Mo.): All other projects	14,000	4,508	9,492
Glacier National Park (Mont.):			
Visitor center	239,627	239,627	
Administration building	306,410	306,409	1
All other projects	1,990,142	825,258	1,164,884
Grand Portage National Monument (Minn.): All other projects	76,400	12,732	63,668
Grand Teton National Park (Wyo.): All other projects	908,110	607,193	300,917
Homestead National Monument (Nebr.): All other projects	16,600		16,600
International Peace Garden (N. Dak.): All other projects	102,000	102,000	
Jefferson National Expansion Memorial National Historic Site, (Mo.):			
Gateway arch and visitor center, phase III	9,167,348	9,167,348	
Gateway arch and visitor center levee development, phase II	2,154,959	2,154,959	
All other projects	85,200	85,200	
Jewel Cave National Monument (S. Dak.): All other projects	110,400		110,400
Mount Rushmore National Memorial (S. Dak.): All other projects	21,167	15,051	6,116
Pipestone National Monument (Minn.): All other projects	2,100	1,865	235
Rocky Mountain National Park (Colo.):			
Visitor center and administration building	383,600		383,600
All other projects	66,608	16,684	49,924

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

BUILDINGS AND UTILITIES

Area and project	Funds available	Expended or obligated	Balance
MIDWEST REGION—continued			
Shadow Mountain National Recreation Area (Colo.): All other projects	$96,980	$62,515	$34,465
Theodore Roosevelt National Memorial Park (N. Dak.): All other projects	126,400	118,927	7,473
Wilson's Creek Battlefield National Park (Mo.): All other projects	84,200		84,200
Wind Cave National Park (S. Dak.): All other projects	111,470	111,470	
Yellowstone National Park (Mont., Wyo.):			
Utility extension and distribution; Government area, employee trailer court and marina	210,615	210,615	
Marina dredging and bulkheading	538,002	538,002	
Boat docks and miscellaneous related facilities	258,676	258,676	
Water reservoir	217,065	215,191	1,874
Hospital facilities	455,135	454,172	963
Water and sewer extension and connections	210,453	210,453	
Visitor center, including post office and dispensary	220,800		220,800
All other projects	1,597,297	1,293,640	303,657
Total, Midwest region	21,040,600	17,846,632	3,193,968
NATIONAL CAPITAL REGION			
Baltimore-Washington Parkway (Md.): All other projects	360,272	189,681	170,591
Catoctin Mountain Park (Md.): All other projects	252,087	101,675	150,412
Chesapeake & Ohio Canal (District of Columbia and Maryland): All other projects	100,294	48,881	51,413
Custis-Lee Mansion (Va.): All other projects	112,734	79,052	33,682
Daingerfield Island (Va): All other projects	38,396	38,396	
East Potomac Park (District of Columbia):			
Park operations building	1,792,170	1,789,529	2,641
All other projects	166,672	166,672	
Executive Mansion and grounds (District of Columbia): All other projects	288,000	125,751	162,249
George Washington Memorial Parkway (Md.-Va.): All other projects	723,267	503,233	220,034
Jones Point Park (Va.): All other projects	36,214	3,920	32,294
Monument Grounds (District of Columbia): All other projects	170,950	165,538	5,412
Park System, General (District of Columbia):			
Northwest submaintenance group	207,500		207,500
Restore Ford's Theater	1,600,000	1,390,000	210,000
Improve small parks and reservations	344,302	296,250	48,052
All other projects	203,881	14,724	189,157
Prince William Forest Park (Va.): All other projects	236,973	194,232	42,741
Southwest Renewal Area (District of Columbia): Lansburg Park Development	254,070	250,029	4,041
Theodore Roosevelt Memorial (District of Columbia): Construct memorial	1,019,194	1,019,194	
West Potomac Park (District of Columbia): All other projects	198,900	14,000	184,900
Total, National Capital region	8,105,876	6,390,757	1,715,119
Grand total, all regions	73,210,185	53,058,108	20,152,077
Plans, surveys, supervision, contingencies, etc			1,900,595
Total balance, Dec. 31, 1964			22,052,672
Prior-year funds	39,383,677		
Unobligated balances of prior-year funds available in 1965	7,298,808		
1965 appropriation	26,527,700		
Total	73,210,185		

CONSTRUCTION (LIQUIDATION OF CONTRACT AUTHORIZATION), NATIONAL PARK SERVICE

Summary of obligations and unobligated balances, by projects, as of Dec. 31, 1964

ROADS AND TRAILS AND PARKWAYS

Region	Funds available	Expended or obligated	Balance
Northeast region	$3,181,188	$2,074,803	$1,106,385
Southeast region	45,743,196	34,469,255	11,273,941
Southwest region	9,309,074	7,900,205	1,408,869
Western region	8,118,723	6,104,438	2,014,285
Midwest region	14,409,376	8,121,104	6,288,272
National Capital region	11,778,290	7,200,965	4,577,325
Grand total, all regions	92,539,847	65,870,770	26,669,077
Plans, surveys, supervision, contingencies, etc			5,302,791
Total balance, Dec. 31, 1964			31,971,868

Status of construction projects and funds available in 1965 as of Dec. 31, 1964

ROADS AND TRAILS PARKWAYS

Area and project	Funds available	Expended or obligated	Balance
NORTHEAST REGION			
Acadia National Park (Maine):			
Grade, drain, pave Bubble Pond Rd	$507,672	$504,852	$2,820
All other projects	223,782	192,649	31,133
Adams National Historic Site (Mass.):			
All other projects	1,400		1,400
Antietam National Battlefield Site and National Cemetery (Md.):			
Burnside Bridge bypass road and bridge	534,040		534,040
All other projects	23,859	2,080	21,779
Cape Cod National Seashore (Mass.):			
Reconstruction of portion of existing roads, trails, walks, paths, and parking	480,000	299,006	180,994
All other projects	145,288	117,955	27,333
Chesapeake & Ohio Canal National Monument (Md.): All other projects	48,979	37,324	11,655
Fort Necessity National Battlefield (Pa.): All other projects	67,990	67,990	
Harpers Ferry National Historical Park (Md. and W. Va.):			
All other projects	165,075	86,675	78,400
Home of Franklin D. Roosevelt National Historic Site (N.Y.):			
All other projects	3,200		3,200
Hopewell Village National Historic Site (Pa.): All other projects	3,520	3,505	15
Independence National Historical Park (Pa.): All other projects	251,898	200,093	51,805
Isle Royale National Park (Mich.): All other projects	45,400	30,989	14,411
Lincoln Boyhood National Memorial (Ind.): All other projects	263,500	133,700	129,800
Saratoga National Historical Park (N.Y.): All other projects	208,809	191,209	17,600
Statue of Liberty National Monument (N.Y.): Mall paving	206,776	206,776	
Total, Northeast region	3,181,188	2,074,803	1,106,385
SOUTHEAST REGION			
Appomattox Court House National Historic Park (Va.):			
All other projects	95,224	95,224	
Blue Ridge Parkway (N.C. and Va.):			
Grade, base, structures, and surfacing, Mill Mountain Spur Rd. (portion)	432,100	267,419	164,681
U.S. 460 and N. & W. Railroad grade separations	1,185,518	1,184,273	1,245
Grade, base, and 3 structures, U.S. 460-Virginia 24	919,017	913,008	6,009
Grade base structures, U.S. 70-U.S. 25-W, 6.2 miles	1,924,000		1,924,000
Tunnel portals for 5 tunnels	442,007	442,007	
French Broad River Bridge	800,000	551,941	248,059
Tunnel portals for 4 tunnels	348,200	238,174	110,026
Grade, base, 2 tunnels, and lining, Cutthroat Gap-Flat Laurel Gap, 3.88 miles	1,519,761	1,489,383	30,378
2-UVW, portals and tunnel lining	298,041	298,041	
2-R2, base, grading base, 3 structures, 4.45 miles	597,837	596,956	881
225 grade separation, U.S. 70 access connection, and approaches	251,889	251,814	75

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

Area and project	Funds available	Expended or obligated	Balance
SOUTHEAST REGION—continued			
Blue Ridge Parkway (N.C. and Va.)—Continued			
Grade, base, structures, and paving Linville Fall spurs	$605,214	$605,214	
2 XYZ bituminous paving, Balsam and Soco Gaps and Wolf Laurel Gap	427,256	427,256	
1M2 grade, base, and 8 structures, U.S. 220-Virginia 24, 9.2 miles (complete) Roanoke River Bridge and N. & W. overpass	2,956,100	2,719,367	$236,733
All other projects	1,440,954	944,461	496,493
Booker T. Washington National Monument (Va.): All other projects	16,577	16,577	
Cape Hatteras National Seashore (N.C.): All other projects	27,230	11,430	15,800
Castillo de San Marcos National Monument (Fla.): All other projects	175,000	114,923	60,077
Chalmette National Historical Park (La.): All other projects	93,123	85,123	8,000
Colonial National Historical Park (Va.):			
Grade separations, Hubbard's Lane, Cheatham Annex	518,215	499,792	18,423
Grade separations, Miller's Crossing including access and collection roads	200,000		200,000
All other projects	190,900	131,522	59,378
Everglades National Park (Fla.): All other projects	134,713	134,385	328
Foothills Parkway (Tenn.):			
Slope stabilization, Route 15A-12	325,000	319,516	5,484
Grade, drain, base, and surface, Pigeon River Cosby, 5.5 miles (portion)	1,615,937	1,615,937	
Slope stabilization, Little River to Stat. 332, 6.1 miles	400,000	258,679	141,321
Grade, drain, base, and surface, Murray to Chilhowee, 6.8 miles	970,439	966,494	3,945
Grade, base, structures, and paving, Gatlinburg Bypass	1,535,200	574,579	960,621
Grade, drain, and base, Little River-Murray Gap, 8G2	437,077	435,503	1,574
Grade, drain, and base, Little River-Murray Gap 8G1	862,524	860,492	2,032
All other projects	253,758	253,758	
Fort Donelson National Military Park (Tenn.): All other projects	2,900		2,900
Fort Frederica National Monument (Ga.): All other projects	17,700		17,700
Fort Pulaski National Monument (Ga.): All other projects	50,879	46,408	4,471
Fort Raleigh National Historic Site (N.C.): Entrance road and parking area	249,421	249,421	
Fort Sumter National Monument (S.C.): All other projects	8,820	8,815	5
Fredericksburg-Spotsylvania National Military Park (Va.): All other projects	11,500	4,550	6,950
Great Smoky Mountains National Park (N.C. and Tenn.):			
Reconstruct Newfound Gap parking area	500,000		500,000
Clearing, grubbing, drain, base, and surface, Cataloochee Rd., inside park	1,046,800	837,182	209,618
Grub, clear, grade, base and surface, Bryson-Goldmine Branch Rd	716,142	716,142	
Grade, drain, base, and surface, Clingmans-Dome Rd., 4.7 miles	428,225	428,108	117
Reconstruct and final surface, Towstring-Kephart Prong, 4.9 miles	641,510	639,815	1,695
Newfound Gap Highway, Newfound Gap to Kephart Prong, 5.5 miles	1,326,417	1,326,085	332
Grading and stone base course, Bryson-Noland Creek, 4 miles	634,221	614,868	19,353
All other projects	242,191	242,191	
Horseshoe Bend National Military Park (Ala.): All other projects	167,361	166,444	917
Hot Springs National Park (Ark.): All other projects	59,300		59,300
Kennesaw Mountain National Battlefield Park (Ga.): All other projects	15,360	6,482	8,878
Mammoth Cave National Park (Ky.):			
Grade, base, structures, sec. 1A and surface secs. 1A and 1B	268,100		268,100
All other projects	47,666	47,666	
Manassas National Battlefield Park (Va.): All other projects	9,900	832	9,068
Natchez Trace Parkway (Ala., Miss., and Tenn.):			
Grade, drain, base, surface, and structures, Tennessee 99 to County Rd	520,000		520,000
Grade, drain, base, Little Swan Creek-Tennessee 99	997,658	995,009	2,649
Grading, base, box bridge and surface treatment to Alabama highway to north side of Tennessee River Bridge	1,051,019	1,046,509	4,510
Relocation of road, Pearl River Water Supply District and grade separation and access, Mississippi Highway 43 and airport road	2,988,107	2,978,907	9,200
Grade, drain, surface, and structures, U.S. 61-Mississippi 522	1,043,800		1,043,800

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con

Area and project	Funds available	Expended or obligated	Balance
SOUTHEAST REGION—continued			
Natchez Trace Parkway (Ala., Miss., and Tenn.)—Con.			
Grade, drain, base, surface, and structures, Oakley-Edwards Rd., U.S. Highway 80	$2,495,200		$2,495,200
Surface treatment, Oakley-Edwards Rd., Big Bayou Pierre	307,910	$304,182	3,728
Grade, drain, base, surface treatment and bay bridges and structures, Big Bayou Pierre Highway, U.S. 61	3,434,861	3,423,046	11,815
Grade, drain, base structures, and surface, U.S. 51 Interstate 55	1,120,000	692,340	427,660
Completion of structures, 2C1	360,000		360,000
Grading and surfacing of Colbert Ferry developed area, entrance road, and parking area	337,100		337,100
All other projects	281,524	76,517	205,007
Pea Ridge National Military Park (Ark.): All other projects	194,541	182,541	12,000
Petersburg National Military Park (Va.): All other projects	192,964	178,965	13,999
Russell Cave National Monument (Ala.): All other projects	7,393	7,393	
Shenandoah National Park (Va.):			
Exterior and interior roads, parking areas, walks, trails and signs, Loft Mountain campground	243,580	243,580	
All other projects	442,935	431,059	11,876
Stones River National Battlefield (Tenn.): All other projects	2,823	2,818	5
Vicksburg National Military Park and National Cemetery (Miss.):			
Transfer to city of Vicksburg for construction of city streets	1,000,000	1,000,000	
All other projects	212,020	206,620	5,400
Virgin Islands National Park (V.I.): All other projects	66,537	61,512	5,025
Total, southeast region	45,743,196	34,469,255	11,273,941
SOUTHWEST REGION			
Arches National Monument (Utah): All other projects	171,442	166,532	4,910
Aztec Ruins National Monument (N. Mex.): All other projects	2,910		2,910
Bandelier National Monument (N. Mex.): All other projects	14,250		14,250
Big Bend National Park (Tex.):			
Route 5 from Route 3 to Castolon and interpretive spur road (complete)	725,566	725,566	
Route 5 from Route 3 interpretive spur roads (portion)	625,096	625,096	
All other projects	63,285	46,908	16,377
Bryce Canyon National Park (Utah): All other projects	74,274	53,384	20,890
Canyon de Chelly National Monument (Ariz.): All other projects	470		470
Capitol Reef National Monument (Utah): All other projects	39,535	29,510	10,025
Capulin Mountain National Monument (N. Mex.): All other projects	156,068	156,068	
Carlsbad Caverns National Park (N. Mex.): All other projects	68,114	67,176	938
Coronado National Monument (Ariz.): All other projects	32,564	30,701	1,863
El Morro National Monument (N. Mex.): All other projects	9,300	9,300	
Fort Davis National Historic Site (Tex.): All other projects	1,180		1,180
Gila Cliff Dwellings National Monument (N. Mex.): All other projects	19,300		19,300
Grand Canyon National Park (Ariz.): All other projects	233,805	118,581	115,224
Great Sand Dunes National Monument (Colo.): All other projects	195,632	192,593	3,039
Hovenweep National Monument (Colo.-Utah): All other projects	74,366	74,366	
Lake Mead National Recreation Area (Ariz.-Nev.):			
Construct North Shore Road, Las Vegas Wash to Callville, Wash	1,627,589	1,623,489	4,100
All other projects	307,405	239,456	67,949
Mesa Verde National Park (Colo.):			
Realine Navajo Hill entrance road (portion) and parking area	429,325	428,325	1,000
Wetherill Mesa Road, Navajo Hill to Wetherill Mesa including loop and parking area at Rock Springs	672,000		672,000
Campground circulatory roads, turnouts and parking areas and access roads to sewage lagoon, Navajo Hill	632,809	632,809	
All other projects	181,771	181,771	
Natural Bridges National Monument (Utah):			
Approach road and parking area	223,640	223,640	
All other projects	326,806	308,106	18,700
Navajo National Monument (Ariz.):			
Approach road and visitor center parking area (portion)	832,499	832,499	
All other projects	75,748	73,188	2,560

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

Area and project	Funds available	Expended or obligated	Balance
SOUTHWEST REGION—continued			
Organ Pipe Cactus National Monument (Ariz.): All other projects	$11,050	$11,050	
Petrified Forest National Park (Ariz.): Reconstruct roads south of U.S. 66	440,635	440,635	
Saguaro National Monument (Ariz.): All other projects	24,890		$24,890
Timpanogos Cave National Monument (Utah): All other projects	15,700	4,616	11,084
Tonto National Monument (Ariz.): All other projects	13,833	13,833	
Walnut Canyon National Monument (Ariz.): All other projects	11,140		11,140
Wupatki-Sunset Crater National Monuments (Ariz.):			
Grade base, surface portion of section D	239,365	239,365	
All other projects	21,820		21,820
Zion National Park (Utah):			
Construct Kolob Canyon Road, U.S. 91-Lee Pass (portion)	351,642	351,642	
Construct Kolob Canyon Road, U.S. 91-Lee Pass (portion)	362,250		362,250
Total, southwest region	9,309,074	7,900,205	1,408,869
WESTERN REGION			
Cabrillo National Monument (Calif.): All other projects	4,800		4,800
City of Refuge National Historical Park (Hawaii): All other projects	82,416	82,416	
Crater Lake National Park (Oreg.):			
Reconstruct Route 2, south boundary to Annie Spring	839,294	838,093	1,201
All other projects	11,148	9,737	1,411
Death Valley National Monument (Calif.): All other projects	39,861	37,761	2,100
Glacier Bay National Monument (Alaska): All other projects	52,300	52,300	
Hawaii Volcanoes National Park (Hawaii):			
Clear, grade, drain, and subbase Kalapana Road	419,565	419,565	
Final paving, Kalapana Road	729,938	729,938	
Joshua Tree National Monument (Calif.): All other projects	6,400	3,517	2,883
Katmai National Monument (Alaska): All other projects	8,725	8,725	
Lassen Volcanic National Park (Calif.):			
Realine Route 1 constructing bridge underpass road, roads, walks and parking area, southwest development area	510,769	500,884	9,885
All other projects	200,962	193,038	7,924
Lava Beds National Monument (Calif.):			
Reconstruct, grade and base course north boundary road	377,988	357,988	20,000
All other projects	45,156	41,624	3,532
Mount McKinley National Park (Alaska):			
Bridges at 3.5 and 5.7 miles, drainage correction riprap at small bridge	282,536	282,536	
All other projects	2,350	2,350	
Mount Rainier National Park (Wash.):			
Recondition and pave Nisqually entrance road, Longmire to Narada Falls (portion)	297,775	297,775	
Recondition and pave Nisqually entrance road	268,900		268,900
Rehabilitate structures and drainage, Steven's Canyon Road	380,000		380,000
All other projects	178,404	88,926	89,478
Olympic National Park (Oreg.):			
Reconstruct, extend, and pave campground road and portion of main road	216,311	208,831	7,480
All other projects	29,300	15,402	13,898
Point Reyes National Seashore (Calif.): All other projects	448,570	119,541	329,029
Sequoia-Kings Canyon National Parks (Calif):			
Access campground roads, Grant Grove	240,000		240,000
All other projects	517,681	375,405	142,276
Sitka National Monument (Colo.): All other projects	43,225	38,225	5,000
Whiskeytown Recreation Area (Calif.):			
Road Brandy to Dry Creek, campground roads, and Brandy Creek Bridge	209,982	205,657	4,325
All other projects	334,984	238,314	96,670
Yosemite National Park (Calif.):			
Clearing and grading Big Oak Flat Rd	835,296	835,296	
Big Oak Flat Rd., Crane Flat to Carl Inn, surface and pave	341,200		341,200
All other projects	162,887	120,594	42,293
Total, western region	8,118,723	6,104,438	2,014,285

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

Area and project	Funds available	Expended or obligated	Balance
MIDWEST REGION			
Badlands National Monument (S. Dak.):			
Top surface, Cedar Pass-Pinnacles Highway	$651,825	$651,425	$400
All other projects	108,465	73,565	34,900
Big Hole National Battlefield (Mont.): All other projects	72,077		72,077
Colorado National Monument (Colo): All other projects	101,724	33,880	67,844
Custer Battlefield National Monument (Mont.): All other projects	22,000		22,000
Devils Tower National Monument (Wyo.): All other projects	8,000	5,175	2,825
Dinosaur National Monument (Colo.-Utah):			
Reconstruct Harpers Corner Rd., Blue Mountain Junction to Harpers Corner	1,320,055	1,320,055	
Reconstruct Echo Park Rd., grade, base, and bituminous stabilize	784,000		784,000
Quarry-Blue Mountain Rd., Quarry to Cub Creek campground, including bridge	635,200		635,200
All other projects	206,479	200,988	5,491
Fort Laramie National Historic Site (Wyo.):			
Entrance, utility, and residential roads and parking	226,880		226,880
All other projects	28,300		28,300
George Washington Carver National Monument (Mo.): All other projects	3,850	3,850	
Glacier National Park (Mont.):			
Reconstruct Two Medicine Rd. and approach	474,788	474,469	319
Camus Creek cutoff, Flathead River Bridge, and approaches (portion)	402,400	239,097	163,303
Restore storm damage, Going-to-the-Sun Rd	300,000		300,000
Camus Creek Cutoff and Fish Creek campground roads	419,336	419,336	
All other projects	969,294	533,237	436,057
Grand Portage National Monument (Minn.): All other projects	2,000		2,000
Grand Teton National Park (Wyo.):			
Reconstruct Jackson Hole Highway, Moose Junction to south boundary	513,200	497,463	15,737
Reconstruct north approach road to Yellowstone	200,000		200,000
All other projects	535,523	468,023	67,500
Jewel Cave National Monument (S. Dak.): All other projects	98,000		98,000
Mount Rushmore National Memorial (S. Dak.): Overflow parking area	219,729	219,727	2
Pipestone National Monument (Minn.): All other projects	6,200	5,985	215
Rocky Mountain National Park (Colo.): All other projects	361,899	339,607	22,292
Shadow Mountain National Recreation Area (Colo.): All other projects	107,723	107,723	
Theodore Roosevelt National Memorial Park (N. Dak.):			
Construct scenic loop road, grade, base, stabilize (portion)	560,000		560,000
Construct scenic loop road, grade, base, stabilize	532,000		532,000
Wilson's Creek Battlefield National Park (Mo.): All other projects	16,000		16,000
Wind Cave National Park (S. Dak.): All other projects	29,043	29,041	2
Yellowstone National Park (Mont.-Wyo.):			
Grand loop, Route 1–E, Arnica Creek-Bridge Bay, grade, base, surface (portion)	886,698	856,489	30,209
Norris to canyon, Route 12, grade, base, surface, structures (portion)	787,243	769,241	18,002
Reconstruct northeast entrance road and bridge approaches	239,722	175,880	63,842
Reconstruct Route 5, east entrance to parking area, base, surface	800,000		800,000
Norris bypass and parking area and reconstruct road from Norris bypass to Gibbon River Bridge	636,000		636,000
Reconstruct road and parking areas, Chittenden Bridge to Artist Point, base and surface	260,000		260,000
All other projects	883,723	696,848	186,875
Total, Midwest region	14,409,376	8,121,104	6,288,272

Status of construction projects and funds available in 1965 as of Dec. 31, 1964—Con.

Area and project	Funds available	Expended or obligated	Balance
NATIONAL CAPITAL REGION			
Anacostia Park (D.C.): All other projects	$97,648	$38,712	$58,936
Baltimore-Washington Parkway (Md.): All other projects	304,231	184,779	119,452
Catoctin Mountain Park (Md.): All other projects	71,902	55,317	16,585
Chesapeake and Ohio Canal (D.C.-Md.): All other projects	10,740	10,740	
Deingerfield Island (Va.): All other projects	60,116	40,722	19,394
East Potomac Park (D.C.): All other projects	315,227	300,479	14,748
Executive Mansion and Grounds (D.C.): All other projects	38,000		38,000
George Washington Memorial Parkway (Md.-Va.):			
Grade, drain, pave; District of Columbia line to McArthur Blvd	1,389,559	1,375,692	13,867
Complete Route 100: District of Columbia line to McArthur Blvd., including D.C. Transit right-of-way	1,100,000	592,805	507,195
Reconstruct picnic access and parking, Fort Hunt	307,342	307,342	
Reconstruction and relocation of highways in vicinity of Arlington Memorial Bridge	480,000		480,000
Reconstruct entrance road, Fort Hunt	220,560		220,560
Reconstruction and relocation of roadway, 1-A boundary channel, bridge-grade, drain, etc	629,667	629,667	
1-A boundary channel bridge and approaches	310,110	295,130	14,980
All other projects	914,897	426,527	488,370
Glover Archbold Park (D.C.): All other projects	32,000	10,680	21,320
Palisades Parkway (D.C.):			
Grade, drain, and structures, District of Columbia line to Arizona Ave	800,000		800,000
All other projects	122,439	103,689	18,750
Park system, general (District of Columbia): All other projects	107,400		107,400
Prince William Forest Park (Va.): All other projects	53,060	52,820	240
Rock Creek and Potomac Parkway (D.C.):			
Zoo bypass, paving, fencing, and signs	325,040		325,040
Reconstruct parkway between Shoreham Hill and Massachusetts Ave., and P St. to Pennsylvania Ave	458,240		458,240
Zoo bypass tunnel, lighting, lining, painting, portals, etc.; north of Calvert St. to Harvard St	2,090,724	2,090,724	
Bridge and Rock Creek at Calvert St	260,074	260,074	
Harvard St. overpass	300,000		300,000
All other projects	316,000	4,000	312,000
West Potomac Park (D.C.):			
Reflecting Pool drives, Lincoln Memorial to 14th St. (portion)	240,000		240,000
All other projects	229,455	227,207	2,248
South Reflecting Pool Dr	193,859	193,859	
Total, National Capital region	11,778,290	7,200,965	4,577,325
Grand total, all regions	92,539,847	65,870,770	26,669,077
Plans, surveys supervision, contingencies, etc			5,302,791
Total balance, Dec. 31, 1964			31,971,868
Prior year funds	38,649,916		
Unobligated balances of prior year funds available in 1965	19,041,731		
1965 appropriations	34,848,200		
Total	92,539,847		

NINETEEN HUNDRED AND SIXTY-FIVE LAND ACQUISITIONS

Chairman HAYDEN. Will you please place in the record a table, by Park Service facility, of the lands for which acquisition funds were available in fiscal year 1965? Indicate for each land acquisition the amount made available for the purchase, whether the acquisition has been accomplished, the cost of the acquisition, and the amount remaining of the sum provided for each appropriated acquisition.

Mr. HARTZOG. Thank you, sir. We have that table, and we will be pleased to insert it in the record.

(The table referred to follows:)

STATEMENT SHOWING CERTAIN INFORMATION CONCERNING THE ACQUISITION OF LANDS PROGRAM AS OF JAN. 31, 1965

	Total available, 1965 fiscal year	Obligations through Dec. 31, 1964	Obligated or committed since Dec. 31, 1964 (estimated)	Uncommitted balance, Jan. 31, 1965 (estimated)	Remarks applicable to uncommitted balance
Cape Cod National Seashore	$4,355,015	$1,194,198	$760,817	$2,400,000	Required to support current negotiations.
Civil War areas	426,606	161,396		265,210	Required for proposed acquisitions at Antietam National Battlefield Site, $86,000; Gettysburg National Military Park, $77,000; Manassas National Battlefield Park, $73,625.
Everglades National Park	452,000	451,597		403	
Fire Island National Seashore	1,100,000	98,656	826,344	175,000	Required to support current negotiations.
Fort Davis National Historic Site, Fort Smith National Historic Site, and Lincoln Boyhood National Memorial.	70,053	36,250		33,803	Options being negotiated in this amount for Lincoln Boyhood National Memorial.
General land acquisition (inholdings and extension of existing boundaries).	55,902	20,226	15,676	20,000	Required to satisfy deficiency judgments in pending suits.
Home of Franklin D. Roosevelt National Historic Site	200,000	75,000		124,800	Required to satisfy possible deficiency judgment in pending suit and purchase of additional land.
Matching land acquisition	384,309	57,458	70,000	256,851	Required for negotiated land purchases at Grand Teton National Park.
Minute Man National Historical Park	1,097,227	124,200	56,800	916,227	Required to support current negotiations.
Morristown National Historical Park	281,000			281,000	Required to purchase 281 acres in 1 ownership.
Miscellaneous (Independence National Historical Park, Great Smoky Mountains National Park, and Harpers Ferry National Historical Park Storer College).	141,831	49,374	10,710	81,747	Committed for acquisitions on Tennessee side of park, Great Smoky Mountains National Park, $5,016. Required for acquisitions at Christ Church, St. Joseph, and St. George, Independence National Historical Park, $76,731.
Padre Island National Seashore	4,861,705	57,935		4,803,770	Required to support current negotiations with interlocking corporation.
Point Reyes National Seashore	7,197,621	4,317,265	2,261,055	619,301	Required to support current negotiations.
Total	20,623,269	6,643,755	4,001,402	9,978,112	

UNOBLIGATED BALANCES

Chairman HAYDEN. Does any unobligated balance of land acquisition funds which may remain on June 30 of this year continue under the jurisdiction of the National Park Service, or will it revert to the Bureau of Outdoor Recreation for accomplishment of the acquisitions?

Mr. HARTZOG. Sir, it will remain on our books and be available for expenditure until it has been utilized for acquisition.

EMPLOYEE HOUSING

Chairman HAYDEN. Your justifications indicate that you are asking $2,889,700 for employee housing. How many housing units do you expect to acquire with this sum?

Mr. HARTZOG. Sir, the program will provide 64 permanent single family housing, it will provide 81 multiple housing units, and it will provide for 52 house trailer units. We have a statement on this which we would be pleased to insert in the record.

Chairman HAYDEN. The statement may be inserted in the record.

(The statement referred to follows:)

EMPLOYEE HOUSING

1966 CONSTRUCTION PROGRAM

Region and park area	Housing units			Programed amount
	Single and duplex	Multiple	Trailers	
Southeast region:				
Arkansas Post National Memorial	1			$20,000
Blue Ridge Parkway	2			40,000
Cape Hatteras National Seashore	3			60,000
Chalmette National Historial Park	2			40,000
Everglades National Park		8		123,100
Fort Raleigh National Historic Site	1			20,000
Great Smoky Mountains National Park		2		17,500
Natchez Trace Parkway	2			40,000
Petersburg National Memorial Park	2			41,000
Shenandoah National Park		8		87,600
Subtotal, southeast region	13	18		489,200
Southwest region:				
Big Bend National Park			25	120,000
Canyon de Chelly National Monument	3		4	82,600
Canyonlands National Park			5	30,000
Capulin Mountain National Monument	1			20,000
Fort Bowie National Historic Site			4	20,000
Gila Cliff Dwellings National Monument	2			40,000
Grand Canyon National Park and National Monument		22	5	338,200
Lake Mead National Recreation Area	9		2	191,000
Padre Island National Seashore	2			40,000
Tumacacori National Monument	1			20,000
Wupatki-Sunset Crater National Monument	3		3	78,000
Subtotal, southwest region	21	22	48	979,800
Western region:				
Coulee Dam National Recreation Area	3			60,000
Death Valley National Monument	2	4		89,200
Glacier Bay National Monument	2			96,400
Haleakala National Park	1			30,600
Lassen Volcanic National Park	2			40,000
Pinnacles National Monument			1	9,000
Sequoia-Kings Canyon National Parks		12		176,300
Yosemite National Park		4		52,300
Subtotal, western region	10	20	1	553,800
Midwest region:				
Bent's Old Fort National Historic Site	2			40,000
Dinosaur National Monument	1			20,000
Glacier National Park	4	12		213,400
Grand Teton National Park	2			40,000
Theodore Roosevelt National Memorial Park	1			14,300
Yellowstone National Park	10	[1] 9	3	464,900
Subtotal, midwest region	20	21	3	792,600
Add: Rehabilitation, alterations, advance planning, etc.				74,300
Grand total	64	81	52	[2] 2,889,700

[1] Includes 1 dormitory unit.
[2] Includes $277,800 for 52 trailers.

CONSTRUCTION OF HOSPITAL AT GRAND CANYON PARK

Chairman HAYDEN. Why has it been decided to construct a hospital at South Rim Village in Grand Canyon Park? Are the facilities at Flagstaff and Williams not adequate, or is the distance to these cities too great?

Mr. HARTZOG. Sir, the existing hospital at Grand Canyon is a 10-bed facility and it does not meet the standards of the State of Arizona Health Department. This hospital not only serves the resident population of Grand Canyon Village, which is about 1,200 year around, but

it serves a great number of transient visitors, last year in the vicinity of 1,600,000 during the course of the year.

It provides hospitalization, bed care, as well as extensive outpatient care. Now, Williams is about 60 miles away and it has a 20-bed facility with 3 doctors. Flagstaff is about 90 miles away and it has a larger facility. But for outpatient care these distances are just too far in order to provide the need that the visitors and the resident population have for medical attention at Grand Canyon.

District of Columbia Park System

Chairman Hayden. I wish you would explain to the committee just what you propose to do with the funds requested for the three items in the District of Columbia park system. The tabulation of these funds appears on page 128.

Mr. Hartzog. Sir, with the chairman's permission, I would ask Mr. Jett to comment on these items.

Mr. Jett. Mr. Chairman, the first of these items is for the Anacostia Park visitor shelter and workshop. This will be at Kenilworth Aquatic Gardens, a gift to the Nation in the 1920's. It is probably one of the finest aquatic exhibits in the Nation.

We have operated there for a number of years in the old dwelling house formerly occupied by the people who donated this to the Service. This is what we are asking to be replaced.

The second is the restoration of the Abner Cloud House. It is on the C. & O. Canal. This is an old stone building that was built in 1821 and was owned by a family by the name of Cloud. This is a very historic building.

It is in a bad state of repair and gets a great deal of comment from people who visit and see the area. We would like to stabilize this building and use it for employee housing and give some protection to the canal, and also provide space for some modest exhibits on the history of the old Potomac Co.

The third item is for cafeteria and training facilities at our new headquarters building at East Potomac Park. When it was first designed it provided for a unit to house the administrative staff of the region, the second to house the U.S. Park Police, and the third was to provide a small cafeteria with a seating capacity of 150 seats to accommodate the 300 employees we have in this area.

In addition to that, it will provide space for a very active training program we have in the region for both our park police as well as other members of our staff, which is now conducted in a temporary building which must be torn down in a park in Alexandria.

The next items are for the improvement of the small parks and reservations in the Capital City. As you all know there are a number of small squares and parks which lie in the principal avenues that converge on the White House and U.S. Capitol Buildings.

Over the past few years the Congress has made available to us the money to improve these areas which for the most part have not received any major attention since the 1930's. Most of the money is required to improve lighting, walks, some refurbishing. I have a list here of those we have done with the money you have provided, if you would like that information.

Chairman Hayden. Put it in the record.

Mr. JETT. Yes, sir, I will.
(The list referred to follows:)

SMALL PARKS AND RESERVATIONS WHICH HAVE BEEN COMPLETED FROM 1962 TO PRESENT

Franklin Park, between 13th and 14th, I and K Streets NW.
Reservation 376, Rhode Island Avenue and 14th Street NW.
Netherlands Carillon, near U.S. Marine Corps Memorial, Arlington, Va.
Reservation 374, 3107 Bladensburg Road NE.
East Capitol and 22d Street (Armory Mall).
Farragut Square, between I and K Streets at 17th Street NW.
Reservation 309C, 16th and Harvard Streets NW.
Reservation 700, Wisconsin and Massachusetts Avenues NW.
Stanton Park, Maryland and Massachusetts Avenues at C Street NE.
Marion Park, between 4th and 6th Streets at South Carolina Avenue SE.
Washington Circle, Pennsylvania Avenue at K Street NW.
Planting Hemicycle, Arlington National Cemetery, at terminus of Memorial Avenue, Arlington, Va.
C. & O. Canal Barge Landing, between 30th and Jefferson Streets NW. at the C. & O. Canal.
Union Station Plaza, North Capitol Street and Massachusetts Avenue NW.
Reservation 318, Georgia Avenue and Upshur Street NW.

AIRPORT AUTHORIZATION LEGISLATION

Chairman HAYDEN. In the Supplemental Appropriations Act of last October, $452,000 was appropriated for acquisition of land then owned by the Farmers Home Administration in the Everglades National Park. Have you added this land to the park?

Mr. HARTZOG. Mr. Chairman, we have added it to the park. The transaction was concluded in November of 1964.

LAND ACQUISITION FOR POINT REYES, FIRE ISLAND, AND MORRISTOWN NATIONAL HISTORICAL PARKS

Chairman HAYDEN. Last year funds were appropriated for land acquisition for Point Reyes National Seashore, for Fire Island National Seashore, and for the Morristown National Historical Park. What progress have you made with these funds? Has any land actually been acquired?

Mr. HARTZOG. Sir, about $13.5 million of the $14 million appropriated for Point Reyes has been obligated. For this expenditure we have acquired about 14,500 acres of land. Within the existing authorization we are not going to be able to purchase all of the land authorized for acquisition within the area. But, unless or until additional authorization is received any further activity will be out of the remaining $500,000 appropriation and through exchanges which are also authorized in the legislation.

We expect to acquire the land at Morristown within the next 2 or 3 months. Good progress is being made at Fire Island in initiating a land acquisition program, where option contracts have been entered into for several tracts and active negotiations are underway on others.

AIRPORT AUTHORIZATION LEGISLATION

Chairman HAYDEN. In its fiscal year 1965 report, the committee urged that attention be given to legislation needed to increase authorization for participation by the National Park Service in develop-

ment of airports in or near national park facilities. Would you please outline for the committee the situation with regard to this matter?

Mr. HARTZOG. Sir, we have, as requested, analyzed the matter and the material is now undergoing review in the executive department.

Chairman HAYDEN. No action has been taken?

Mr. HARTZOG. No, sir. It requires additional authorization by the Congress. This report is now undergoing review in the executive department.

STATUS OF EVERGLADES WATER STUDY PROJECT

Chairman HAYDEN. One of the projects which is still a matter of concern to the National Park Service is the water situation in the Everglades National Park. The Corps of Engineers is still working on a prospective modification of its basic flood control plan, and your justifications at page 131 indicate that you must have sufficient funds for participating with the corps. What is your estimate of the amount of money required?

Mr. HARTZOG. Sir, our participation in this program arises out of the study, as the chairman points out, being carried on by the corps under the resolution of the Senate committee. Our part in it is to supply the corps with estimates on the amount of water required. The quality of this water, the time for it, and when this should be distributed, because the environment in Everglades is primarily a water environment.

But more than this, it is an environment that requires water at certain specific times in order to support the aquatic and bird life there. This work is being carried on by us and the Geological Survey together.

Our participation is estimated in 1966 at $17,000 and we forecast that this may increase in the next 4 years to $21,500. The Geological Survey participation will amount to about $48,500 in 1966 for a total of the two bureaus in the vicinity of about $65,500, which is to be financed by this service.

CRUISE BOAT FOR GLACIER BAY, ALASKA

Chairman HAYDEN. Please explain the need for $241,000 for a 50-passenger cruise boat at Glacier Bay National Monument, Alaska, as shown on page 127 of the justifications?

Mr. HARTZOG. Sir, this boat item was considered by the committee for the 1965 fiscal year as a part of an item for $1,100,000 for improvements at Glacier Bay. The Congress last year gave us $845,000 to provide employee quarters, a lodge building and guest cabins at Glacier Bay and suggested that we come back in 1966 for projects which could be deferred until then. The boat was one of the items we deferred.

Further than this, we have been reevaluating this method of proposed operation at Glacier Bay. Unfortunately the study was not completed in time to be reflected in these estimates which are now before you.

We have taken the matter up with the Department and the Bureau of the Budget. We would ask that this money that is now in here for a boat to be used to provide additional guest cabins at Glacier Bay. We would propose then to charter a boat out of our regular operating

money until such time as we had established a definite requirement as to the kind of boat that should be purchased by the Government.

The facility there requires accommodations for about 50 overnight guests in order to make it economically feasible. At the time of the original program, we had contemplated providing about 30 of these facilities on the shore with cabins and the remainder of them on the boat.

But, our further study indicates that this would not be as feasible as providing the additional overnight accommodations by building cabins, and chartering the boat.

Senator MUNDT. What is your visitation?

Mr. HARTZOG. Sir, about 1,000.

Senator MUNDT. 1,000 a year?

Mr. HARTZOG. Yes, sir. Because there are no accommodations there. If you are going there the distance is such that you just have to stay overnight. So that without accommodations the people who go now just have to bunk on the boats. There are just no facilities there for them. We think once facilities are provided that the visitation will increase considerably because there is a great deal of increasing interest in Alaska and travel to Alaska.

Senator MUNDT. At the end of this appropriation year, how many will you be able to accommodate overnight?

Mr. HARTZOG. Sir, if the committee approves this request, we have the plans and specifications ready to go to bid. We would propose to include an addendum in the bids allowing the Government to add the additional cabin units, and we would construct the entire plant for about 50 overnight guests, the lodge building and employee housing this coming summer, so we would be able to take care of overnight guests at the end of this coming summer.

PERIOD OF OPERATION

Senator MUNDT. Over how long a period do you operate it?

Mr. HARTZOG. We think the season there should be from 3 to 4 months. This is one of the reasons we should prefer to go into a charter boat arrangement for the time being. We have found in our Isle Royale boat operation that you have to arrange for year-round employment, otherwise the qualified individual is in demand and he goes elsewhere and then you have manpower trouble. This is why we would like to charter the boat.

Chairman HAYDEN. Without objection, your request for a change in the estimate to provide for cabins in lieu of the boat is approved.

Mr. HARTZOG. Thank you, very much.

CONSTRUCTION (LIQUIDATION OF CONTRACT AUTHORIZATION)

Chairman HAYDEN. The justification for an appropriation of $34 million for construction (liquidation of contract authorization) will be printed in the record. This is $5 million greater than the amount appropriated for this purpose in fiscal year 1965 and will provide $9 million for parkways and $25 million for roads and trails.

(The justification referred to follows:)

CONSTRUCTION (LIQUIDATION OF CONTRACT AUTHORIZATION)

Appropriation, 1965		$29,000,000
Decreases:		
Parkways	$11,500,000	
Roads and trails	17,500,000	
		29,000,000
Subtotal		
Increases:		
Parkways	9,000,000	
Roads and trails	25,000,000	
		34,000,000
Budget estimate, 1966		34,000,000

Analysis by activities

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
1. Parkways	$16,585,266	$14,979,994	$9,000,000	−$5,979,994
2. Roads and trails	17,117,610	20,041,460	25,000,000	+4,958,540
Total expenditures	33,702,876	35,021,454	34,000,000	−1,021,454
Less: Balance available from prior year	−10,724,330	−6,021,454		+6,021,454
Total expenditures from current appropriation	22,978,546	29,000,000	34,000,000	+5,000,000

CONTRACT AUTHORIZATION AND LIQUIDATION PROGRAM

	Contract authority available	Obligations	Unliquidated obligations, prior years	Total obligations	Expenditures	Unliquidated obligations carried forward
Fiscal year 1964:						
Parkways	$22,506,580	$12,919,753	$21,058,680	$33,978,433	$16,585,266	$17,393,167
Roads and trails	23,068,464	20,534,892	14,693,106	35,227,998	17,117,610	18,110,388
Total	45,575,044	33,454,645	35,751,786	69,206,431	33,702,876	[1] 35,503,555
Fiscal year 1965:						
Parkways	25,586,827	12,400,000	17,393,167	29,793,167	14,979,994	14,813,173
Roads and trails	27,533,571	23,182,300	18,110,388	41,292,688	20,041,460	21,251,228
Total	53,120,398	35,582,300	35,503,555	71,085,855	35,021,454	36,064,401
Fiscal year 1966:						
Parkways	24,186,827	9,000,000	14,813,173	23,813,173	9,000,000	14,813,173
Roads and trails	27,351,271	24,274,000	21,251,228	45,525,228	25,000,000	20,525,228
Total	51,538,098	33,274,000	36,064,401	69,338,401	34,000,000	35,338,401

[1] Available cash for liquidation is $6,021,454: balance of $29,482,101 is unfunded obligations.

Status of cash appropriation for liquidation of contract authorization

	1964	1965	1966
Appropriation	$29,000,000	$29,000,000	$34,000,000
Unexpended balance start of year	10,724,330	6,021,455	
Total Available	39,724,330	35,021,455	34,000,000
Less: Expenditures	33,702,875	35,021,455	34,000,000
Unexpended balance end of year	6,021,455		

Need for funds.—The $34 million estimate is for liquidating contractual obligations scheduled for the 1965 and prior year programs and for making partial payments against obligations to be incurred during 1966.

Contract authorizations for the 1965 and 1966 fiscal years are provided in section 2(5) and section 2(6) of the Federal-Aid Highway Acts of 1962 and 1964, respectively. The contract authorizations provided for those years, the approved program level for 1965, and the proposed program level for 1966 under the authorizations are as follows:

	Parkways	Roads and trails
1964 unprogramed contract authorization	$2,550,000	$400,000
1965 contract authorization	16,000,000	25,000,000
Total available contract authorization for 1965	18,550,000	25,400,000
Less 1965 approved program	12,400,000	[1] 23,182,300
1965 contract authorizations, unprogramed	6,150,000	2,217,700
1966 contract authorization	11,000,000	23,000,000
Total available contract authorization for 1966	17,150,000	25,217,700
1966 proposed programs	9,000,000	24,274,000
Unprogramed 1966 contract authorization	8,150,000	943,700

[1] Includes $1,100,000 released from budget reserve to cover emergencies not foreseeable at the time the 1965 programs were prepared.

1. Parkways, $9 Million

The estimate provides $9 million to meet expenditure requirements estimated to accrue through the 1966 fiscal year for liquidation of obligations incurred and to be incurred under the contract authorization.

The proposed $9 million program for 1966 would permit work on seven of nine authorized parkways. Of the 17 Bureau of Public Roads projects proposed, 3 involve amounts in excess of $500,000 each, of which 2 exceed $1 million each. The acquisition of parkways lands and their donation to the Federal Government is being pursued by the various States so that construction can move forward without delay upon approval of the program.

The Blue Ridge Parkway, which is nearing completion, had more than 7 million visits during 1964. Other parkways continue to receive enormous public use, and each new stretch of completed mileage calls for complementary facilities, such as access roads, campgrounds, picnic areas, utility systems, and comfort stations. Other associated facilities, such as utility buildings, must also be provided. The 1966 program provides $1 million for these purposes.

BUREAU OF PUBLIC ROADS PROJECTS

Blue Ridge Parkway, $849,200 (North Carolina, $547,800; Virginia, $301,400).—This parkway was started in 1933 under authority of the National Industrial Recovery Act of June 16, 1933. When completed, it will extend along the crest of the Blue Ridge Mountains for a distance of 469 miles from Shenandoah National Park in Virginia to Great Smoky Mountains National Park in North Carolina.

In North Carolina, the program provides for guardrail work and for a permanent type of wearing surface on 27 miles of parkway located southwest of Asheville, opened to traffic in the late fall of 1962. This work is necessary for the safety and comfort of the motorist and to hold and protect the stone base from deterioration. Upon completion of this work, the entire motor road from Flat Laurel Gap to its southern terminus in Great Smoky Mountains National Park, some 61 miles, will be completed. An adjacent 15-mile section from Flat Laurel Gap to North Carolina 191 at the French Broad River is scheduled for completion in 1965, thus providing the motorist with 76 miles of continuous parkway below Asheville.

In Virginia, funds are provided for eliminating dangerous road crossings and for the general relocation of certain public roads. A grade separation structure at Sunset Field is necessary for U.S. Air Force access to the Bedford Radar Base on Apple Orchard Mountain, and to avoid nonconforming commercial use of the

parkway by the base's suppliers and contractors. A slope repair project on a section near Roanoke will prevent damage to the existing roadway and prevent further damage to adjacent private lands.

Colonial Parkway, $388,000 (Virginia).—The Colonial Parkway had its inception in the act of July 3, 1930, the basic act for establishing Colonial National Historical Park. Subsequently, the parkway was more specifically authorized by the act of June 5, 1936 (16 U.S.C. 81c). It connects Yorktown, Williamsburg, and Jamestown Island by a 22-mile scenic roadway, portions of which parallel the York and James River.

Due to extreme settlement of hydraulic-placed fill on the Parkway, the pavement surface on approximately 0.65 mile has become so uneven and distorted that it requires removal and replacement for the safety and comfort of the public. The program includes this reconstruction work in addition to fill stabilization work on the northern approach to College Creek Bridge, and the construction of stone riprap seawall to prevent further erosion along the James and York Rivers shorelines. Other improvements include resurfacing of the parkway across the isthmus to Jamestown Island to restore and preserve the original riding qualities and interior iuprovements in the parkway tunnel at Williamsburg.

Foothills Parkway, $2,273,500 (Tennessee).—The parkway was authorized by the act of February 22, 1945 (16 U.S.C. 403h–11). When completed it will extend 68 miles generally parallel to the northern boundary of the Great Smoky Mountains National Park between the Pigeon River and the Little Tennessee River. An additional 4 miles, known as the Gatlinburg Spur, are complete and parallel the West Fork of the Little Pigeon River between Gatlinburg and Caney Creek.

The program will continue the extension of the parkway by the construction of a 7-mile section from Highway 73 easterly to Carr Creek. The new work is adjacent to the 17-mile unit in various stages of construction on Chilhowee Mountain between Highway 73 and Chilhowee, the western terminus of the parkway.

George Washington Memorial Parkway, $380,600 (Maryland, $253,600; Virginia, $127,000).—This parkway is authorized to extend from Mount Vernon to Great Falls on the Virginia side of the Potomac River and from Great Falls to Fort Washington on the Maryland side, a total length of about 49 miles, not including the distance through Alexandria, Va., and the District of Columbia.

In Maryland two pedestrian structures will provide uninterrupted vehicular traffic on the parkway and permit safe pedestrian access across the motor road to the C. & O. Canal and areas riverward of the parkway. In Virginia the program provides funds for the construction of a new access to the Iwo Jima Memorial as it is proposed to close the Arlington Ridge Road where access is now provided.

Natchez Trace Parkway, $3,450,700 (Alabama, $387,500; Mississippi, $950,000; Tennessee, $2,113,200).—A survey to determine the route of this parkway was authorized by the act of May 21, 1934, and construction was started with funds allocated from Emergency Relief Appropriation Act of 1935. When completed the parkway will extend for a distance of about 450 miles from Nashville, Tenn., to Natchez, Miss.

In Alabama, the program proposes completion of a 7-mile section extending from the Tennessee River bridge to U.S. Highway 72 near Cherokee. Upon completion of this work, a usable unit of some 20 miles will be provided in northwest Alabama. Funds for the grading and structures were provided in the 1964–65 fiscal year programs.

In southwest Mississippi, the program proposes the completion of a 14-mile unit running southwesterly from Interstate 20 (U.S. Highway 80) at Clinton to the Oakley-Edwards Road. Funds for the grading and structures on 10 miles of this unit were provided in the 1964–65 fiscal year programs. Upon completion of this unit a usable unit of some 50 miles will be provided for the motorist between U.S. Highway 61 near Port Gibson and Interstate 20 at Clinton.

In Tennessee the program proposes continuing parkway construction in Lewis County on a section extending north 7 miles from Tennessee Highway 99 and the Big Swan Creek, to Keg Spring Road near the Hickman County line. This new work is adjacent to a 5-mile unit on which construction is almost completed between Meriwether Lewis National Monument and Highway 99. Upon completion of these two sections, some 57 miles of continuous parkway will be provided in southern Tennessee.

Rock Creek and Potomac Parkway, $458,000 (District of Columbia.)—The Rock Creek and Potomac Parkway was authorized by the act of March 4, 1913 (37 Stat. 885), to be under the jurisdiction of the Corps of Engineers, U.S. Army, as a part of the park system of the District of Columbia. Jurisdiction of the parkway was placed under the Director, Public Buildings and Public Parks, by the act of February 26, 1925 (43 Stat. 983), and consolidated into the National Park Service by Executive Order No. 6166 issued pursuant to the act of March 3, 1933 (47 Stat. 1517).

The 1966 program provides for the final paving, fencing, signs, and miscellaneous work of the Zoo bypass road now under construction in the vicinity of the Zoological Park. When completed, the two-lane roadway will provide the motorist with a continuous 24-hour scenic park road in Rock Creek Park, and the separation of the through north-south traffic from the secondary roads within the Zoo park area.

NATIONAL PARK SERVICE PROJECTS

Miscellaneous roads and trails, buildings, utilities, etc., $1 million.—This program provides for some 49 minor projects which include campground and picnic area roads, trails, parking areas, campground and picnic grounds development, comfort stations, utility systems, and other visitor facilities required to make the parkways usable recreation units.

Included in the foregoing are funds for completing the Look Rock campground and picnic development on Chilhowee Mountain on the Foothills Parkway in Tennessee; a new campground and picnic ground development at Mount Pisgah, and expansion of visitor facilities at Craggy Gardens along the Blue Ridge Parkway in North Carolina; and completion of the roads, trails, and parking areas and other visitor facilities at the Rocky Springs development on the Natchez Trace Parkway in southwest Mississippi.

Advance planning ($200,000).—This amount provides for planning work, including master planning that must be accomplished prior to project funding

The construction status of the parkways as of January 1, 1965, was as follows:

Parkways

Parkway and State	Status of construction mileages as of Jan. 1, 1965				1966 and later
	Total	Completed	Started	Programed[1]	
Baltimore-Washington:					
District of Columbia	0.31	0.31			
Maryland	19.19	19.19			
Blue Ridge:					
North Carolina	252.32	239.96	0.78	5.98	5.60
Virginia	216.68	201.10	15.58		
Colonial, Va	23.24	23.24			
Foothills, Tenn	68.00		21.50		46.50
Foothills Spur, Tenn	4.30	[2] 4.30			
Gatlinburg Bypass, Tenn	4.02		1.92	2.10	
George Washington Memorial Parkway:					
Maryland	17.60		6.50		11.10
Virginia	30.70	22.61			8.09
Natchez Trace:					
Alabama	32.53	14.03		7.00	11.50
Mississippi	316.34	185.50	26.78	16.15	87.91
Tennessee	100.90	45.22	4.60	.40	50.68
Palisades, D.C	3.03		.24	.76	2.03
Rock Creek and Potomac, D.C	4.43	3.43	1.00		
Suitland, D.C	3.00	[2] 3.00			
Maryland	6.00	[2] 1.90			
		[3] 4.10	[3] (4.10)		
Totals	1,102.59	767.89	78.90	32.39	223.41

[1] Projects programed but not started.
[2] 4 lanes.
[3] 2 lanes.

2. Roads and Trails, $25 Million

The estimate provides $25 million to meet expenditure requirements estimated to accrue through the 1966 fiscal year for liquidation of obligations incurred and to be incurred under the contract authorization.

The roads and trails construction program, in the amount of $24,274,000, is $1,091,700 more than the $23,182,300 approved for the 1965 fiscal year.

An analysis of the 1965 program follows:

Program level authorized by Department of the Interior and Related Agencies Appropriation Act, 1965	$22,082,300
Release of budget reserve:	
Lake Mead NRA (low water emergency)	500,000
Arlington Memorial Bridge, planning and other emergency costs	181,000
Emergency reconstruction of roads, trails, and bridges, various areas	419,000
Subtotal	1,100,000
Total approved program, 1965 fiscal year	23,182,300

The 1966 program is broken down into the following broad categories:

BPR road projects:	
Reconstruction	$1,947,000
Paving	4,010,000
New work	7,382,000
Subtotal	13,339,000
NPS roads and trails projects	10,435,000
Advance planning	500,000
Total	24,274,000

Many of the existing park roads are antiquated and the standards do not come up to present day requirements. Many of them have been in use longer than the normal life expectancy. Road bases and surfaces have deteriorated and some structures are outdated. In some instances, relocation is the only means of meeting minimum traffic requirements and of eliminating steep, narrow, and winding sections of road which are unsafe for present day vehicular traffic. The estimates provide $13,339,000 for work on roads to be accomplished through the facilities of the Bureau of Public Roads. The remainder of the program, to be carried out through facilities of the National Park Service, provides for numerous minor roads and trails projects; parking areas, campground roads, drainage structures, etc.; and for advance planning, reconnaissance surveys, topographic surveys, etc. Provision must also be made for turnouts, parking spaces, and overlooks for the safety and enjoyment of motorists.

Although the Service holds construction of new roads to a minimum, some are necessary to disperse the concentrated public use and to alleviate the resulting abuse of some areas of the National Park System. It is the Service policy to provide sufficient roads to make a number of sites and objects available to the visitor, and to supplement the roads with trails to accommodate those people who wish a closer look at park features. The roads and trials also serve as accesses for protection and management purposes.

The 1966 program includes $3,460,000 (or about 14 percent of the total) for roads and trials construction in 19 park areas which have been activated (or will be activated in the budget year) since the beginning of the Mission 66 program.

There follows a listing of projects estimated to cost in excess of $100,000:

Project and location	*Amount*
NORTHEAST REGION	
Acadia National Park, Maine: Headquarters area parking and access from Route 3	$106,900
Cape Cod National Seashore, Mass.:	
Reconstruct roads, Eastham	100,000
Relocation of approach roads, Herring Cove	118,800
Fire Island National Seashore, N.Y.: Parking areas, bicycle and foot trials	200,000
SOUTHEAST REGION	
Chickamauga and Chattanooga National Military Park, Ga.: Relocation and reconstruction, U.S. Highway 27	370,700
Great Smoky Mountains National Park, N.C. and Tenn.:	
North Carolina: Bryson-Monteith branch road, 9A3 section from terminus of project 9A2 to tunnel, including Noland Creek Bridge	1,162,000
Tennessee: Construct bridge in vicinity of the Sinks, approach road and parking area	195,000
Mammoth Cave National Park, Ky.: Parking area, drives and walks for new Mammoth Cave Hotel	238,400
Petersburg National Battlefield, Va.: Attack Road to Battery 5, including overpass Virginia 36, visitor center entrance road and parking area	381,000
Vicksburg National Military Park, Miss.:	
Reconstruct to standard and surface South Union Avenue and Fort Garrott loop (portion)	151,000
Highway 80, and reconstruct Baldwin Ferry Road (NPS portion) and relocate arch	486,000
MIDWEST REGION	
Bighorn Canyon Recreation Area, Wyo.: Access road and parking, Horseshoe Bend	300,000
Dinosaur National Monument, Colo.: Route 11, U.S. 40 to Deerlodge Park	936,000
Glacier National Park, Mont.:	
Reconstruct parking area, Many Glacier Hotel	100,400
Camas Creek cutoff, Route 8A–6	344,000
Jewel Cave National Monument, S. Dak.: Access tunnel	133,200
Wind Cave National Park, S. Dak.: Reconstruct north-south road, Route 1A, and headquarters parking area and walks, and relocate junction of Routes 1 and 2	1,105,000
Yellowstone National Park:	
Montana: Reconstruct Route 2, North or Gardiner entrance	493,000
Wyoming: Grand Loop Road, Route 1C, Madison Junction to Firehole Canyon, and west entrance road, Route 3	501,000
Wyoming: Canyon, reconstruct Uncle Tom's trail	147,000
SOUTHWEST REGION	
Big Bend National Park, Tex.: Route 5 from Route 3 to Castolon and interpretive spur roads and trails	270,500
Canyon de Chelly National Monument, Ariz.:	
Bridge over Canyon de Chelly wash	240,000
South rim drive and overlooks	316,500
Canyonlands National Park, Utah: Construct and improve portions of access roads, Dugout Ranch to Squaw Flat; from north boundary to Grandview Point and Upheaval Dome	1,025,000
Lake Mead National Recreation Area, Ariz.: Access road from Route 3–D to Sandy Point, Route A, parking area, and launching ramp	950,000
Mesa Verde National Park, Colo.: Wetherill Mesa Road, Navajo Hill to Wetherill Mesa, including loop and parking areas at Rock Springs	947,000

SOUTHWEST REGION—continued

Project and location	*Amount*
Natural Bridges National Monument, Utah: Scenic loop road to Three Bridges and return	$392,000
Zion National Park, Utah:	
Kolob Canyon road from U.S. 91 to Lee's Pass and parking loop	744,000
Circulatory roads and spurs, Watchman Campground	219,400
Tuzigoot National Monument, Ariz.: Approach roads and bridge	493,000

WESTERN REGION

Death Valley National Monument, Calif.:	
Reconstruct Route 1, California 190 to Badwater	531,200
Resurface and improve Route 5, Grapevine to Ubehebe Junction	110,900
Lava Beds National Monument, Calif.:	
Reconstruct Indian Well to southeast boundary	212,500
Reconstruct southeast entrance road	105,300
Mount McKinleyNational Park, Alaska:	
Reconstruct Route 1, section C, mile 26 to Teklanika Ruins	603,000
Reconstruct Lower Igloo Creek Bridge	154,000
Mount Rainier National Park, Wash.:	
Recondition and pave Nisqually entrance road, Route 1A, B	180,000
Surface Stevens Canyon road	648,000
Paradise parking area, barriers and walks, day-use building	450,000

NATIONAL CAPITAL REGION

East Potomac Park, D.C.: Reconstruct Ohio Drive, perimeter of East Potomac Park, including lighting	415,000
Jones Point Park, Va.: Circulatory roads and parking	150,000
Rock Creek Park, D.C.: Piney Branch Parkway	125,000
The Mall, D.C.: Resurfacing Mall roads	244,800
Washington Monument, D.C.: Monument roads and walks, including lighting	370,000

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$33,454,645	$35,582,300	$33,274,000	−$2,308,300
Unobligated balance brought forward:				
Appropriation		−12,900		+12,900
Contract authorization	−45,575,044	−53,107,499	−51,538,099	+1,569,400
Unobligated balance carried forward:				
Appropriation	12,900			
Contract authorization	53,107,499	51,538,099	52,264,099	+726,000
Unfunded balance, start of year	70,602,500	82,602,500	87,602,500	+5,000,000
Unfunded balance, end of year	−82,602,500	−87,602,500	−87,602,500	
Appropriation to liquidate contract authorization	29,000,000	29,000,000	34,000,000	+5,000,000
Obligations by objects:				
11 Personnel compensation	5,460,498	5,741,000	5,814,000	+73,000
12 Personnel benefits	377,308	397,000	401,000	+4,000
21 Travel and transportation of persons	413,184	500,000	515,000	+15,000
22 Transportation of things	74,591	79,000	79,000	
23 Rent, communications, and utilities	132,624	136,000	141,000	+5,000
24 Printing and reproduction	30,157	30,000	30,000	
25 Other services	548,882	567,000	537,000	−30,000
Services of other agencies	903,000	903,000	903,000	
26 Supplies and materials	425,938	444,000	412,000	−32,000
31 Equipment	149,853	157,000	145,000	−12,000
32 Lands and structures	25,017,610	26,615,400	24,297,000	−2,318,400
41 Grants, subsidies, and contributions		12,900		−12,900
Subtotal	33,533,645	35,582,300	33,274,000	−2,308,300
96 Portion of the foregoing obligations originally charged to object 32	−79,000			
Total obligations	33,454,645	35,582,300	33,274,000	−2,308,300

ROAD PROGRAM, 1966

Chairman HAYDEN. Would you care to comment for the committee on your road program plans for the coming year?

Mr. HARTZOG. Thank you very much, Mr. Chairman.

We are planning major work involving $849,200 on the Blue Ridge Parkway in Virginia and North Carolina; $388,000 on the Colonial Parkway in Virginia; $2,273,500 on the Foothills Parkway in Tennessee; $380,600 on the George Washington Memorial Parkway in Maryland and Virginia; $3,450,700 on the Natchez Trace Parkway in the States of Alabama, Mississippi, and Tennessee; and $458,000 on the zoo bypass project which is a part of the Rock Creek and Potomac Parkway here in the District of Columbia.

In addition to these larger projects, $1 million is included for 24 smaller projects on 6 of the parkways. We are pleased to report that very good progress has been made on the Blue Ridge Parkway during the past several years, in that the main line road will have been fully financed with funds provided in this budget, and when these projects are completed, the full parkway road will be complete except for the 5½-mile segment near Grandfather Mountain in North Carolina.

We have not been able to make the same progress, unfortunately, on the Natchez Trace Parkway, primarily because the States have not acquired the rights-of-way and turned it over as rapidly as we originally planned. We are hopeful that this rate of progress can be improved. As Mr. Jett has told you, the zoo bypass is projected for completion in October of 1966.

Our park roads and trails program of $24,274,000 is an increase of $1,091,700 over the $23,182,300 approved for 1965. It includes 24 large projects in 16 parks and about 150 smaller projects in 92 different park areas.

Some of the larger projects are for continuing work on the Bryson City-Monteith Branch Road in the North Carolina portion of Great Smoky Mountains National Park involving $1,162,000; the New Canyonlands National Park is scheduled for $1,025,000 for starting road work there; $950,000 is included for a new access road leading from the old Pierce Ferry Road to the vicinity of Sandy Point in the Arizona portion of Lake Mead National Recreation Area; $947,000 is for the second stage of constructing the Mesa Verde National Park road leading from Navajo Hill to Wetherill Mesa; the $744,000 included for work on the Kolob Canyon Road in Zion National Park, Utah, will complete the grading and structures, and only base and surfacing will be required for completion; two projects totaling $828,000 will see completion of work on the Nisqually Entrance Road and the Stevens Canyon Road, both in Mount Rainier National Park in Washington; $845,000 is for grading and structures on the first portion of the entrance road for the new Point Reyes National Seashore in California; $754,000 will complete the Big Oak Flat Road in Yosemite National Park, Calif.; $936,000 is for starting construction of the road from U.S. 40 to the Deer Lodge Park section of Dinosaur National Monument in Colorado; $1,105,000 is for reconstructing the North-South Road in Wind Cave National Park, S. Dak.; and $501,000 will see completion of portions of the Grand Loop Road in Yellowstone National Park, Wyo. All in all we think very good progress is being

made on road construction in the parks, not only in the older existing areas but with respect to the new areas also.

Here again, we have brought about an increase in our rate of obligations. For example, our rate of obligations in December 31, 1964 represented an improvement of 15 percent over the same period of last year.

Extension of Blue Ridge Parkway Into Georgia

Chairman Hayden. Some years ago funds were provided to study the extension of the Blue Ridge Parkway into Georgia. This study has been completed and now I presume that the actual construction awaits authorization. Have you been called upon to submit a report on a construction authorization?

Mr. Hartzog. Sir, we have been called upon to submit the report and it is now undergoing review in the executive department.

Status of Lake Mead Visitor Center Project

Chairman Hayden. Last year Congress provided you with $227,200 to build a visitor center at Lake Mead National Recreation Area, to be located near the Boulder Beach development, near Boulder City. What is the status of this project?

Mr. Hartzog. Sir, this project is slightly behind the schedule which we gave you last year because of location studies. However, the site has been determined upon, about 150 or 200 feet off the main road, and it is anticipated that it will be constructed and in operation this year.

Chairman Hayden. You say it is to be located off the main road. Will you have to build a road to get to it?

Mr. Hartzog. Yes, sir.

Chairman Hayden. Is the money for this road in this budget?

Mr. Hartzog. The road is not in the budget; no, sir.

Senator Mundt. How much will it cost? Can you build it with the money you now have?

Mr. Hartzog. We can build it with the money we now have if we are authorized to do so. I think the cost is about $119,000.

General Administrative Expenses

Chairman Hayden. For general administrative expenses the Park Service requests an appropriation of $2,516,000, $191,000 more than was appropriated in fiscal year 1965. The justification statement will be included in the record.

(The justification referred to follows:)

Highlight Statement

Broad purpose and long-range objective of program

This appropriation finances certain administrative functions in the Washington office and five regional offices incident to the fulfillment of the Service's many responsibilities. The administrative functions are general in nature and include the formulation of policy; prescribing of systems and procedures; legislative, regulation, information, program coordination, management analysis, financial management, personnel management, manpower development, internal audit, property management, and records management functions; and overall executive direction and coordination of the Service's programs and functions. The objective is to have the Washington and regional offices in a position to discharge

these administrative and executive direction functions in a manner that will facilitate fulfillment of the Service's multiple responsibilities to the maximum extent at the least possible cost.

ACCOMPLISHMENTS DURING THE PAST YEAR

The accomplishments under the Service's various programs during the past year, as discussed under the other appropriation headings, can be credited largely to the administrative functions financed under this appropriation. None of the programs could be carried forward without the administrative functions. Some specific accomplishments are:

1. In a continued effort to reduce costs and improve the financial management functions, the field finance offices at Mount Rainier and Olympic National Parks, Wash., were closed and the accounting, payrolling, and financial reporting responsibilities of the two parks were transferred to the western regional office in San Francisco, Calif.
2. A study was initiated to determine the type of ADP equipment that would be required to consolidate in the regional offices all the accounting, payrolling, and financial reporting functions, with the objective of closing the remaining 14 park finance offices during the 1965 and 1966 fiscal years.
3. All procurement offices of the Service were converted to FEDSTRIP (automated ordering from GSA).
4. The Service cooperated with the General Services Administration in numerous motorpool studies. The results of the studies reveal that several of the park areas have or will transfer their automotive equipment for operation under the GSA motor pools arrangement.
5. All personnel and manpower development activities at the Washington office level were consolidated in a single office for better coordination, programing, and economy.
6. Greater emphasis was placed on training to improve employee job performance.
7. An interview program was established to better screen applicants for entrance-level professional public contact employees.
8. Increased emphasis was given to the management appraisal program as a principal tool for increasing efficiency and economy and assuring effective manpower utilization.

OBJECTIVES AND PROGRAM FOR CURRENT AND BUDGET YEARS

The objectives for the current and budget years, as well as the long-range objectives, are to continue to discharge the administrative and executive direction functions in the most effective, efficient, and economical manner, and to facilitate the prosecution of all the Service's diversified programs to the maximum extent possible.

The budget includes an increase to provide for four additional positions and general expense funds in the Washington office and additional general expense funds in the regional offices that are essential to meet the increased executive direction, top management, and administrative workload, and to provide for intensification of management analysis and statistical functions. The administrative workload in the Washington and regional offices has increased constantly since the commencement of Mission 66.

GENERAL ADMINISTRATIVE EXPENSES

Appropriation, 1964	$2,136,750
Appropriation, 1965	2,325,000
Pay cost supplemental	97,000
Total appropriation, 1965	2,422,000

SUMMARY OF INCREASES, 1966

To strengthen management analysis and statistical functions in the Washington office	43,000
To provide additional general expense funds for various organizational units in the Washington office	21,000
To provide additional general expense funds for the regional offices	30,000
Net increase, 1966	94,000
Budget estimate, 1966	2,516,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
1. Departmental expenses	$1,303,237	$1,410,000	$58,000		$1,468,000
2. Regional office expenses	821,291	915,000	39,000		954,000
Unobligated balance lapsing	12,222				
Total	2,136,750	2,325,000	97,000		2,422,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase compared with 1965
1. Departmental expenses	$1,303,237	$1,468,000	$1,532,000	$64,000
2. Regional office expenses	821,291	954,000	984,000	30,000
Unobligated balance lapsing	12,222			
Total	2,136,750	2,422,000	2,516,000	94,000

1. Departmental Expenses

Analysis by subactivities

Subactivity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase
(a) Personnel compensation and benefits	$1,093,386	$1,258,000	$1,292,000	$34,000
(b) General expenses	143,929	160,000	190,000	30,000
(c) Administrative printing	65,922	50,000	50,000	
Total	1,303,237	1,468,000	1,532,000	64,000

1. Departmental expenses

The estimate of $1,532,000 is an increase of $64,000 over 1965. The amount shown as available for 1965 includes $58,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

Executive direction and certain administrative functions of the Washington office are financed under this activity. The functions are general in nature and include formulation of policy; prescribing of systems and procedures; legislative, regulations, information, management analysis, financial management, personnel management, manpower development, internal audit, property management, and records management functions; and the overall executive direction and coordination of the various programs of this Service. The objective is to have the Washington office in a position to discharge these administrative functions

in a manner that will facilitate fulfillment of the multiple responsibilities of the Service to the maximum extent at the least possible cost.

Since the commencement of Mission 66, there has been a constant increase in the administrative workload of the Washington office. This is evidenced by the increase in the Service's new obligational authority from $52,899,374 in 1956, the last year before the beginning of Mission 66, to $132,741,600 in 1965. New obligational authority has increased over 150 percent during the Mission 66 period while the general administrative expenses appropriation has increased only 94 percent. A table setting forth these comparisons follows:

Fiscal year	New obligational authority	Appropriated for general administrative expenses	Percentage of total
1956	$52,899,374	$1,250,000	0.0236
1957	70,454,752	1,250,000	.0177
1958	77,162,363	1,390,650	.0180
1959	84,072,779	1,429,300	.0170
1960	85,551,136	1,475,000	.0172
1961	93,602,490	1,581,000	.0169
1962	114,376,456	1,581,000	.0138
1963	132,609,711	2,055,200	.0155
1964	125,226,961	2,136,750	.0171
1965	[1] 132,741,600	[1] 2,422,000	.0184

[1] Includes anticipated supplementals for pay increase costs.

Need for increase.—Increased staffing and supporting general expense funds for the Washington Office are requested as follows:

Division of Management Analysis, $43,000:
- System analysis, GS–14.
- Economist, GS–13.
- Statistical clerk, GS–5.
- Clerk-stenographer, GS–5.

General expense funds (various organizational units), $21,000.

Division of Management Analysis, $43,000

Systems analyst and clerk-stenographer.—The systems, procedures, and methods employed by the Service in its administrative management and program execution were, in most instances, developed and implemented without regard to capabilities of currently available automatic data processing equipment. The Service is, therefore, in urgent need of a full systems study to determine the adequacy and appropriateness of its present systems, procedures, and methods in the light of the strides made in recent years in the ADP equipment field; to develop new systems, procedures, and methods where present ones prove to be inadequate or not fully appropriate; to determine which operations would be facilitated through use of ADP equipment; and to bring about the use of such equipment in cases where it is determined to be in the interest of the Service to do so.

To proceed with such a study and to follow through on actions determined to be necessary, the Service is in need of a trained systems analyst, knowledgeable with respect to the workings and capabilities of ADP equipment.

A full system study has been planned for some time but has not been undertaken as yet, due to inability to recruit qualified employees within the organization to comprise a committee. After the study is completed and any changes determined to be needed immediately have been effected, there will be a full-time, continuous need for the services of a qualified systems analyst to update the system, procedures, and methods as required to insure the most efficient and economical operations. It is respectfully requested that provision for a systems analyst, GS–14, position and a clerk-stenographer, GS–5, position be made in the 1966 fiscal year appropriation.

Economist and statistical clerk.—The 1965 fiscal year budget justifications explained the functions of the Branch of Statistics Analysis in the Division of Management Analysis and requested an increase in the appropriation to provide for four additional positions—an economist, a statistician, a clerk-stenographer and a statistical clerk. The 1965 appropriation provided funds for the statistician and clerk-stenographer. The need for an economist and a statistical clerk position has increased since the 1965 budget request was considered.

As stated in the 1965 justifications, the Branch of Statistics and Analysis is the Service's sole vehicle for conducting rigorous quantitative analyses of the patterns of visitor use and visitor services in the 218 areas administered. As such, it is the primary source of sifted, analyzed and interpreted statistics for the guidance of development programs and current management of the park. Some indication of the dimensions of the need for such guidance is seen in the 102.5 million public visits the parks experienced in 1964—a 58 percent increase over the 65 million expected only 6 years earlier.

This organizational unit is responsible for exercising close technical controls over the kinds and quality of data generated regularly in the parks, for designating and executing special statistical investigations to meet problems not covered by data produced by standard statistical series, and for supplying appropriate officials of the Service, other Federal agencies, and the public with the kinds and amounts of statistical information requisite to their needs. Of particularly critical importance, the Branch is charged with the recurrent production of anticipatory data—information which alerts responsible officials of the Service of the eminence, dimensions, and character of problems foreshadowing the need for action or change in predetermined line of action.

The past few years have witnessed a rapidly augmented volume of requests and demands for the technical services of the Branch. These have been responsive to needs for consultative services (both inside and outside the National Park Service), for the designing of special studies in the parks, and for processing and interpreting aggregations of data, sometimes generated under the direction of the Branch, sometimes not. The consequence is that demands vastly exceed the resources of the staff to meet them. There are large accumulations of data to be analyzed, investigations to be provided with technical designs, and basic management problems to be studied for reduction to statistical attack. To pick up the backlog and to meet the ever-increasing flow of new demands, the request for an economist position and a statistical clerk position is renewed in this estimate.

An economist (statistician, mathematician, or engineer), GS–13, versed in methodology, is needed to apply and contrive modern economical techniques to a wide variety of Service management problems (entrance station cueing, internal information flow, comparative park workload, etc.). Many of these problems can be attacked only cumbersomely by traditional methods—others cannot be tackled at all. A statistical clerk, GS–5, will supply the necessary clerical support for the economist position.

General expense funds (various organizational units), $21,000

Periodic within-grade promotions; increases in per diem and mileage rates; increases in costs of supplies, material and equipment; and position reallocations brought about by increased responsibilities incident to the expanded programs, have progressively reduced from year to year the amount available under this appropriation for general expenses. The situation forces the charging of some travel and other costs to program funds that properly are for financing as general administrative expenses. With the expanded operations, personnel turnover has increased substantially with the result that the number of Washington office vacancies filled by transfer of field employees has risen thereby increasing travel and transportation costs. The small increase of $21,000 requested is essential to provide the minimum of general expense funds required by the Washington office.

2. Regional Office Expenses

Analysis by subactivities

Subactivity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase
(a) Northeast office	$162,928	$188,600	$194,600	$6,000
(b) Southeast office	167,837	192,500	198,500	6,000
(c) Midwest office	149,973	190,200	196,200	6,000
(d) Southwest office	162,402	187,300	193,300	6,000
(e) Western office	178,151	195,400	201,400	6,000
Total	821,291	954,000	984,000	30,000

2. Regional office expenses

The estimate of $984,000 is an increase of $30,000 over 1965. The amount shown as available for 1965 includes $39,000 for increased pay costs which could not be absorbed in fiscal 1965 and which is proposed for inclusion in a 1965 supplemental estimate.

Executive direction, public affairs, management analysis, and program coordination functions in the five regional offices are financed under this activity.

Need for increase.—The program increase requested is to provide additional amounts for general expenses in each of the five regional offices. The need for the increase is discussed more specifically as follows:

General expense funds, $30,000

What was said under activity 1 concerning the need for an increase in general expenses funds in the Washington office is equally true with respect to the regional offices. Periodic within-grade promotions; increases in per diem and mileage rates; increases in costs of supplies, materials, and equipment; and position reallocations brought about by increased responsibilities incident to the expanded programs have progressively reduced from year to year the amount available under this appropriation for general expenses. Regional office responsibilities cannot be adequately discharged unless it is possible for members of the regional office staffs whose salaries are financed under this appropriation to make frequent visits to the park areas within the region. Also as new areas are added to the system and as the workload increases, additional amounts are required for supplies, materials, and equipment. This estimate requests an increase of $6,000 for each of the five regional offices to bring about the availability of general expense funds commensurate with the amounts provided for salaries and related expenses.

Plan of work.—The program contemplates provision of executive direction and the performance of certain administrative functions in the regional offices in support of all Service programs.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase
Program and financing:				
Total obligations	$2,124,528	$2,422,000	$2,516,000	+$94,000
Unobligated balance	+12,222			
Appropriation	2,136,750	2,325,000	2,516,000	+191,000
Proposed supplemental due to civilian pay increases		97,000		−97,000
Obligations by objects:				
11 Personnel compensation	1,698,662	1,918,000	1,962,000	+44,000
12 Personnel benefits	118,697	143,000	146,000	+3,000
21 Travel and transportation of persons	100,764	115,000	130,000	+15,000
22 Transportation of things	8,077	9,000	10,000	+1,000
23 Rent, communications, and utilities	46,545	50,000	58,000	+8,000
24 Printing and reproduction	67,717	70,000	70,000	
25 Other services	41,379	64,000	83,000	+19,000
26 Supplies and materials	11,751	15,000	17,000	+2,000
31 Equipment	30,936	38,000	40,000	+2,000
Total obligations	2,124,528	2,422,000	2,516,000	+94,000

ADDITIONAL STAFFING AND GENERAL EXPENSE FUNDS

Chairman HAYDEN. Would you please explain to the committee your need for this sum?

Mr. HARTZOG. Sir, I will ask Mr. Montgomery to comment on this increase, with your permission.

Mr. MONTGOMERY. Mr. Chairman, the increase provides for the Washington office $43,000 for additional staffing and $21,000 for additional general administrative expenses. The $43,000 would provide for four additional positions, a systems analyst, an economist, a statistical clerk, and a clerk-stenographer.

ADDITIONAL WASHINGTON OFFICE POSITIONS

All four of these positions are needed in the interest of improved management, economy, and efficiency of operations. The systems analyst is needed to make full studies of our entire systems throughout the Service, our financial system, our personnel system, our procurement and property management system, maintenance, our development systems and procedures—studies of those procedures in the light of what can be done with ADP equipment.

We are, as Mr. Hartzog has explained, installing small ADP units in our regional offices to handle the payrolling, accounting, and financial reporting operations. We want to review our entire system and determine which of our operations could be facilitated through use of ADP equipment.

We don't have anyone in the Service qualified to do this now. We do need this additional position and a clerk-stenographer to head up and carry out the study. The statistical clerk and economist are needed also in our management analysis work. That accounts for the $43,000 item.

NEED FOR MORE GENERAL EXPENSE FUNDS

The $21,000 item for general expenses in the Washington office and the $30,000 in the regional offices, would provide additional money for supplies, materials, equipment, and travel expenses, in order to carry out the functions.

The gradual increase in personal services costs over the years has reduced the amount of money available for general expenses. We need these amounts to permit us to carry on the work.

PROGRAM FUNDS USED FOR ADMINISTRATIVE SERVICES

Chairman HAYDEN. What amount of program funds in addition to the $2,516,000 are to be used for general administrative expenses?

Mr. HARTZOG. Sir, we make a charge to the other program funds for facilitating services to cover the administrative services incident to these programs. It is estimated that this amounts to about $3.5 million.

ADMINISTRATIVE PROVISIONS

Chairman HAYDEN. There will be placed in the record your explanation of a need for 129 passenger motor vehicles, 94 of which are for replacement.

(The justification referred to follows:)

ADMINISTRATIVE PROVISIONS

Authorization is requested for the purchase of 129 passenger motor vehicles of which 94 are for replacement only, including not to exceed 61 for police-type use. the cost of which may exceed by $300 each the general purchase price limitation for the current fiscal year.

The vehicles to be replaced will be within the age or mileage standards for replacement as prescribed by the General Services Administration. Many of them are used for patrol purposes and law-enforcement functions by employees such as park rangers and the U.S. Park Police, and often at high speeds for the apprehension of speed and other violators. They must, therefore, be in good condition to insure safety of the operator and the public. Many of the vehicles operated by the Service are used in rugged mountainous and desert terrain and under trying weather and road conditions. The geographical location of

many areas, far from railheads or other populated centers where Government business is transacted, makes it mandatory to use this type of transportation.

Vehicles to be purchased:	
Number	129
Estimated gross cost	$218,550
Old vehicles to be exchanged:	
Number	94
Estimated allowance	$39,150
Net cost	$179,400

Expansion of the Service's activities under the Mission 66 program and the establishment of new park areas have brought about the need for additional passenger motor vehicles to serve protective, interpretive, and administrative functions of the areas. Two of the additional vehicles requested are for the U.S. Park Police force for which an increase of eight positions is provided in the estimate. Twenty-one vehicles are needed incident to the land acquisition program and the establishment and operation in the 1966 fiscal year of nine new park areas authorized in the 2d session of the 88th Congress and 2 new areas to be operated under cooperative agreements between the Service and the Bureau of Reclamation. The other 12 additional vehicles requested are required to more nearly meet the needs of the staffs in existing areas, of which 3 are for areas activated since the beginning of Mission 66, and 9 are for pre-Mission 66 areas.

The language will permit the Service to purchase special features of equipment for vehicles used for law enforcement or police-type activities exceeding in cost the maximum amount established for the purchase of any passenger motor vehicle. In the discharge of its responsibilities the Service will need to purchase 61 cars equipped as police cruisers in 1966. They are required for patrolling such areas as the George Washington Memorial, Baltimore-Washington, Suitland, and Blue Ridge Parkways, and roads in the larger parks. Special features of equipment for police-type vehicles include: Heavy-duty front seat and upholstery, heavy-duty police-type engine, safety belts, safety padded sun visor and dashboard, special safety tires and tubes, and heavy-duty chassis, springs, shock absorbers, and alternators.

PASSENGER MOTOR VEHICLES

Chairman HAYDEN. Where will the 35 new cars which you request be used?

Mr. HARTZOG. Sir, we have a statement showing the location of these which we shall be pleased to place in the record, with your permission.

(The information referred to follows:)

NEW PASSENGER MOTOR VEHICLES PROPOSED IN THE 1966 BUDGET

Region and area	Number of vehicles	
	Automobiles (other sedans)	Station wagons
Northeast region:		
Allegheny Portage Railroad and Johnstown Flood (new areas)	2	1
Cape Cod	1	
Fire Island (new area)	2	1
Minute Man	1	
Saint-Gaudens (new area)	1	
Subtotal	7	2
Southeast region:		
Cape Hatteras	3	
Colonial	1	
Cumberland Gap	1	
Natchez Trace	4	
Subtotal	9	
Midwest region:		
Bighorn Canyon (new area)	1	
Canyonlands (new area)	2	
Fort Larned (new area)	2	1
Ozark (new area)	4	
Subtotal	9	1
Southwest region:		
Curecanti (new area)	2	
Fort Bowie (new area)	1	
Padre Island	1	
Subtotal	4	
Western region: John Muir (new area)	1	
National Capital region	2	
Total	32	3

Chairman HAYDEN. Senator Mundt, do you have any questions?

ARCHEOLOGICAL INVESTIGATION AND SALVAGE PROGRAM

Senator MUNDT. On pages 7 and 8 of your justification you discuss archeological investigations in 41 project areas in 30 States. Are these investigations on schedule? Can you provide for the record a tabulation of the areas investigated?

Mr. HARTZOG. Sir, I think generally they are all on schedule. We shall be pleased to provide you with the tabulation of the 1965 and 1966 fiscal year programs. As a matter of fact, we have prepared this in support of the estimate and with your permission we will be pleased to put it in the record.

(The information referred to follows:)

Archeological Salvage and Investigations Projects

1965 FISCAL YEAR

Project	State	Status	Complete (fiscal year)	Type of work	Amount
Clairborne	Alabama	Under construction	1968	Excavation	$7,500
Holt L. & D	do	New start, 1965	1967	do	10,000
Jones Bluff	do				7,500
Millers Ferry	do	Under construction	1968	Excavation	11,500
Millwood	Arkansas	do	1967	do	15,000
DeGray	do	do	1967	do	8,900
Barge Canal	Florida	New start, 1965	1969	do	16,500
Carters	Georgia	Under construction	1968	do	7,000
Green River	Kentucky	New start, 1965	1967	do	4,000
Grenada	Mississippi				1,600
Okatibbee	do				3,500
New Hope	North Carolina	Authorized		Survey	2,000
Nickajack	Tennessee	Under construction		Excavation and survey.	10,000
East Lynn	West Virginia				4,500
NPS areas	Various				10,000
Southeast region, total					119,500
Trinidad	Colorado	New start, 1965	1968	Excavation	10,000
Red Rock	Iowa	Under construction	1967	do	8,000
Saylorville	do	do	1968	do	10,000
Cedar Point	Kansas	Authorized		Survey	5,900
Elk City	do	do		Excavation and survey.	5,000
Dinosaur National Monument.	Colorado-Utah				10,900
Pipestone National Monument.	Minnesota				5,350
NPS areas (other)	Various				5,000
Midwest region, total					60,150
Colorado River projects:					
Glen Canyon	Utah-Arizona	Under construction	1965	Excavation	25,000
Shiprock Irr	New Mexico	New start, 1965		do	75,000
Curecanti	Colorado	Under construction	1968	Survey and test.	15,000
Big Meadows	do	Authorized		Survey	2,000
Rock Creek	do	do		do	1,500
Stillwater	do	do		do	1,500
Dorchester	do	do		do	1,172
Savory-Pothook	do	New start, 1967	1969	do	1,500
Oklahoma salvage projects:					
Markham Ferry	Oklahoma	Under construction	1965	Excavation	41,724
Arizona salvage projects:					
Middle Gila				do	13,908
Cochiti	New Mexico	New start, 1965	1968	do	20,000
Galisteo	do	do	1968	do	18,000
Two Rivers	do	Under construction	1964	do	14,280
SCS projects	Utah				2,500
Navajo National Monument.	Arizona				2,500
Capitol Reef National Monument.	Utah				1,500
Padre Island National Seashore.	Texas				1,852
Texas projects	do				116,264
Southwest region, total					355,200
John Day	Washington-Oregon.	Under construction	1968	Excavation	25,000
Little Goose	Washington	do	1968	do	25,000
Lower Granite	do	New start, 1965	1968	Excavation and survey.	25,000
San Miguel Island	California				20,000
Mount McKinley National Park.	Alaska				10,000
Glacier Bay National Monument.	do				10,000
Western region, total					115,000
Shelbyville	Illinois	Under construction	1966	Excavation	3,530
Carlyle	do	do	1966	do	32,000
Rend Lake	do	New start, 1965	1969	Survey	2,000

ARCHEOLOGICAL SALVAGE AND INVESTIGATIONS PROJECTS—Continued

1965 FISCAL YEAR

Project	State	Status	Complete (fiscal year)	Type of work	Amount
Mississinewa	Indiana	Under construction	1967	Excavation	$4,500
Brookville	do	New start, 1966	1968	do	2,500
Eau Galle	Wisconsin	Under construction	1965	do	2,500
Kickapoo	do	New start, 1967	1970	do	3,000
New Cumberland	Ohio-Pennsylvania.	Under construction	1963	do	3,000
Cowanesque	Pennsylvania	New start, 1966	1968	do	9,000
Tocks Island	New Jersey	New start, 1968	1970	Survey	2,000
Davenport	New York	do	1970	do	2,000
Bloomington	Maryland	New start, 1967	1969	do	2,270
New England reservoirs				Excavation and survey.	8,000
Isle Royale	Michigan				2,500
Fort Necessity	Pennnsylvania				2,000
Morristown	New Jersey				2,000
Minute Man	Massachusetts				2,000
Acadia	Maine				1,150
Antietam	Maryland				2,500
Harpers Ferry	West Virginia				2,500
Saratoga	New York				2,500
St. Croix River	Maine				2,000
Salem Maritime	Massachusetts				2,000
Mound City Group	Ohio				2,000
Fort McHenry	Maryland				2,500
Northeast region, total					101,950
Accokeek area	Maryland				10,000
Upper Rock Creek	do				3,800
Regional office base map					1,700
Miscellaneous construction projects					3,700
National Capital region, total					19,200
Grand total					771,000

1966 FISCAL YEAR

Clairborne	Alabama	Under construction	1968	Excavation	$10,000
Jones Bluff	do	New start, 1965	1968	do	10,000
Holt	do	Under construction	1967	do	8,000
Millers Ferry	do	do	1968	do	10,000
Millwood	Arkansas	do	1967	do	8,000
DeGray	do	do	1969	do	8,000
Barge Canal	Florida	New start, 1965	1969	do	20,000
Green River	Kentucky	do	1967	do	6,000
Cave Run	do	do	1967	do	7,000
East Lynn	West Virginia	do	1968	do	7,000
Justice	do	New start, 1967	1969	Survey	5,000
Cheat	do			do	5,000
NPS park projects	Various				16,100
Southeast region, total					120,100
Saylorville	Iowa	Under construction	1968	Excavation	10,500
Cedar Point	Kansas	Authorized		Excavation and survey.	10,500
Upper Verdigris	do			Excavation	8,000
Meramec Basin	Missouri	Authorized		do	8,000
Pipestone	Minnesota			do	5,800
Theodore Roosevelt	North Dakota			do	6,500
Grand Teton	Wyoming			do	6,500
Other NPS areas	Various				10,500
Midwest region, total					66,300
Amistad	Texas	Under construction		Excavation	50,000
Toledo Bend	do	do		do	40,000
Livingstone	do	do		do	10,000
North San Gabriel	do				9,000
South San Gabriel	do				9,000
Sanford	do	Under construction	1967	Excavation	12,500
Cooper	do	New start, 1969		do	12,000
Short Mountain	Oklahoma				10,000
Webbers Falls	do				8,000
Verdigris L. & D.	do				7,000

ARCHEOLOGICAL SALVAGE AND INVESTIGATIONS PROJECTS—Continued

1966 FISCAL YEAR

Project	State	Status	Complete (fiscal year)	Type of work	Amount
Arkansas River Bank	Oklahoma				$10,000
Kaw Reservoir	do				5,000
Waurika	do	New start, 1969		Excavation	10,000
Cochiti	New Mexico	Under construction	1968	do	45,000
Navajo	do	do		do	25,000
Dixie	Utah			Excavation and survey.	25,000
Canyonlands National Park	do			Survey	15,000
Big Bend National Park	Texas			do	5,000
Canyon de Chelly	Arizona			do	10,000
Lake Mead	do			do	3,500
Mesa Verde National Park	Colorado			Report	9,000
Other National Park Service areas.	Various			do	20,000
Southwest region, total.					350,000
John Day	Washington-Oregon.	Under construction	1968	Excavation	30,000
Little Goose	Washington	do	1968	do	20,000
Lower Granite	do	New start, 1965	1968	do	25,000
Libby	Montana			do	25,200
Death Valley	California	New start, 1966	1969	do	14,000
Western region, total					114,200
Carlyle	Illinois	Under construction	1966	Excavation	11,260
Rend Lake	do	New start, 1965	1969	do	5,100
Shelbyville	do	Under construction	1966	do	3,500
Oakley	do	New start, 1966	1969	do	3,500
Indiana reservoirs (8)	Indiana			Excavation and survey.	3,500
Eau Galle and Kickapoo	Wisconsin	Under construction	1966	Excavation	6,000
Scioto Basin	Ohio	New start, 1966	1970	Excavation and survey.	6,000
New Cumberland	Various			Excavation	6,000
Pennsylvania reservoirs (12)	Pennsylvania			Excavation and survey.	4,000
Tocks Island	do	New start, 1967	1969	Excavation	6,000
Do	New Jersey	do	1969	do	6,000
New York reservoirs	New York			Excavation and survey.	3,000
Bloomington	Maryland-West Virginia.	New start, 1967	1969	Excavation	2,800
Fort McHenry	Maryland			do	2,300
Mound City group	Ohio			do	2,000
Saratoga	New York			do	1,000
Fort Necessity	Pennsylvania			do	1,000
Harpers Ferry	West Virginia			do	1,000
Minute Man	Massachusetts			do	1,500
Morristown	New Jersey			do	1,500
Isle Royale	Michigan			do	1,000
Acadia	Maine			do	1,000
Salem Maritime	Massachusetts			do	1,000
St. Croix River	Maine			do	1,000
Lincoln Boyhood	Indiana			do	1,000
Fire Island	New York			do	1,500
Cape Cod	Massachusetts			do	1,500
Allegheny Portage Railroad	Pennsylvania			do	1,000
Proposed area	Various			Excavation and survey.	12,000
Northeast region, total					97,900
Accokeek area	Maryland			Excavation	16,424
Great Falls	Virginia			do	2,586
Prince William Forest	do			do	2,743
Base map	Region				747
National Capital region, total					22,500
Grand total					771,000

SITE OF BATTLE OF WOUNDED KNEE, S. DAK.

Senator MUNDT. Do you carry any place on your rolls anything on Wounded Knee out in South Dakota?

Mr. BAKER. No, sir.

Senator MUNDT. We have had a lot of correspondence.

Mr. BAKER. We have talked about it.

Senator MUNDT. There is a big argument about Indians wanting to call it Wounded Knee massacre and the military calling it Wounded Knee Battle Monument. It was the last great battle that took place.

I was wondering if, with any of these investigations and studies, you have come up with anything on this.

Mr. BAKER. Our historians have not encouraged us in giving national recognition to the battlefield site.

Senator MUNDT. I know they have not done that but I am kind of curious in my mind why they have not because it was an important event in the conclusion of the Indian Wars. Maybe you have a new group of historians and maybe they can take another look at it.

Mr. BAKER. I will see. Maybe they can.

PROGRAM OF SURVEYING AND MONUMENTING BOUNDARIES

Senator MUNDT. I am interested in your proposal on page 25 of the justification that begins at the $100,000 level on a program for surveying and monumenting park boundaries. What will be the estimated total cost of getting this done in the decade that you plan to devote to it?

Mr. HARTZOG. Sir, we estimate that over the next 10 years it will cost us about $2.5 million and we would hope eventually to attain a program level of about $250,000 a year.

RESTORATION OF BLACK-FOOTED FERRET

Senator MUNDT. On page 33 of your justification it indicates that you are intending to do some work on the restoration of rare, endangered, and vanishing wildlife species. In that you mention the black-footed ferret and your work at the Wind Cave National Park. Is this the work being done in conjunction with the South Dakota Cooperative Wildlife Center?

Mr. BAKER. Yes, sir; this work is being done with their cooperation.

Senator MUNDT. Do you have anybody here who can give a speech about the black-footed ferret?

Mr. BAKER. We don't have anybody here today, Senator, that can give us anything for the record at this time. But we would be happy to insert something in the record if you would like.

Senator MUNDT. Yes. I would like to know more about the animal.

Mr. BAKER. It lives mostly on the prairie dog. You will find the ferret mostly in the prairie areas.

Senator MUNDT. The rattlesnake, the horned owl, and prarie dog together?

Mr. BAKER. Mostly the prairie dog.

Senator MUNDT. The rattlesnakes live on the prairie dog, too?

Mr. BAKER. Yes, sir.

Senator MUNDT. Don't they kind of live together?

Mr. BAKER. The prairie dog and the rattlesnake. The rattlesnake comes in, the prairie dog leaves. If the ferret comes in——

Senator MUNDT. The rattlesnake leaves.

Mr. BAKER. The prairie dog will leave and maybe the rattlesnake, too.

Senator MUNDT. Will you write a little description of this rather unique piece of animal life and put it in the record?

Mr. BAKER. We will do that.

(The information referred to follows:)

BLACK-FOOTED FERRET

The black-footed ferret (*Mustela nigripes*) is one of the rarest of American mammals, and is a wild counterpart of the Old World ferrets, which are kept as pets for hunting rats and rabbits. Shaped like a weasel but larger, the black-footed ferret has a yellowish brown coat, black feet, a black mask like a raccoon, and is about 2 feet long. Never common, it lived primarily in the prairie dog "towns" of the Great Plains, from Montana to Texas, until the near-extermination of prairie dogs increasingly deprived it of food and shelter.

The Department of the Interior has been officially concerned over the status of the black-footed ferret since 1942 when it was included with other endangered and vanishing species in the Department's book, "Fading Trails," prepared under the leadership of the National Park Service. In a press release of July 6, 1964, the Department included the black-footed ferret in a new list of vanishing species; the "World Wildlife Fund" currently gives it a similar listing. The species has not been recorded at Badlands National Monument. Wind Cave National Park, Devil Tower National Monument, or Theodore Roosevelt National Memorial Park, which lie within its native range, for many years.

The National Park Service, recognizing its responsibility for restoring rare or vanishing species to areas under its jurisdiction, has just completed a 5-year search for ferrets in the northern Great Plains, in cooperation with the Fish and Wildlife Service, the Wildlife Management Institute (Washington, D.C.), Welder Wildlife Foundation (Sinton, Tex.), and several State fish and game departments. Not one live ferret was found until August 7, 1964, when a mammal control agent of the Fish and Wildlife Service discovered a family of ferrets in a prairie-dog "town" in south-central South Dakota. Immediately the South Dakota Department of Game, Fish and Parks, the Cooperative Wildlife Research Unit of South Dakota State University, the National Park Service, Fish and Wildlife Service, and Welder Wildlife Foundation cooperated in establishing a $5,000 study project, under Dr. Paul Springer, leader of the cooperative research unit.

This project will obtain vital information on the life history and survival requirements of this little-known species, together with recommendations for its protection, and reintroduction at the earliest feasible date to suitable permanent sanctuaries such as Badlands National Monument, Wind Cave National Park, and other public areas. The National Park Service contribution to this interagency study is $2,000.

GREAT FALLS PARK, VA.

Senator MUNDT. On page 40 of your justification you discuss Great Falls Park, Va. I haven't been there for a number of years but it was my understanding that was a State park. Can you give us a little background on the status of the park?

Mr. HARTZOG. May I have Mr. Jett comment on that.

Mr. JETT. Senator Mundt, this is a park unit of 790 acres which is managed at this time by the National Park Service. We have a 50-year lease on this spot, an arrangement with Potomac Electric Power Co. We took an option to buy. Authorizing legislation is pending before the Congress at this time to acquire this property through purchase and exchange of other land.

But, it is the largest park on the Virginia side of the Potomac in the Washington metropolitan area and it is managed by the National Park Service.

Senator MUNDT. Who gets that money?

Mr. JETT. A portion of this land, 17 acres, is owned by the Fairfax County Park Authority. I say 17 acres of the property adjacent to the falls of the Potomac on the Virginia side and completely surrounded by the 790 acres we have under lease from Pepco, are owned by the Fairfax County Park Authority. It was under county ownership before we got the lease on the 790 acres.

The county does collect a 50-cent admission fee and that money goes to the Fairfax County Park Authority. We are currently negotiating with the Fairfax County Park Authority for the acquisition or the consolidation of these properties. But at the present time this money does go to Fairfax County and, of course, it is their land.

Senator MUNDT. But, if we provide the administration and the police shouldn't we get a part of the 50-cent fee?

Mr. JETT. Sir, we are policing 790 acres which is under our management at this time. It is a large area and the request for these officers is for the purpose of policing the acreage which is our responsibility.

Senator MUNDT. Is all the development on the 17 acres owned by Fairfax County?

Mr. JETT. There is very little development, Senator, on it. They have a picnic shelter on it. The concession operation which is there is in the old farmhouse which is actually half on their lands and half on ours. It is interesting to note that the revenues from this property exceed at the present time the cost of the fee paid to Pepco for it.

But, we have the money in this year's budget, the current year's budget, to pave a parking lot on the area which is managed by us. We also have the money to build the first unit of a visitor contact station there which will be on the property which will be administered by us.

We are asking this year for $50,000 to expand that building in order to provide space for a concession operation which will make it possible to remove the old farmhouse which has been declared unsafe and unsanitary by the public health officer and our safety officer.

BADLANDS, MOUNT RUSHMORE, AND WIND CAVE PROGRAMS

Senator MUNDT. I would like to have you send to my office, Mr. Director, a résumé of the work to be done in the Badlands in 1966 as outlined on page 49 with the same request on page 55 on Mount Rushmore and on page 57 for Wind Cave.

Mr. HARTZOG. We will be delighted to do that.

PROGRAM FOR PRESERVATION OF REDWOODS

Senator MUNDT. You discuss on page 63 tree preservation work indicating estimates for $107,000, the same as last year. You talk about Sequoia National Park and Kings Canyon National Park. This leads me to raise the same question I did last year and yesterday morning about whether there is anything underway besides what the Secretary has mentioned regarding the preservation of redwoods.

Mr. HARTZOG. Sir, the study is still underway. No decisions have been made. The preliminary professional report was issued, I believe,

in September of 1964. The western regional office has received somewhere in the vicinity of 2,500 comments, some of these signed by more than one person. We are still working with the State of California, the redwood industry, and the conservation organizations but no final report has yet been formulated.

STATUS OF JEWEL CAVE PROJECT

Senator MUNDT. Will the money that you ask for Jewel Cave push this project forward as rapidly as you think it should be done?

Mr. HARTZOG. Yes, sir, Senator, it will. We have the problem there of adjusting the boundary. But this has already been agreed on between our Service and the U.S. Forest Service so that we are hoping to have this adjusted in time that the expenditures can be made.

PLAINS AND PRAIRIE GRASSLANDS STUDY

Senator MUNDT. It is my understanding that you are participating in a study now underway of plains and prairie grasslands suitable for possible inclusion in the national park system. I believe the original idea to put it down in Kansas blew up. This program has raised a lot of comment out in South Dakota and I would appreciate a rundown on where we stand and what you might have in mind on that area, and add to that whether you are working with any of the Indian tribes or the Indian Bureau because some of the Indians are interested in perhaps making a smaller grassland park and using their land for that purpose.

DISCREPANCY IN STATEMENT ON PARK VISITORS

Mr. HARTZOG. We will certainly be happy to prepare a statement on this and include it with the information on Badlands, Mount Rushmore, and Wind Cave.

DIFFERENCE IN VISITOR COUNT

Senator MUNDT. On page 8 of your justification your figures on park visitors do not seem to agree with your statement. For example, in 1964 your book says 102 million-odd, your statement shows 111 million. I wonder if that discrepancy is because you include the National Capital parks in your statement and they do not. Would that be the reason?

Mr. HARTZOG. That is correct, sir.

CONSERVATION BUMPER STICKERS

Senator MUNDT. Consideration is being given to a $7 fee for a bumper sticker which would permit the buyer to gain access to any national park in the country for a period of 1 year. Have you estimated what this will amount to in the course of the current year? This money I presume goes into the land and water conservation fund.

Mr. HARTZOG. The money will go into the land and water conservation fund, Senator. This program is managed by the Bureau of Outdoor Recreation and we will just be one of several agencies that will sell the sticker.

NUMBER OF AREAS IN NATIONAL PARK SYSTEM

Senator MUNDT. With the addition of the 11 new parks that you mentioned last year, how many national parks do we have in the country all together?

Mr. HARTZOG. Sir, in the briefing book which we have here for the committee, we have classified 235 units of the national park system. When we come to classifying the areas in the National Capital region, this involves lumping a great many of the historical plots of ground into one composite unit, so that 235 is our best figure of the manageable units. It is to be pointed out, however, for example here in the metropolitan area in the National Capital region there are over 750 individual pieces of ground that comprise the National Capital park system.

Senator MUNDT. Do you have any charts available showing the location of these existing parks by States?

Mr. HARTZOG. Yes, sir.

IDENTIFICATION OF PROPOSED NEW PARKS

Senator MUNDT. And a like chart showing the possibility of new parks by States?

Mr. HARTZOG. We do have that, sir. I don't have it with me this morning, but I will be delighted to provide it for the record or to give it to you, however you would prefer.

Senator MUNDT. Either way. I would like to see it.

NUMBER OF EMPLOYEES IN NATIONAL CAPITAL REGION

How many personnel do you have operating in your Capital program here in the city?

Mr. JETT. There are 1,300, Senator. Let me correct that.

Senator MUNDT. On an annual basis?

Mr. JETT. No, sir. That is permanent and temporary. We have a total personnel staff of 1,348 working in the National Capital region. This includes all of our operating staff, U.S. Park Police and the whole force engaged in the maintenance.

Senator MUNDT. That is an annual force.

Mr. JETT. Yes, sir. In addition to that we have 73 man-years of temporary employment. These are the seasonal people we take on in the summertime.

Senator MUNDT. That is more than 73 people.

Mr. JETT. Yes, sir; it would be because we would have them for about 6 months. It gives us a total man-year resource of 1,421.

SELECTION OF TEMPORARY EMPLOYEES

Senator MUNDT. How are your temporary people selected and what are their functions?

Mr. JETT. For the most part they are additional seasonal people who take care of and accommodate the increased visitation at the memorials in the summertime. They are selected under civil service registers and procedures for tour leaders, or guides, naturalists, or historians, or whatever category they may come within. In addition

to that we engage additional librarians, grounds keepers, and they also are taken from the civil service registers.

Senator MUNDT. Are they recruited, the guides and so forth, mainly from college students?

Mr. JETT. They are, yes, sir.

Senator MUNDT. That is all, Mr. Chairman.

SUBMISSION OF QUESTIONS BY AND ANSWERS TO SENATOR MCGEE

Chairman HAYDEN. I have here a series of questions which Senator McGee intended to ask. Because he is unable to be here, I will appreciate your supplying answers to them for the record.

Mr. HARTZOG. We will be pleased to do that, sir.

(The questions and answers referred to follow:)

ROADS IN YELLOWSTONE NATIONAL PARK

Question. As you know, in the past several years there has been considerable and increasing interest in obtaining year-round highway maintenance for roads in and through Yellowstone National Park. Travel through the park during the regular summer months has reached a point at which it is most difficult to accommodate the traveling public. Many people have expressed their views to me that year-round operation of the park would to some extent alleviate these crowded conditions during the summer months and would allow people to enjoy the park facilities under less crowded and less strained conditions. Also, as I am sure you are aware, considerable development is presently taking place in the Jackson Hole area adjacent to Yellowstone and Teton National Parks which will make this area one of the outstanding winter resort areas of the United States. Completion of some of these facilities now under construction will take place this year, and it is felt that their impact will be realized immediately. I know that several years ago the National Park Service conducted studies and estimated costs of maintenance operations of Yellowstone Park roads throughout the year and concluded at that time that it would not be feasible in view of anticipated costs and estimated traffic. In view of these factors which I have discussed today, however, I was wondering if it would now be in order for the Park Service to update these prior studies.

Answer. During the past 16 years we have had two factual engineering surveys of the problems surrounding winter use and travel within Yellowstone National Park. Both survey groups included professionally competent individuals having experience with the Bureau of Public Roads and State highway departments as well as National Park Service personnel. Their findings as exemplified in the 1958 report found, and it is true today, that it is technically feasible and possible to keep the park roads open.

However, being technically feasible and possible, and being efficient, cost conscious, aware of visitor and employee safety, and practical, present two different aspects of the problem.

One of the major practical factors we must consider is the climatological one. The winters in the park are notably severe. Low temperatures are the generally accepted rule. The severity of low temperatures is compounded by the relatively high humidity, brought about by steam generated at hot springs, pools, and geysers as well as the high proportion of warm water area. This causes heavy fog in thermal areas. Snows generally are medium to heavy. Couple these with high winds, the powdery characteristic of the snow, and one experiences extremely poor visibility, severe drifting throughout the park, and considerable avalanche hazard on some portions of the road system, notably in the vicinity of Sylvan Pass on the east entrance road.

The estimated number of winter visitors to Yellowstone National Park projected in the 1958 report was derived from data compiled and analyzed by the several surrounding States. While this data in itself has not been updated, there is no indication that there has been, or will be, a substantial increase in numbers over that previously reported.

While the summer traffic in the park is essentially recreational in character, winter sports areas closer to centers of population and transcontinental highways in the surrounding territories offer facilities for winter use that do not experience these uncomfortable combinations of climatological conditions.

If the park were to be opened during the winter, the costs of visitor safety would be great. Winterized maintenance and residential areas, winterized concession facilities and services, refugee cabins in areas of extreme hazard, additional patrols, additional personnel and equipment would all be mandatory.

RECREATIONAL DEVELOPMENT

We, of course, were aware of the recreational development taking place adjacent to Yellowstone and Grand Teton National Parks, and we recognize the economic impact that may derive for this area. While we cannot doubt that there would be an economic impact on other communities surrounding Yellowstone, the major factors that keep the park closed during the winter have not changed over the years. It is nature's will, not man's. We must consider safety first and then the enjoyment of the visitor. Old Faithful Geyser can indeed be wonderous on a clear winter morning, but would a visitor enjoy the park on an overcast, windy, below freezing day on treacherous, icy mountainous roads? With these predominant conditions we doubt that the recreation potential in the park would be sufficient in relation to cost to warrant keeping the roads open.

Many segments of Yellowstone's roads have been improved. However, other portions still remain to be reconstructed. These portions were built to 1920 road standards and are narrow, curved, and with an inadequate surface for safe driving that would allow them to be opened during the winter months.

There is now under construction, outside the park, the Sunlight Basin Road which is being developed as an all-weather road. Once this road is completed and the National Park Service has had an opportunity to study traffic patterns and visitor flow, the road could conceivably permit travel through the park on a year-round basis on a portion of the park's road system.

In answer to your question, Senator McGee, we believe little would be gained by having a survey committee again evaluate, reevaluate, and update prior studies. The major factors which the previous surveys have covered have not changed significantly over the past 7 years.

ELK IN YELLOWSTONE NATIONAL PARK HERD

Question. The reduction of the number of elk in the Yellowstone Park herd continues to be of concern to a number of people in Wyoming and the immediate surrounding area. Even at this time I continue to receive mail from my constituents in response to reports being circulated that wholesale slaughter of elk is being continued in further efforts to bring the Yellowstone Park herd down to within manageable limits. It is my understanding that most of the reduction necessary is being taken care of through methods of live trapping and disposal of the live animals at this time. For the purposes of the record, however, and to clarify any possible misunderstanding, I would invite your comments in some detail on both the management and reduction of the Yellowstone elk herd.

Answer. We are pleased to report that this season's reduction program for both the upper Gallatin and northern Yellowstone elk herds have been practically completed without a single elk having to be killed within the park specifically as a herd control measure. Cooperative biological collection in the northern herd is continuing, however, and will eventually offer all elk managers with the greatest single accumulation of research data available.

Despite the continuing publication of misleading articles on these two elk management programs, reduction figures due to the cooperative efforts of the

States of Montana and Wyoming, and the U.S. Forest Service, Bureau of Land Management, and National Park Service are as follows:

Upper Gallatin herd:	
Direct reduction in park	0
Estimate of hunter kill outside park (regular season)	70
Special postseason hunt outside park	765
Poached	3
Total herd reduction	838
Northern Yellowstone herd:	
Direct reduction in park	0
Live trapped and shipped from park	665
Estimate of hunter kill outside park (regular season)	30
Special postseason hunt outside park	982
Collections for cooperative Federal-State biological studies	89
Trapping and other miscellaneous losses	17
Total herd reduction	1,783

Except for continuing biological collection of about 5 animals per week for a total in the vicinity of 100, these figures basically reflect final totals for the 1964–65 elk management program for Yellowstone.

Disposition of Surplus Animals From National Park Herds

Question. In further reference to the elk problem, I receive numerous inquiries from both individuals and organizations requesting information on how they might obtain either live animals or carcasses of both elk and buffalo from National park herds. I would appreciate it if you would advise me the policy of the National Park Service in this regard in the disposition of its surplus animals.

Answer. Individuals and organizations should make their requests directly to the Superintendent of Yellowstone outlining in detail their specific requests for either live animals or carcasses.

The individual or organization requesting live elk must have the approval of its State conservation agency. Generally the requests for live elk are honored in the following priority: scientific studies, zoos, States, and game farms for restocking purposes, and then to private individuals or organizations.

Department of Agriculture regulations prohibit the interstate shipment of live bison from Yellowstone National Park because they are infected with brucellosis (Bang's disease). Therefore, all bison removed from the park's herds must either be killed at the traps or shipped to an approved slaughterhouse alive for processing. Generally, all bison meat, heads, and hides are made available to Indians through the Bureau of Indian Affairs' various area offices.

The Service has generally adhered to a policy of distributing both elk and bison carcasses in the following priorities:

(1) Indian agencies, tribes, hospitals, and schools.
(2) Federal and State Governments and institutions.
(3) Other hospitals and welfare institutions.
(4) Public school lunch programs.
(5) Sportmen's and civic organizations.
(6) Private individuals.

The last two mentioned groups would only receive bison or elk carcasses in the event insufficient orders were received from the higher priority groups.

Fish Biology and Fishing Potential at Yellowstone National Park

Question. In the past few years, the National Park Service, working in cooperation with the Fish and Wildlife Service, has conducted extensive studies on the fish biology and fishing potential of Yellowstone National Park. With the ever-increasing travel to the park, it is in my opinion extremely important that all reasonable measures be taken to insure as many fish as possible throughout the national park waters. With this in mind, I would appreciate your comments on this program and the progress which has been made in this area.

Answer. The Bureau of Sport Fisheries and Wildlife continues to assist the National Park Service by conducting scientific investigations of the biology of the sport fishery resources of Yellowstone National Park and the visitor use of these resources. In 1964, with an appropriation of $50,000 by the Congress, the

Bureau expanded this project to initiate studies on other lakes and streams of the park in addition to the investigations on the cutthroat trout of Yellowstone Lake.

On Yellowstone Lake in 1964, the number of anglers increased slightly over 1963. The total number of fish caught remained nearly the same. In 1964, 210,257 anglers fished 488,593 hours and caught 321,433 cutthroat trout. They caught the trout at the rate of 0.66 fish per hour.

Bureau biologists made a special study of the significance of sport fishing in the vicinity of Fishing Bridge. In this zone of heaviest fishing, there is some indication that the fish stock in this vicinity has been overharvested.

Surveys were made of nine other lakes of the park where special information is required for management uses. Included were Squaw Lake, Sylvan Lake, Trout Lake, Duck Lake, North and South Twin Lakes. The Twin Lakes support populations of grayling.

Graduate students working in connection with the project made special studies on the mortality of trout eggs in the redds and undertook an evaluation of the "fishing for fun" program.

The National Park Service recognizes the significance of the sport fishery resources of Yellowstone National Park and the information supplied by these investigations is assisting in the management of the lakes and streams of the park.

Service Facilities at Green River, Wyo.

Question. As I recall, the National Park Service was provided with funds last year to commence construction of National Park Service facilities at Green River, Wyo., in connection with the administration of the Flaming Gorge Recreation Area. I would appreciate it if you would comment on the status of that construction project and also indicate what further plans the Park Service has for development of this area which is of such extreme importance to southwestern Wyoming.

Answer. The Public Works Appropriation Act, 1965, included $65,100 for construction of a portion of the district headquarters at the town of Green River, Wyo., on lands donated by the town. The 1966 budget estimates include $139,300 for completing these developments. Facilities here will consist of a combination district ranger station-visitor contact station and utility building; site improvements, utilities, an employee residence, signs and markers, circulatory roads, parking areas, drives, and walks. Future development in this location will depend upon the volume of public use received. Some grading of the construction site has been accomplished and signs erected. Construction plans are 70 percent complete, and it is planned to advertise for contract bids in April with bid opening scheduled for May 1965. Construction of the facilities should be completed this fall, and ready for the visitor use season of 1966.

Adjournment of the Subcommittee

Chairman Hayden. If there are no further questions, the subcommittee will stand adjourned until Tuesday, February 23, at 10 a.m., when we will have the Office of Oil and Gas, Bureau of Mines, and Office of Coal Research.

(Whereupon, at 11:30 a.m., Friday, February 19, 1965, the subcommittee recessed until 10 a.m. February 23, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

TUESDAY, FEBRUARY 23, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Alan Bible temporarily presiding.

Present: Senators Bible, Byrd, McGee, Bartlett, Proxmire, Mundt, and Young. Also present: Senator Cannon.

DEPARTMENT OF THE INTERIOR

OFFICE OF OIL AND GAS

STATEMENTS OF REAR ADM. ONNIE P. LATTU, DIRECTOR, OFFICE OF OIL AND GAS; DONALD E. WAGNER, ADMINISTRATIVE OFFICER; J. CORDELL MOORE, ADMINISTRATOR, OIL IMPORTS ADMINISTRATION; HENRY C. RUBIN, CHAIRMAN, OIL IMPORT APPEALS BOARD; AND HARVEY B. MACK; ASSISTANT DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR

1966 BUDGET ESTIMATE

Senator BIBLE. The subcommittee will come to order.

This is the morning that has been regularly noticed and set for hearings on appropriation requests from the Office of Oil and Gas of the Department of the Interior, and our witnesses are Rear Adm. Onnie P. Lattu and Donald E. Wagner.

Gentlemen, would you come forward and bring with you any of your staff members whom you desire.

I understand that we likewise have Mr. Cordell Moore of the Oil Imports Administration.

The budget estimate for the Office of Oil and Gas for fiscal year 1966 is $704,000. This is $44,000 more than was appropriated in fiscal year 1965. The justification for this request will be placed in the record.

(The justification referred to follows:)

COORDINATION OF OIL AND GAS ACTIVITIES

The Office of Oil and Gas was established on May 6, 1946, pursuant to Presidential letter of Harry S. Truman. The office consists of a small staff organization responsible for leadership, information, and coordination of Federal oil and gas policies and activities.

The estimate of funds required for fiscal year 1966 is the same as 1965—$535,000, and the level of staff is also the same at 39 employees.

There are no major program changes, however, as one of the more important consequences of President Johnson's reaffirmed delegation to the Secretary of the Interior for oil policy in the executive branch, greater emphasis will be devoted to studies and assessments dealing with the adequacy and well-being of the domestic petroleum industry.

ADMINISTRATION OF OIL IMPORT PROGRAM

This program was established March 13, 1959, pursuant to Presidential Proclamation No. 3279, as amended. The administration establishes maximum quotas for importers of crude oil and petroleum products into the United States and Puerto Rico. Funds and personnel required for fiscal year 1966 will be the same as 1965 at $154,000 and 11 employees. Programs will continue without major change.

OIL IMPORT APPEALS BOARD

The Board was established to conduct hearings on appeals from importers who request a change in their quota or who do not qualify for a quota. Funds provide for one employee, and transcripts of hearings.

Appropriation, 1964	$616,500
Appropriation, 1965	660,000
Pay cost supplemental	44,000
Total appropriation, 1965	704,000
Budget estimate, 1966	704,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
1. Coordination of oil and gas activities	$458,164	$499,800	$35,200	----------	$535,000
2. Administration of oil import program	140,764	145,700	8,300	----------	154,000
3. Oil Import Appeals Board	10,541	14,500	500	----------	15,000
Unobligated balance lapsing	6,031	----------	----------	----------	----------
Total	615,500	660,000	44,000	----------	704,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1965 compared with 1966
1. Coordination of oil and gas activities	$458,164	$535,000	$535,000	----------
2. Administration of oil import program	140,764	154,000	154,000	----------
3. Oil Import Appeals Board	10,541	15,000	15,000	----------
Unobligated balance lapsing	6,031	----------	----------	----------
Total	615,500	704,000	704,000	----------

JUSTIFICATION

The budget estimate for fiscal year 1966 is $704,000. This amount is the same as the current fiscal year appropriation and provides funds for the activities of the following three offices:

1. Office of Oil and Gas	$535,000
2. Oil Import Administration	154,000
3. Oil Import Appeals Board	15,000
Total	704,000

OFFICE OF OIL AND GAS

1. Authority

The Office of Oil and Gas was established on May 6, 1946, by the Secretary of the Interior, pursuant to Presidential letter of May 3, 1946, as the agency in the Federal Government having primary responsibility for leadership and information on petroleum and gas, and to serve as the principal channel of communication with the petroleum and gas industries. Additional defense planning responsibilities were subsequently assigned to the Office of Oil and Gas.

2. Mission

As the Nation's principal natural resource conservation agency, the Department of the Interior bears a special obligation to assure that our expendable resources contribute their full measure to the progress, prosperity, and security of America, now and in the future.

The Office develops, evaluates, and coordinates oil and gas information to provide sound bases for establishment and implementation of Government policies and programs for oil and gas; provides information and service to Government agencies with respect to strategic and economic factors affecting the petroleum and gas industries both in the United States and abroad; recommends programs and policies to improve the position and capabilities of these domestic industries, and provides expert advice with respect to international policies affecting petroleum and gas.

The Office prepares national emergency plans and develops preparedness programs to provide a state of readiness in petroleum and gas for all conditions of national emergency in collaboration with other Federal agencies, State and local governments, and industry; provides for a standby Emergency Petroleum and Gas Administration; selects and trains executive reservists to staff the EPGA. The Office of Oil and Gas would serve as the nucleus of EPGA in an emergency. The Office also participates with other Federal agencies in petroleum activities of international organizations and U.S. alliances in planning and testing programs designed to meet U.S. and allied emergency oil and gas requirements.

3. Programs and activities

The Office receives advice and cooperation from the petroleum and gas industries through industry advisory committees such as the National Petroleum Council, Foreign Petroleum Supply Committee, and Petroleum Security Subcommittee of the FPSC. The Office participates in the activities of international committees, State organizations, and Federal Government interagency organizations concerned with petroleum and gas matters. These include the Petroleum Planning Committee of the North Atlantic Treaty Organization, Special Committee for Oil of the Organization for Economic Cooperation and Development and its U.S. Petroleum Advisory Committee, Committee on Gas of the Economic Commission for Europe (United Nations), Interstate Oil Compact Commission, and numerous Federal Government interagency groups.

(*a*) *Evaluation and forecasting.*—The Office of Oil and Gas is the only Federal Government office that consolidates military, industrial, and civilian petroleum requirements; correlates these requirements with probable availability of petroleum and gas; makes comprehensive petroleum and gas supply-demand surveys; and prepares forecasts of the probable availability of petroleum and gas to meet the peacetime requirements of the United States and the friendly foreign nations from all sources at home and abroad. In collaboration with the military and the Office of Emergency Planning conducts petroleum and gas supply-demand surveys to coordinate probable military demands with essential civilian and industrial requirements of the United States and the friendly foreign nations to meet emergency or wartime requirements.

Data includes information on capacity and facilities to produce, refine, store, and transport petroleum and gas in the free world under peacetime, emergency,

or wartime conditions; also, supply-demand information for the free world under the same conditions.

Information on petroleum and gas supply and demand is available from many sources. Federal sources include the Geological Survey, the Bureau of Mines, the Department of Commerce, the Federal Power Commission, the Interstate Commerce Commission, or any agency developing, maintaining, and publishing data which has a bearing on petroleum and gas supply. State sources include the Interstate Oil Compact Commission, Texas Railroad Commission, and other State conservation agencies of oil-producing States. Industry sources include information regularly published by oil and gas trade associations and by direct contact with the executive and technical personnel in the oil and gas industry.

"Additional information is obtained by utilizing the services of industry advisory councils, boards, and committees established by the Secretary of the Interior. These include the National Petroleum Council, which provides the services of the best qualified men in the oil and gas industries on broad technical matters concerning petroleum and gas; the Foreign Petroleum Supply Committee which provides an advisory service pertaining to sources and methods for obtaining petroleum supply and demand information for all countries of the free world, and develops plans of action to prevent, eliminate, or alleviate shortages of petroleum supplies which threaten to affect adversely the security of the United States; the Petroleum Security Subcommittee of the Foreign Petroleum Supply Committee composed of special groups of technical advisers to the Department of the Interior, Department of Defense, and Office of Emergency Planning on highly confidential petroleum and gas questions involving national security and free world defense; and the Emergency Advisory Committee for Natural Gas which provides an advisory service pertaining to plans of action to assure adequate supplies of natural gas under emergency or wartime conditions. These correlations of the probable petroleum and gas supplies available with probable peacetime, emergency, or wartime requirements disclose areas of potential deficiencies The Office then devises ways to alleviate or prevent such deficiencies.

The foregoing information also provides a basis for special studies, reports, and papers pertaining to—

(1) Planning by the military and interested civilian agencies for threatened or actual crisis in situations such as Quemoy, Matsu, Lebanon, Jordan, Korea, Suez, Berlin, and Cuba;

(2) Advice and assistance on a wide range of oil and gas matters to the Congress, its committees, the Departments of State, Commerce, and Defense, Office of Emergency Planning, and to other Federal agencies concerned with petroleum and gas or the supply thereof;

(3) Cooperation between the Federal Government and the oil-producing States and the State conservation bodies thereof, and the Interstate Oil Compact Commission;

(4) Cooperation between the Federal Government and the petroleum and gas industries and industry councils, boards, and committees;

(5) Activities of U.S. representatives at meetings of the Petroleum Planning Committee of NATO;

(6) Activities of U.S. representatives at meetings of the Energy and Oil Committees of the Organization for Economic Cooperation and Development;

(7) Activities of U.S. representatives at meetings of special petroleum industry advisory groups appointed by the Organization for Economic Cooperation and Development composed of the friendly European nations;

(8) Activities of U.S. representatives at meetings of other international organizations dealing with the economic development of areas of the free world other than the NATO countries;

(9) Petroleum planning by the Department of State in connection with its programs with the NATO countries and the friendly foreign nations elsewhere in the free world.

(*b*) *Committee activities.*—The Office of Oil and Gas chairs or furnishes representatives to a variety of Federal, State, and industrial committees interested in or affected by petroleum and gas operations or supplies. Some of these are:

(1) Cochairman of committees or subcommittees of the National Petroleum Council (industry);

(2) Cochairman and the executive secretary of the Emergency Advisory Committee for Natural Gas and its subcommittees (industry);

(3) Chairman of the Foreign Petroleum Supply Committee (industry) and its subcommittees;

(4) Executive secretary of the Organization for Economic Cooperation and Development Petroleum Advisory Committee (industry);

(5) Petroleum advisers to working groups of petroleum committees of international organizations;

(6) Department of the Interior alternate representative to the Interstate Oil Compact Commission (State government);

(7) Department of the Interior representative and alternate on the Petroleum Subcommittee of the Economic Intelligence Committee of Central Intelligence Agency (Federal Government);

(8) Department of the Interior alternate representative on the Operating Committee of the Advisory Committee on Export Policy of the Department of Commerce (Federal Government);

(9) Department of the Interior representative on the Interdepartmental NATO Petroleum Backstopping Committee.

(c) *Workload.*—Requests for advice and assistance from Federal, State, local, industrial, and international organizations continued at a high rate during the past fiscal year. This high level workload is expected to continue so long as the economic development and military assistance programs continue. The number, type, and scope of worldwide petroleum supply-demand studies have been increased in order to handle properly these urgent requests for advice and assistance. The supply-demand data must be maintained on a current basis so as to forecast promptly petroleum requirements under peacetime, emergency, or wartime conditions. Also, military-type studies essential to military defense needs anywhere in the free world have been expanded significantly and must be revised promptly to meet actual or potential emergencies as the world situation changes.

In addition, the Office must furnish chairmen, cochairmen, and/or petroleum advisers to industry advisory committees at national and regional levels, full-time Government employees for staff assistance, stenographic reporting service for committee meetings, staff assistance for the preparation of reports, and the executive secretary for the Emergency Advisory Committee for Natural Gas.

A comprehensive study was started recently of the current position of the domestic petroleum industry including the entire range of factors bearing on prices and costs as well as the position of the domestic petroleum industry in the energy economy of the United States and the world. The Office of Oil and Gas has been directed to take the lead and coordinate this study. This will result in an additional workload which we plan to absorb without an increase in personnel even though revisions no doubt will be required in subsequent years. There was an increase of 15.4 percent in outgoing mail processed during the fiscal year 1964 over 1963.

(d) *Manpower and fund utilization.*—Considerable progress has been made in the current fiscal year in better utilization of funds to meet the increased cost in other objects that have been occurring for several years due to changes in operating expenses. We have eliminated two grade 15 jobs and lowered the average grade and salary rate slightly in the current year and again in the budget year. The money savings will be available to meet the increased cost in other expenses. The savings were affected through the retirement of several older employees with salaries at the top of the grade and the inhiring of replacements at lower grades and salaries. This plan will result in 1966 in a savings of $406 per job, and eliminate the need for an additional appropriation of $27,500 for personnel compensation and benefits.

(e) *Program changes.*—As one of the more important consequences of President Johnson's reaffirmed delegation to the Secretary of the Interior the responsibility for oil policy in the executive branch, the comprehensive oil and gas study was undertaken by the Office of Oil and Gas to assess the current petroleum situation and provide a foundation on which to compile and build meaningful and pertinent statistics, assessments, and policy formulation for the future. Greater emphasis will be devoted in the future to studies and assessments dealing with the adequacy and well-being of the domestic petroleum industry. All other past programs are expected to continue.

Administration of Oil Import Program

AUTHORITY

Pursuant to section 2 of the act of July 1, 1954, as amended (72 Stat. 678; 19 U.S.C. 1352a), and section 232 of the Trade Expansion Act of 1962 (Public Law 87–794), the Director, Office of Civil and Defense Mobilization, made an appropriate investigation and determined that crude oil and crude oil derivatives and

products were being imported in such quantities and under such circumstances as to threaten to impair the national security.

The President concurred in the recommendation of the Director, Office of Civil and Defense Mobilization, and issued Presidential Proclamation No. 3279, dated March 10, 1959, "Adjusting Imports of Petroleum and Petroluem Products into the United States" (24 F.R. 1781), as amended by Proclamation 3290 (24 F.R. 3527), Proclamation 3328 (24 F.R. 10133), Proclamation 3386 (25 F.R. 13945), Proclamation 3389 (26 F.R. 507, 811), Proclamation 3059 (27 F.R. 11985), Proclamation 3531 (28 F.R. 4077), and Proclamation 3541 (28 F.R. 5931). The Presidential proclamation authorized the Secretary of the Interior to issue regulations for the purpose of implementing the provisions thereof.

The Secretary of the Interior, pursuant to the Presidential proclamation, established on March 13, 1959, an Oil Import Administration within the Department of the Interior, issued regulations for the operation of the oil import program, and delegated, except for appeals, the authority conferred upon him by the proclamation to the Administrator, Oil Import Administration (24 F.R. 1907 as amended by 24 F.R. 2622, 24 F.R. 4654, 24 F.R. 6759, 24 F.R. 10075, 25 F.R. 4957, 25 F.R. 6051, 25 F.R. 12999, 25 F.R. 13768, 26 F.R. 782, 26 F.R. 1248, 26 F.R. 2121, 26 F.R. 5396, 26 F.R. 11973, 27 F.R. 2603, 27 F.R. 5954, 27 F.R. 12442, 28 F.R. 2677, 28 F.R. 4953, 28 F.R. 6353, 28 F.R. 14318, 29 F.R. 8170, and 29 F.R. 16986).

OBJECTIVES

The program is designed to insure a stable and healthy industry in the United States capable of exploring for and developing new petroleum reserves to replace those being depleted. The basis of the program is the certified requirements of our national security which make it necessary that we preserve to the greatest extent possible a vigorous and healthy petroleum industry in the United States.

PROGRAM

Prior to the beginning of each allocation period the Administrator shall determine in accordance with the limitations imposed by section 2 of Proclamation 3279, as amended, the quantities of imports of crude oil and unfinished oils which are available for allocation in districts I–IV and in district V, respectively, and the quantities of imports of residual fuel oil to be used as fuel and of imports of finished products other than residual fuel oil to be used as fuel which are available for allocation in such districts.

Pursuant to paragraph (d) of section 2 of Proclamation 3279, as amended, the Secretary will make a determination as to the level of imports into district I, districts II–IV, and district V of residual fuel oil to be used as fuel in sufficient time to permit the making of allocations in advance of each allocation period.

Pursuant to section 2 of Proclamation 3279, as amended, it is determined (1) that the average barrels per day of imports of crude oil and unfinished oils into Puerto Rico during any particular allocation period shall not exceed the average barrels per day, as determined by the Administrator, during the month of July 1958 of imports of such commodities into Puerto Rico, (2) that the average barrels per day, as determined by the Administrator, of imports of residual fuel oil to be used as fuel and of imports of finished products other than residual fuel oil to be used as fuel into Puerto Rico during any particular allocation period shall not exceed the average barrels per day of imports of such products, respectively, into Puerto Rico during the last half of the calendar year 1958, and (3) such lower or higher levels as the Secretary may subsequently determine are required to meet increases or decreases in local demand in Puerto Rico and demand for export to foreign areas

After each such determination, the Administrator shall as provided by these regulations make allocations and issue import licenses to eligible applicants for the appropriate allocation period.

ALLOCATION PERIODS

Allocations of imports of crude oil, unfinished oils, and finished products will be made for periods of 6 months; that is, July 1 through December 31; January 1 through June 30; except that allocations of imports into districts I–IV of residual fuel oil to be used as fuel will be made on an annual basis beginning April 1.

APPLICATIONS

An application for allocations of imports of crude oil, unfinished oils, or finished products and for a license or licenses, must be filed with the Administrator, in such form as he may prescribe, not later than 60 calendar days prior to the beginning of the allocation period for which the allocation is required. However, if the 60th day is a Saturday, Sunday, or holiday, the application may be filed on the next succeeding business day.

OPERATIONS

Involves (1) analysis of data published by the Bureau of Mines for crude oil, unfinished oils, and finished products by petroleum industry coordinating districts and Puerto Rico, and types of petroleum and petroleum products. Also, analyze data furnished in reports by over 200 importers as well as past allowances for imports. Summarize data by districts and type of products and set overall amounts to be imported during each allocation period.

(2) Analyze applications from over 200 importers to determine eligibility for semiannual import allocations for crude oil, unfinished oils, and finished products.

(3) Establish semiannual allocations for imports of crude oil, unfinished oils, and finished products and yearly allocations for imports of residual fuel oil. Also establish the amounts to be allotted to each eligible applicant by type of products.

(4) Issue semiannual licenses to eligible importers authorizing the amounts of crude oil, unfinished oils, and finished products to be imported during each semiannual period, and quarterly licenses for eligible importers of residual fuel oil.

(5) Analyze reports from each importer showing the amount of crude oil, unfinished oils, or finished products entering the United States under the license issued, the port of entry, and date of entry. Each report must be filed with the Oil Import Administration within 15 days after the end of a particular month. Maintain adequate records of imports for the preparation of regular and special reports to the Director, Office of Emergency Planning, the President, and the Congress. Also, to answer telephone or written inquiries as well as inquiries by personal visits regarding the regulations, import allocations, or problems resulting therefrom or affected thereby from officials of interested importing companies, trade associations, and oil companies as well as State regulatory bodies, and the general public.

(6) Persons concealing material facts or making false statements in or in connection with any applications or reports filed, or in connection with any license presented to or statements made to a collector of customs, with respect to imports of crude oil, unfinished oils, or finished products, are guilty of a crime and upon conviction may be punished by fine or imprisonment or both. Analyze applications, licenses, and reports to prevent possible or actual violations of the oil import regulations. Initiate, when appropriate, action to start the necessary investigations to determine whether a crime has been committed. Initiate necessary reports to the Solicitor, Department of the Interior, for appropriate action.

(7) Analyze monthly reports of stocks of residual fuel oil on the east and gulf coast areas as a major factor in determining necessary adjustments to import levels for residual fuel oil.

(8) Analyze monthly reports furnished by collector of customs and by importers showing the amount of crude oil, unfinished oils, and finished products imported by overland transportation from the country in which produced and exempt from the overall import program to determine whether these imports tend to threaten the accomplishment of the purpose of proclamation 3279, as amended.

(9) Review and take appropriate action upon exemption requests for the importation of small quantities of crude oil, unfinished oils, and finished products, including samples for testing or analysis, baggage entries, and informal entries.

(10) Prepare affidavits and furnish other technical exhibits, information, and advice to the Department of Justice in the continual attacks upon the program in suits brought in the Federal courts. Review all exchange agreements. Any exchange of foreign for domestic crude oil that is made on less than a barrel-for-barrel basis must have the prior approval of the Administrator.

(11) Analyze all petitions filed with the Oil Import Appeals Board and, in cases deemed necessary, prepare and file with the Board a formal statement setting forth the position of the Administration. Attend hearings before the Board and file posthearing statements commenting on testimony and evidence presented at the hearing.

(12) Make inspections of records and facilities of importers to verify their compliance with the program and the accuracy of materials submitted by them.

There have been 7 amendatory Presidential proclamations and 22 amendments to the original oil import regulations. Each of these changes has resulted in additional work and the current staff of 11 is the absolute minimum for effective operations. No major changes in the program are anticipated during the budget year. The workload is expected to continue at present levels. No additional funds, except for pay act costs, are contained in the estimate for the Oil Import Administration.

The program for the Oil Import Administration is highly important, controversial, and vital to the development of mobilization programs of the United States and the nations of the free world. Import policies affect diplomatic relations with our friends in the free world, the economic development and defense mobilization programs for the North American Hemisphere, the operation and construction programs of the petroleum, gas, and allied industries, and the utilization of petroleum, gas, and petrochemicals by consumers. Not one phase of the oil import program can be accomplished inadequately without the possibility of embarrassment.

Considerable progress has been made in the improvement of operating procedures during the past few months. A revision of the press release mailing list cut mailing costs about 25 percent with an estimated savings of $1,200 per year. Separate application forms for an import allocation and license were combined into one form. This saves employees of interested petroleum companies and the Administration considerable time in processing and maintaining these forms. A new record system was instituted that consolidated data in one location and eliminated researching the files daily. The reduction in workload is estimated at 35 percent and eliminated the need for an additional clerk, GS–4, $4,480 per annum. In addition, there was an increase of 23.1 percent in outgoing mail processed during the fiscal year 1964 over 1963.

Oil Import Appeals

Mandatory restrictions on the importation of oil became effective March 11, 1959, and involve allocations and licenses for the importation of crude oils, unfinished oils, and finished products. The initial allocation period was March 11 through June 30, 1959. Allocations of crude oil and finished products other than residual fuel oil are now made and licensed on a 6-month basis. Effective April 1, 1961, residual fuel oil to be used as fuel is allocated on an annual basis and licensed on a quarterly basis.

Experience obtained since the inception of the program in March 1959, indicates that, if extensive revisions are not made in the oil import program or in the Board's authority, the administrative functions of the Board can continue to be met by the continued employment of one clerk-stenographer, paid from funds requested in this budget. In addition, the position of Chairman of the Board (formerly counsel to the Board), a full-time position, continues to be paid from funds appropriated to the Office of the Solicitor.

In addition to the one salary, the major expenditure is for transcripts of Appeals Board hearings; however, it is not possible to determine an exact amount since the number of petitions to be received varies widely from one allocation period to another (because of program changes or changes in the Board's authority) as shown in the following table:

Allocation period:	*Number of petitions*
March to June 1959	81
July to December 1959	24
January to June 1960	55
July to December 1960	26
January to June 1961	26
July to December 1961	31
January to June 1962	48
July to December 1962	34
January to June 1963	30
July to December 1963	17
January to June 1964	27
July to December 1964	19
Total	418

Petitions under three separate allocation periods will be considered with the funds requested.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$705,441	$835,000	$907,000	$72,000
Reimbursements for emergency preparedness functions	−95,972	−131,000	−203,000	−72,000
Unobligated balance lapsing	6,031			
New obligational authority	615,500	704,000	704,000	
New obligational authority:				
Appropriation	615,000	660,000	704,000	44,000
Proposed supplemental due to civilian pay increases		44,000		−44,000
Object classification:				
11 Personnel compensation	592,477	707,000	754,000	+47,000
12 Personnel benefits	42,756	53,000	57,000	+4,000
21 Travel and transportation of persons	16,753	22,000	29,000	+7,000
22 Transportation of things	1,330	2,000	2,000	
23 Rent, communications, and utilities	9,145	10,000	11,000	+1,000
24 Printing and reproduction	8,483	8,000	10,000	+2,000
25.1 Other services	8,208	8,000	9,000	+1,000
25.2 Services of other agencies	11,244	14,000	25,000	+11,000
26 Supplies and materials	5,584	6,000	7,000	+1,000
31 Equipment	9,461	5,000	3,000	−2,000
Total obligations	705,441	835,000	907,000	72,000

Senator BIBLE. You may proceed, Admiral.

Admiral LATTU. The budget before you covers the Office of Oil and Gas, of which I am the Director, the Oil Imports Administration, of which Cordell Moore is the Administrator, and the Oil Import Appeals Board, of which Mr. Rubin is the chairman.

Senator BIBLE. Very well.

Admiral LATTU. I will speak for my part of the budget, which is the Office of Oil and Gas, and with your permission I can file my statement, or read it, whichever you like.

Senator BIBLE. Yours is a very short statement, as I notice it; you may read it so as to put it in the proper framework.

STATEMENT OF DIRECTOR LATTU

Admiral LATTU. Yes, sir.

The 1966 estimate of $704,000 is the same as was appropriated for fiscal year 1965. The estimate is distributed as follows: coordination of oil and gas activities, $535,000; administration of oil import program, $154,000; and administration of the Oil Import Appeals Board, $15,000.

The estimate of $535,000 for the Office of Oil and Gas is essential for the effective coordination of oil and gas matters. Although there is a constant increase in workload of regular activities, we expect to handle it without an increase in the number of positions.

The Office develops, evaluates, and coordinates information for establishment and implementation of Government policies and programs for oil and gas; provides information and service to Government agencies with respect to strategic and economic factors affecting the petroleum and gas industries both in the United States and abroad; recommends programs and policies to improve the position and capabilities of these domestic industries; and, provides expert advice with respect to international policies and activities affecting petroleum and gas.

INFORMATION FROM PETROLEM AND GAS INDUSTRIES

The Office receives detailed factual studies and outstanding cooperation from the petroleum and gas industries through industry advisory committees such as the National Petroleum Council, Emergency Advisory Committee for Natural Gas, Foreign Petroleum Supply Committee, and Petroleum Security Subcommittee of the FPSC, which allows for a small and effective office.

PARTICIPATION IN INTERNATIONAL COMMITTEES AND OTHER ORGANIZATIONS

The Office participates in international committees, State organizations, and interagency organizations concerned with petroleum and gas matters. These include the Petroleum Planning Committee of NATO, Special Committee for Oil of the OECD, Committee on Gas of the Economic Commission for Europe (United Nations), petroleum and gas seminars of the Economic Commission in Asia and the Far East (United Nations), Interstate Oil Compact Commission, and numerous Federal interagency groups.

The Office prepares national emergency plans and develops preparedness programs to provide a state of readiness in petroleum and gas for all conditions of national emergency; provides for a standby Emergency Petroleum and Gas Administration; selects and trains executive reservists to staff the EPGA; and serves as the nucleus of EPGA in emergency.

THE INTERNATIONAL ORGANIZATIONS AND U.S. ALLIANCES

The Office also participates with other Federal agencies in petroleum activities of international organizations and U.S. alliances in planning and testing programs designed to meet United States and allied emergency requirements. Several members of the staff hold key emergency assignments in the EPGA and the NATO Wartime Oil Organization.

Favorable action on this request for an appropriation of $535,000 for coordination of oil and gas activities is respectfully requested.

1966 BUDGET REQUEST THE SAME AS 1965 APPROPRIATIONS

Senator BIBLE. Thank you, Admiral.

As I understand it, your total request is $704,000; is this right?

Admiral LATTU. Yes, sir.

Senator BIBLE. And you say that is the same as the appropriation for the last fiscal year?

Admiral LATTU. Yes, sir.

Senator BIBLE. My memorandum shows that this is $44,000 more. Is there some explanation for that?

PAY INCREASE SUPPLEMENTAL IN 1965

Admiral LATTU. We had a supplemental last year to cover pay increases, so it is the same.

Senator BIBLE. I have been advised that there is pending a supplemental item.

Admiral LATTU. Yes, sir.

NUMBER OF EMPLOYEES IN OFFICE

Senator BIBLE. The positions are exactly the same?

Admiral LATTU. Yes, sir.

Senator BIBLE. There is no change in positions in your division.

EMPLOYEES OF OIL IMPORT ADMINISTRATION

How about the other divisions, the Oil Import Administration?

Mr. MOORE. Mr. Chairman, I would like to invite your attention to the fact that we are joined together here only for budget purposes. The Oil Import Administration is totally separate from the Office of Oil and Gas.

We request $154,000. We have 11 employees, and our program also will not be changed.

I also have a statement. May I read it, or shall I highlight it?

Senator BIBLE. You may highlight it, and it will be inserted in the record at this point.

1966 BUDGET REQUEST

Mr. MOORE. It is one that applies to the oil import program itself.

Senator BIBLE. I understand that. It uses the same number of people, the same amount of money as the last fiscal year, other than pay raises?

Mr. MOORE. That is correct. It is $154,000 instead of $140,000 last year. We have 11 employees, which is identical to last year.

(The statement referred to follows:)

OIL IMPORT ADMINISTRATION

STATEMENT BY ADMINISTRATOR MOORE

The 1966 estimate of $154,000 is the same amount appropriated for fiscal year 1965.

The Oil Import Administration was established by the Secretary of the Interior March 13, 1959 (24 F.R. 1907, as amended), pursuant to Presidential Proclamation No. 3279, dated March 10, 1959 (24 F.R. 1781, as amended). Substantial changes have been made in the program since it was inaugurated. There have been 7 amendatory Presidential proclamations and 22 amendments to the original oil import regulations.

The program is designed to insure a stable, healthy industry in the United States capable of exploring for and developing reserves to replace those being depleted. This program is vital to the defense mobilization activities of the United States and the nations of the free world. Oil import policies affect diplomatic relations with our friends in the free world, economic development and defense mobilization plans of the Western Hemisphere and other free world areas, and, last but not least, the petroleum, gas, and allied industries, and the consumers of petroleum and gas.

The basis of the program is the certified requirements of our national security which make it necessary that we preserve to the greatest extent possible a vigorous and healthy petroleum industry in the United States. In serving our own direct security interests, the program will also help prevent severe dislocations in our own oil industry and in oil industries elsewhere which also have an important bearing on our own security.

The Administration establishes import quotas by petroleum districts and types of products; establishes semiannual allocations to individual importers for imports of crude oil, unfinished oils, and finished products, and yearly allocations for imports of residual fuel oil; issues semiannual and quarterly licenses to eligible importers; analyzes monthly reports of imports and prepares consolidated regular and special reports by types of products and individual importers; analyzes applications, licenses and reports to prevent possible or actual violations of the oil import regulations and initiates necessary action incident thereto; evaluates

monthly imports to determine whether these imports tend to threaten the accomplishment of the purposes of Proclamation No. 3279, as amended; analyzes and takes appropriate action upon exemption requests and exchange agreements; prepares affidavits and other technical exhibits required by the Department of Justice in suits brought into Federal courts involving the program; prepares formal statements on petitions filed with the Oil Import Appeals Board setting forth and justifying the position of the Administration; makes inspections of records and facilities of importers to verify compliance to the program and the accuracy of the material submitted to the Administration, etc.

The current staff is the absolute minimum required for effective handling of present programs and workload. No additional funds are involved.

Considerable travel will be necessary to handle import problems with groups of producers, refiners, importers, State regulatory bodies, and trade associations. Long distance telephone calls and telegrams will be required to expedite and adjust oil import information urgently needed. Considerable funds will be needed for the reproduction of forms, regulations, press releases and reports.

Favorable action on this request for an appropriation of $154,000 is respectfully requested.

ACTIVITY HIGHLIGHTS OF 1965

Senator BIBLE. You might highlight your activities of last year.

Mr. MOORE. As you know, the Department administers the oil import program, which consists basically of a crude oil program (crude and unfinished oil) and products covering three separate areas—Districts 1 through 4, which is the area east of the Rocky Mountains, District 5, which is west of the Rocky Mountains, and Puerto Rico.

I might mention that District 5 is a crude deficit area and of course Puerto Rico has no crude oil supplies at all. The area east of the Rocky Mountains is a crude surplus area.

We also have the residual program which generally applies to District 1, the States along the Atlantic seaboard.

We have two basic periods when we establish quotas; the 1st of January and the 1st of July for crude oil. The residual fuel oil program runs for 1 year, beginning April 1. That is the beginning of the fuel year.

ESTABLISHMENT AND BASIS OF OIL IMPORT PROGRAM

The program is based upon the national security clause of the Trade Expansion Act.

I believe you know it is Presidential Proclamation No. 3279 which set up the program initially.

ADMINISTRATION OF THE OIL IMPORT APPEALS BOARD

Senator BIBLE. Now the third division, as I understand it, of the request that comes before us is the "Administration of the Oil Import Appeals Board," and there is a request there for $15,000. Is this correct?

Senator PROXMIRE. Mr. Chairman, would it be possible for me to ask the Admiral a question at this point?

Senator BIBLE. I will get right back to you, Senator Proxmire. This is such a modest request, for $15,000, I think this is refreshing.

Tell us about your request for $15,000.

Mr. RUBIN. It contains no professional salaries, sir.

It is the salary of one girl and the administration of the office and transcripts of hearings and miscellaneous modest items.

SALARY OF CHAIRMAN OF THE BOARD

Senator BIBLE. You are the Chairman of the Appeals Board. From where do you get your salary?

Mr. RUBIN. I have been and still am on the payroll of the Solicitor of the Department of Interior.

Senator BIBLE. And you are specifically assigned as Chairman of the Oil Import Appeals Board?

Mr. RUBIN. Yes, sir.

Senator BIBLE. This $15,000 is for what?

Mr. RUBIN. One girl running the office.

Senator BIBLE. And the general cost of administration?

Mr. RUBIN. Yes, sir, transcripts of hearings, and so forth.

BOARD JURISDICTION

Senator BIBLE. What do you hear?

Mr. RUBIN. The Board hears petitions based upon exceptional hardships, in cases of allocation holders of crude oil allocations. It has original jurisdiction in cases of finished petroleum products, that is, residual fuel oil and other finished products.

APPEALS HEARD BY BOARD

Senator BIBLE. How many appeals have you heard in the course of a year?

Mr. RUBIN. It has averaged 75. There have been 474 petitions since the program started in the last 6 years.

Senator BIBLE. How long does it take to dispose of an appeal?

Mr. RUBIN. The Board is subject to three time limitations a year. The allocations for crude oil are made on half yearly basis. The applications for residual fuel oil are made on an annual basis, and the Board has to complete its work 1 month before the new allocation period starts.

So in the case of crude oil, the petitions are heard and disposed of within 6 months.

Senator BIBLE. Senator Young?

Senator YOUNG. Who else is on the Board?

Mr. RUBIN. There is a member from the Department of Commerce appointed by the Secretary of Commerce, a member of the Department of Defense, appointed by the Secretary of that Department.

OIL IMPORTS

Senator YOUNG. You deal with imports?

Mr. RUBIN. Yes, sir. The Board considers petitions based upon exceptional hardship and error. These petitions may be filed by persons who hold allocations made by the Administrator or persons who do not have allocations who would like to have them. In cases of exceptional hardship, the Board may consider those petitions.

Senator YOUNG. Thank you.

Senator BIBLE. The Senator from Alaska.

Senator BARTLETT. No questions.

Senator BIBLE. Does the Senator from Wisconsin wish to interrogate the three witnesses?

SHALE OIL STUDIES

Senator PROXMIRE. Yes.

I would like to ask the Admiral a question. You say in your third paragraph:

> The Office develops, evaluates, and coordinates information for establishment and implementation of Government policies and programs for oil and gas; provides information and service to Government agencies with respect to strategic and economic factors affecting the petroleum and gas industries both in the United States and abroad; recommends programs and policies to improve the position and capabilities of these domestic industries; and, provides expert advice with respect to international policies and activities affecting petroleum and gas.

I presume that this information is also gathered, evaluated, and made available to the Congress for determination of policies. Is this correct?

Admiral LATTU. Yes, sir, we have many requests.

SHALE OIL POTENTIALS

Senator PROXMIRE. I have read a great deal and know very little about the rumors about shale oil, that the potentiality is enormous almost beyond imagination, and that this could revolutionize the oil industry.

There have been some unfortunate rumors about the notion that this might be made available to private industry under conditions that would not be very favorable to the Government, and so on.

I wonder if any study of this or any policies pertaining to this have been developed in such a way that they might be made available to Congress in an authoritative and accurate and responsible way so that we will know what the facts are and be in a position to evaluate what your office is thinking in this area.

BLUE RIBBON COMMITTEE REPORT

Admiral LATTU. In this particular area I have not been involved, but Secretary Udall has just released as of February 1 a report on this by a blue ribbon committee which he had appointed, and that should be available.

In addition, there is another report developed by the Department on oil and shale.

Senator PROXMIRE. It is my understanding that the Bureau of Mines works on this.

Admiral LATTU. Correct.

Senator PROXMIRE. At any rate, because of the responsibilities of your office, it would seem to me that you would have great interest in it, and could help a great deal in bringing other information to bear that would be appropriate. Is that not correct?

Admiral LATTU. Yes, sir. We have not at the present time been brought in because it has been experimental, and on top of that the committee was appointed by Secretary Udall. I sat in on one of the hearings.

ISSUANCE OF OIL SHALE REPORT

The shale report is just out, and it is being looked at very carefully so I have not been involved except on the sidelines.

Senator PROXMIRE. Do you have an expectation or basis for feeling that you might be brought into this in the near future?

Admiral LATTU. Not in the near future, the way I read the report. I think that we can provide several people to answer your particular questions, or give you any studies which have been made.

Senator PROXMIRE. Yes, I would like to know about it. Because it seems to me that your office, particularly on the basis of the description of the office's responsibilities and functions, would have a deep interest in this, and that you would be in a good position to give us expert advice in this matter so that we would have all the information and be in a position, to the extent that Congress makes policy in this area, to make it wisely and in an informed way.

Admiral LATTU. I would suggest that we submit to the committee, then, this last report that was made to Secretary Udall by the shale committee.

Senator PROXMIRE. Fine. I would appreciate it.

Senator BIBLE. I think it would be helpful, in addition to the copy furnished the Senator from Wisconsin, if you would furnish a copy to the staff, for the use of the subcommittee.

Admiral LATTU. Yes, sir.

Senator BIBLE. Any more questions?

Senator PROXMIRE. No, thank you.

Senator BIBLE. Senator Mundt, do you have any questions?

Senator MUNDT. No.

Senator BIBLE. Thank you very much, gentlemen.

BUREAU OF MINES

STATEMENTS OF FRANK C. MEMMOTT, ACTING DIRECTOR; CARL RAMPACEK, ASSISTANT DIRECTOR, ADMINISTRATION; HENRY P. WHEELER, JR., ASSISTANT DIRECTOR, HELIUM; HARRY PERRY, DIRECTOR, COAL RESEARCH; CHARLES H. JOHNSON, EXECUTIVE ASSISTANT TO ASSISTANT DIRECTOR, MINERAL RESOURCE DEVELOPMENT; HARRY F. WEAVER, CHIEF, DIVISION OF COAL MINE INSPECTION; ELWOOD THOMSON, CHIEF, DIVISION OF BUDGET; ROLLIEN R. WELLS, ASSISTANT DIRECTOR FOR METALLURGY RESEARCH; AND HARVEY B. MACK, ASSISTANT DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR

JUSTIFICATION

Senator BIBLE. Our next justification involves the Bureau of Mines. The Acting Director, Mr. Frank Memmott, and his staff will come forward and identify themselves for the record.

There will be placed in the record the statement of justification for the budget estimate of $31,625,000 for fiscal year 1966 for conservation and development of mineral resources. This is $1,525,000 more than was appropriated for this purpose in fiscal year 1965.

(The justification referred to follows:)

CONSERVATION AND DEVELOPMENT OF MINERAL RESOURCES

HIGHLIGHT STATEMENT

The Bureau's work under this appropriation falls into two broad categories, "Research" and "Resource development."

The research work is aimed at the proper and orderly application of scientific inquiry in the wise development and use of minerals and fuels in order to sustain our Nation's economic strength and to assure an adequate supply of mineral raw materials to meet the needs of an expanding population and constantly rising standard of living. Domestic population is expected to increase to 200 million in 1970 and 250 million in 1980, and economists have forecast a productivity (gross national product) that will rise 3 percent per year over this same period. Mineral and energy consumption resulting from these trends will require an amplification of mineral output at an estimated rate of 2.7 percent each year.

The budget year programs under the research category are designed to find new and expanded markets for coal; to increase production from underground oil and gas deposits; to carry out research on the properties of oil shale and the possibility of establishing an oil shale industry; to further the recovery and utilization of waste metal resources with particular emphasis on iron and steel scrap; to insure a sound scientific base for the immediate and long-range development of the domestic mining industry; to perfect techniques for the recovery of minerals from beneath the seas; and to pursue the safe and efficient utilization of industrial explosives.

Resource development investigations are designed to supply timely, accurate, and vital information on mineral and fuel resources that will (*a*) enable industry and Government to make soundly based decisions on mineral policy, and (*b*)

provide a meaningful background of economic and technical data that will serve as a basis for intelligent planning and programing of operations by industry and of Bureau and other federally sponsored programs for minerals and fuels.

The budget year programs for resource development will provide for automating selected statistical surveys and for increasing support of cooperative work with State mineral resource agencies; improving our understanding of the mineral economy and the factors affecting it; and advancing the general economy of the United States through investigations of mineral resources upon which the domestic coal, petroleum, natural gas, and minerals industries are based; and providing reliable data on international mineral activities which affect domestic industry.

Accomplishments during the past year

Progress was made in the further development of an operable coal-fired gas turbine which holds promise of opening up a new high-tonnage market for coal in the rapidly expanding field of power generation. Looking toward other new large markets for coal in the future, techniques were developed involving the conversion of coal and anthracite to liquid and gaseous fuel with special emphasis on the production of high-B.t.u. gas. Increased attention was given the production of chemicals and other valuable products from coal.

In petroleum research a feasibility study indicated that production may be stimulated through nuclear-explosive fracturing in some thick, low-permeability reservoirs containing natural gas or crude oil. Analytical methods were developed for determining 20 different trace metals in oilfield waters. An alcohol-surfactant method developed by the Bureau for removing water blocks from gas wells was successful in several field tests, increasing gas production 50 percent in one Utah well.

The oil shale demonstration plant at Anvil Points in Colorado was leased to the Colorado School of Mines Research Foundation. Investigations were initiated by the foundation with financial and technical support from two oil companies. Bureau laboratory studies progressed on characterization of oil shales and shale oils, as well as on quality and quantity of fuel and chemical products from shale oil.

The significant contributions to metallurgical science and technology included: Production of prereduced iron pellets for blast-furnace feed; successful deposition of molybdenum and aluminum vapors on copper as a technique for forming high-melting metals into intricate shapes; a new method for extracting pure cadmium from secondary cadmium-zinc alloys by intermetallic formation and vacuum distillation; the production of fine polycrystalline zironia in continuous lengths as a potential high-temperature mineral fiber insulation; a method for casting extremely high-temperature materials; and an electrolytic method for producing uranium from uranium oxide adopted by a major uranium producer.

In mining research new instruments and techniques of instrumentation were developed to obtain reliable measurements of rock properties, rock mechanics phenomena, and factors relating to rock breaking with explosives. By these and other procedures, data needed for engineering applications were generated for all segments of the program. Research to develop means for reducing the hazard from methane outbursts in mines was expanded substantially to include both basic studies on the factors that govern methane occurrence, migration, and emission into mine workings and applied research to test the relative efficiency of presently known degasification techniques.

Research on the mining of minerals from the marine environment was directed to studies and tests of equipment, and employing airlift principles suitable for the recovery of ore deposits from the ocean floor.

In the past year, following reorganization of the Bureau of Mines which established a separate and distinct resources organization, considerable progress was made toward giving more definite scope and character to the resources program. Although it was too soon to observe any great change in the nature of publications issued, a number of projects of a newer type were started, having to do with available reserves, productive potential, future requirements, and general-economic problems of the mineral industries. Policymaking agencies of Government required and were supplied with an increasing number of special reports bearing either on problems of the mineral industry or on other national and international problems in which the mineral industry is a significant factor.

Numerous analyses of the effects of actual or proposed tariff changes were made, and the regular coverage of worldwide mineral-industry developments was considerably expanded.

EXPLANATION OF LANGUAGE CHANGE

The Bureau of Mines recommends that the language "including not to exceed $700,000 for travel and transportation of persons" be deleted from the appropriation text.

Inasmuch as the Bureau has placed increased emphasis on efficient and effective use of funds for travel and transportation of persons and has established controls to that end, it is felt that the restrictive limitation is unnecessary and should be eliminated.

Conservation and development of mineral resources

Appropriation, 1964	$29,404,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	−35,000
Total available, 1964	29,369,000
Appropriation, 1965	30,100,000
Pay cost supplemental	798,000
Total, appropriation, 1965	30,898,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	−7,000
Total available, 1965	30,891,000

SUMMARY OF INCREASES AND DECREASES, 1966

Research:	
Coal: Decrease due to program savings resulting from a reduction of the anthracite research and other coal programs	−180,000
Oil shale: To provide for studies preliminary to a field-test program on in situ retorting of oil shale	+100,000
Metallurgy:	
To provide for research on utilization of scrap materials (junked automobiles)	+320,000
To provide for employee compensation payments	+10,000
Total	+330,000
Mining: To provide for expansion of effort in research on ground support, stabilization, and control in metal, nonmetal, and coal mines, and on rock disintegration	+355,000
Marine mineral mining: To provide for development, testing, and evaluation of instruments and hardware for mining specific ocean mineral deposits	+100,000
Explosives: To provide for a study of the aerodynamics of explosives, and the physical characteristics of various types of ammonium prills	+50,000
Resource development:	
Statistics:	
To provide for automating selected statistical surveys	+200,000
To provide for increased support of cooperative work with State mineral resource agencies	+30,000
Total	+230,000
Bituminous coal: Decrease due to program savings resulting from a reduction of mineral exploration and development operations	−80,000
Anthracite: Decrease due to program savings from termination of final phases of the hydraulic mining studies	−21,000
Petroleum: Decrease due to program savings resulting from reduction of mineral exploration and development operations	−16,000

Conservation and development of mineral resources—Continued

Resource development—Continued

Minerals:	
To provide for the survey and determination of mineral values present in wilderness areas within national forests, as directed by Public Law 88–577	+$120,000
Decrease due to program savings resulting from a reduction in mineral exploration and development operations	−254,000
Total	−134,000
Net increase, 1966	734,000
Budget estimate, 1966	31,625,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers [1]	Amount available
1. Research:					
(a) Coal	$6,222,198	$6,396,000	$153,000		$6,549,000
(b) Petroleum	2,180,022	2,268,000	61,000		2,329,000
(c) Oil shale	873,555	909,000	24,000		933,000
(d) Metallurgy	9,507,224	9,765,000	250,000		10,015,000
(e) Mining	2,556,609	2,738,000	69,000		2,807,000
(f) Marine mineral mining	52,993	131,000	3,000		134,000
(g) Explosives	477,253	493,000	14,000		507,000
2. Resource development:					
(a) Statistics	1,469,824	1,518,000	57,000		1,575,000
(b) Economic analysis	210,278	218,000	8,000		226,000
(c) Bituminous coal	900,925	953,000	25,000		978,000
(d) Anthracite	515,753	416,000	12,000	−$7,000	421,000
(e) Petroleum	538,877	561,000	15,000		576,000
(f) Minerals	3,100,555	3,188,000	90,000		3,278,000
(g) International activities	507,666	546,000	17,000		563,000
Unobligated balance lapsing	255,268				
Total	29,369,000	30,100,000	798,000	−7,000	30,891,000

[1] Represents transfers to General Services Administration unless otherwise footnoted.

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Research:				
(a) Coal	$6,222,198	$6,549,000	$6,369,000	−$180,000
(b) Petroleum	2,180,022	2,329,000	2,329,000	
(c) Oil shale	873,555	933,000	1,033,000	+100,000
(d) Metallurgy	9,507,224	10,015,000	10,345,000	+330,000
(e) Mining	2,556,609	2,807,000	3,162,000	+355,000
(f) Marine mineral mining	52,993	134,000	234,000	+100,000
(g) Explosives	477,253	507,000	557,000	+50,000
2. Resource development:				
(a) Statistics	1,469,824	1,575,000	1,805,000	+230,000
(b) Economic analysis	210,278	226,000	226,000	
(c) Bituminous coal	900,925	978,000	898,000	−80,000
(d) Anthracite	515,753	421,000	400,000	−21,000
(e) Petroleum	538,877	576,000	560,000	−16,000
(f) Minerals	3,100,555	3,278,000	3,144,000	−134,000
(g) International activities	507,666	563,000	563,000	
Unobligated balance lapsing	255,268			
Total	29,369,000	30,891,000	31,625,000	+734,000

I. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Coal	$6,222,198	$6,549,000	$6,369,000	−$180,000

The estimate of $6,369,000 is a decrease of $180,000 due to program savings resulting from a reduction of the anthracite and other coal research programs.

Plan of work.—The funds requested under this program will be used for research conducted by Bureau personnel at Bureau research centers and laboratories. The work will be coordinated with research of other Federal and State government agencies and private industry and some projects may be conducted in cooperation with and partly financed by other Federal Government agencies, States, or private companies. Plans for fiscal year 1966 provide for increased emphasis on those studies that will enhance coal's position in the energy market and expand its use as a raw material source for gaseous and liquid fuels and potentially valuable chemicals, using novel and nonconventional process procedures.

Coal today furnishes more than half of the Nation's electric power and is an important source of industrial process heat. Income received from coal mining and processing provides sustenance to almost 150,000 American families. Our efforts in coal preparation research are directed mainly toward improved applications of mechanical cleaning to avoid loss of product. Even an increase of only 1 percent in recovery of washed coal would represent almost 3 million tons of coal with a value at the mines in excess of $12 million. In combustion research, Bureau research in the past has assisted industry in achieving increased fuel efficiency at electric utility powerplants amounting to about 1 percent per annum. This saving in coal is equal to a monetary saving of about $14 million. Likewise, our turbine program is designed to increase plant efficiency by 5 to 8 percent. If all plants were converted to combined cycle operation using a coal-fired turbine, fuel savings will be in the order of $100 million annually. Impressive advances have been made in the development of satisfactory turbine blades—a heretofore major handicap to the use of coal in turbines.

In general, the manufacture of chemicals and liquid and gaseous fuels from coal are uneconomic under present technology. Our efforts in these research areas are directed toward improved procedures that will result in favorable economic status for coal use in a market that has large tonnage potential. If coal is used to make high-Btu gas and supplied only 10 percent of our present consumption of natural gas, an immediate market for about 100 million tons of coal would become available. The principal program elements for this subactivity are as follows:

Conversion of coal to liquid and gaseous fuels ($1,609,000)

Increased emphasis will be placed on a coordinated investigation of the various methods for producing short-lived, reactive species and of the reaction of coal and its products with these excited species to produce useful fuels and chemicals.

To produce a gaseous fuel of high calorific content, char produced from coal will be hydrogenated and the effluent gas enriched with methane formed through hydrocarbonization of the feed coal. The system will be operated using virtually no external heat.

Exploratory studies will be conducted to determine the feasibility of separation of methane from coke-oven gas, the conversion of coal to liquid fuels by high-pressure hydrogenation, and the production of hydrogen from coke-oven gas.

Further tests will be made in a slagging-type gasifier operating under pressure to gasify raw lignite. Primary emphasis will be directed toward the determination of operational variables and to determine maximum throughputs.

Intensive operation of the large-scale grate-type gas producer will be undertaken using various coals and a variety of operating conditions. Following tests using the grate-type mechanism, conversion to slagging-type operation will be possible.

To permit the use of caking coals as feed material for gasification processes, a number of different systems will be employed to destroy the caking characteristics. Efforts will be directed toward the development of a satisfactory procedure requiring a minimum time for pretreatment and one in which desulfurization of

the coal might become ancillary to the primary objective of eliminating the caking properties of the coal for processing ease.

Studies concerning the production of high-B.t.u. gas from synthesis gas using tube-wall reactors of various lengths and diameters will continue.

Coal preparation, transportation, and storage ($1,730,000)

Evaluation of coal preparation equipment using a suspension of magnetite in water as the separating medium will continue in an effort to provide the coal operator with performance data that will permit him to select the cleaning method best suited to his individual needs. Following the study of performance characteristics of dense-medium washers designed for coarse coal cleaning the dense-medium cyclone washer for cleaning fine coal will be examined.

To provide better control of the froth flotation process, the many dependent variables associated with this type of coal cleaning will be studied using a fully instrumented flotation unit of pilot-plant size. The collected data will be evaluated in a computer with the view toward the development of more efficient froth-flotation procedures.

In the thermal drying of lignite using the pulse-jet system, studies will be made leading toward the development of a satisfactory pulsating combustion chamber using lignite as fuel. Following successful operation of the combustor, the efficiency of the novel dryer will be compared with that obtained using more conventional drying systems.

To provide inexpensive safe storage for lignites, studies will be made of the various factors that lead to spontaneous combustion. With increased knowledge of storage conditions that promote and retard self-heating, long-term storage procedures may be developed that do not require the careful and costly procedure now thought necessary to assure safe storage.

The washability characteristics of the numerous anthracite beds will be evaluated for the purpose of determining the feasibility of mechanical cleaning to upgrade anthracite for use as a special fuel and for other markets requiring an anthracite having a low ash content.

The effects on pressure drop and power requirements of velocity, solid loading, operating pressure, and pipe diameter will be determined while conveying pulverized coal pneumatically in pipes of 2- and 3-inch diameters. This is an extension of previous work using pipes of smaller diameters.

One of the important needs of the steel and chemical industries of the Western States is a cheap source of metallurgical- and chemical-grade coke. As a means for meeting the need, studies will be made of: (1) Use of char and of coaltar pitch as blending materials with western coals to substitute for low- and medium-volatile coals that must be hauled from distant coalfields for incorporating into the mixes going to coke ovens; (2) hot-briquetting techniques for converting poorly coking coals into satisfactory cokes without use of a binding material, and (3) evaluating the potential cokemaking properties of new sources of western coals. Because of the importance of scope of the program, it will be conducted cooperatively among several of the coal research laboratories.

Another major program in carbonization research will be an investigation of means for making coke of optimum quality thereby improving the efficiency of blast-furnace operation. For meeting the goal, study will be made of variables in the coking procedure that affect coke strength.

Processing of tar obtained from the low-temperature carbonization of coal will continue with primary emphasis on development of procedures to upgrade the components in the tar to more valuable products, like electrode binders, resins, alcohols, detergents, and anhydrides. Economic analyses of the various processes will be made to determine which end products should be sought to make the carbonization process more attractive economically.

Study will be continued on the correlation of coke quality or unusual coking behavior of certain coals with the physical and chemical properties of the petrographic components of the coal.

Investigation will continue on a process for making an agglomerated fuel from anthracite as a substitute for the coke from bituminous coal now required in reducing iron ores in blast furnaces. If an economical process can be developed, an important new tonnage market for anthracite should develop.

Use of coal by electric utilities ($1,310,000)

Selected compounds, minerals, coals, and ashes will be injected through gas, oil, and coal flames into an experimental furnace to determine which chemica processes or minerals in the fuel may be causing deposition on the heating surfaces. The deposits will be analyzed and changes in quantity and in physical and chemical properties will be correlated with variations in furnace temperature, gas composi-

tion, and such other variables as are found to be responsible for increased adhesion and corrosiveness of deposits.

Information obtained in experimentation in a bench-size vessel on the effect of pressure on the combustion of coal in a fixed bed will be used as the basis for the design of a larger size unit from which more significant data can be obtained. The data developed in this work could be the basis of a combustion process from which the dust load in the hot gases will be considerably reduced. This would be of great value in many applications.

An investigation will be initiated to obtain data on low-temperature combustion of coal in a fluidized bed. The first phase of the research will be an experimental study on a bench-size jacketed-stainless-steel unit to determine if the capabilities of a fluidized bed for temperature and composition homogeneity are adequate for the control of combustion, and to determine the range of variables over which control is possible.

A pilot-scale facility will be designed for use in investigating the slag formation encountered with the LDC coal-fired gas turbine, and in testing various types of combustion and ash separation equipment. Also, evaluations will be made of various methods for fueling gas turbine with coal and of applications for coal-fired turbines.

As a means for minimizing erosion of the turbine blades, efficiency tests will be made of a pilot-scale electrostatic precipitator for removing the ash from the hot combustion gases prior to entry into the turbine. A correlative investigation also will be made of the application of the electrostatic precipitator for producing corona discharge. Corona may have important use as a means for accelerating conversion of coal gases into useful chemicals.

To define accurately the problems encountered in burning lignite, studies will be conducted on those fuels causing unusual buildup of deposits and on the nature of the deposition itself. Determinations will be made of the physical properties of lignite ash and the relationship of composition of the ash to these properties.

Chemicals from coal, basic research, and special product uses ($1,720,000)

The production of valuable chemicals from coal using argon plasmas containing reactive gases such as methane, nitrogen, carbon dioxide and ammonia will continue.

Based upon the findings of evaluation studies, bench- and pilot-scale investigations will be made to prepare carbon disulfide, carbon black, and hydrogen from coal.

The usefulness of lignite for the production of carbon disulfide, humic acids, and tailored carbons will be explored. If the preliminary economic evaluation indicating the feasibility of producing carbon disulfide from lignite is substantiated, pilot-plant operations will be undertaken to establish optimum operating conditions.

In cooperation with a university, the potential of using fly ash as a soil conditioner will be evaluated for such factors as workability, productivity, resistance to erosion, moisture retention, and other properties that may be imparted to the soil.

An investigation will be made of the technical feasibility and market potential of utilizing fly ash as a source of raw materials, as well as improvements in processing and application of fly ash in established markets.

Work will continue on studies of the properties of lignite with a view toward increasing lignite utilization. The use of lignite or leonardite as a carrier for soil nutrients in the preparation of a coal-based fertilizer will be investigated. A study will be continued of the effects of oxidized lignite on the properties of suspensions of solids in fluids with particular emphasis on possible applications in pipeline transport of coal-water slurries, lining for irrigation canals, and as a flotation agent in mineral dressing.

Novel reactions of coal and some known reactions will continue to be investigated in the light of modern analytical techniques and more extensive theoretical knowledge to evolve products of potential commercial importance. The growth of micro-organisms on coal and its products will be studied as a means of producing products having potential food value.

Basic research.—Fundamental research on coal and its products will be continued using modern physiochemical tools and techniques, including microbiological principles, to develop additional information on the complex physical and chemical structure and reactions of coal essential to the further development of coal technology.

Miscellaneous research.—Continuing efforts will be made in cooperation with national and international standardizing bodies for developing new and improved methods for analyzing and testing coal and coke that will provide analytical data for increased significance.

Work will continue on development of a meter for determining simultaneously the amount of moisture, ash, and sulfur in moving streams of coal, for example, at coal preparation and powerplants. Emphasis will be placed on the ash and sulfur phases of the program since the moisture meter work is virtually completed.

For evaluating the coals used at military and civilian installations of the Federal Government, analytical tests will be made on a continuing basis to assure that the coal meets contract specifications.

1. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(b) Petroleum	$2,180,022	$2,329,000	$2,329,000	----------

The estimate of $2,329,000 is the same as for fiscal year 1965.

Plan of work.—The funds requested will be used for research by Bureau personnel at centers and laboratories in California, Oklahoma, West Virginia, and Wyoming, in oil and gas fields, and at other oil and gas facilities. The work will be conducted in cooperation with, and financially supported by, Federal and State agencies and industry associations.

Studies will continue on the displacement of crude oil from reservoir-rock surfaces. New and improved methods for separating components of crude oils will be developed and applied. Analysis of elements in minerals associated with petroleum will be improved and analyses will be made of oilfield waters and brines. Research on the nature of reservoir rocks and its influence on fluid flows will continue. Experimental work on fluid injectivity into porous rock formations will be initiated, using radioisotopes and neutron activation. Investigations will continue on new applications of radioisotopes on neutron activation in petroleum production and analysis.

Crude oil vaporization as a result of cyclic gas storage and production in semi-depleted oilfields will be determined. The utility of gas tracers in gas-storage operations will be measured. Research on the foam method for removing liquids from gas wells and the alcohol-surfactant method for removing water blocks will be published. Computer programs will be developed for solving fluid-flow problems in oil and gas fields. The effect of clay hydration on gas flow in water-sensitive sands will be reported. An investigation of formation plugging during water injection in oilfields in Illinois, Indiana, and Kentucky will be completed.

Assistance will be given the Navy on an unwanted oil-migration problem in the Elk Hills field of California. A study will be made of the possible use of unmarketable natural gas of high nitrogen content in North Dakota as a pressuring medium to increase oil recoveries. Three reports on the use of electrical, magnetic, and acoustical energy for solving oil-production problems will be made. Petroleum-engineering analyses of Appalachian area reservoirs will foster application of new recovery techniques. A study of barium sulfate scale information in water-flood operations in the Wilmington oilfield will assist the Long Beach, Calif., harbor department.

Crude oil analyses of 235 samples will be made. Determination of the aromatic compounds in the low-boiling portion of 10 crude oils will be completed. Studies of gum formation in gasolines, as related to fuel stability, will be continued. Analyses of 60 distillate blends will be used to develop correlations for predicting fuel characteristics from routine crude oil analyses. Diesel fuels purchased by the Navy will be monitored for storage stability characteristics. Analytical data on all major fuels will be published to show fuel characteristics as marketed. Work will continue on the separation and identification of sulfur and nitrogen compounds in petroleum. Basic studies on asphalts will continue. A study will be made of the stability of fuels proposed for supersonic aircraft under development. The thermodynamics group will provide fundamental data for hydrocarbons and related compounds.

1. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(c) Oil shale	$873,555	$933,000	$1,033,000	+$100,000

The estimate of $1,033,000 is an increase of $100,000 which will enable the Bureau to conduct studies preliminary to a field-test program on in situ retorting of oil shale.

Need for increase.—Recently there has developed an intense interest on the part of U.S. industry in the production of oil from both oil shales and tar sands. U.S. interests are already well underway toward the commercial production of oil from the Alberta tar sands. Since the Bureau has had a fundamental role in the development of the Colorado oil shales which are now being carefully assessed by various commercial interests, it seems logical that programs of this nature should be continued. It is proposed that the increased funding for oil-shale research should be used to begin studies on in situ recovery of oil from oil shales. Work will be directed toward demonstrating the potential and possible resource recoveries that could be expected using in situ methods. These studies should provide answers to the question of how much of our total oil-shale resources can be economically developed.

It is estimated that 60 percent of the costs of oil-shale production is directly attributed to mining, transporting, and preparing the shale for retorting. The potential elimination of these phases of the operation by the use of in situ methods should result in considerable cost reduction of the process. Other advantages of in situ recovery are the lack of any transportation or spent-shale disposal problems. In addition the area to be mined using these methods would have relatively little defacing of the surface which is so often the undesired side effect of many mining systems.

Plan of work.—The funds requested for this subactivity will be used for research and development to be conducted by Bureau personnel at the Laramie, Wyo., Petroleum Research Center and at project sites in Utah, Colorado, and Wyoming.

Information will be developed on the characteristics of the Nation's oil-shale resources, with particular emphasis on the vast deposits of Colorado, Utah, and Wyoming. Research will include work to provide the knowledge of special problems involved in developing effective means of oil-shale retorting and in converting resulting shale oil into fuels and other usable products. The following activities are included in the program:

1. Laboratory analyses of representative samples of domestic oil shales will be made to determine the composition and properties of the samples, and to relate the analyses to the source deposits.

2. Samples from various deposits will be tested to determine shale oil yields on retorting, and will be studied to develop the lithology and stratigraphy of the deposits.

3. Investigations will be made on the physical and chemical properties of oil shale kerogen, the solid organic material that is converted to shale oil in the retorting operation.

4. Studies will be conducted on the reactions that occur in the oil-shale retorting process and on changes in quality and quantity of the produced shale oil that result from variations in retorting methods and conditions.

5. Research will be continued on processes for converting the crude shale oil to high-quality hydrocarbon products and on procedures for removing unwanted sulfur, nitrogen, and oxygen from the shale oil or its products.

6. Shale oil and its various fractions will be reacted with hydrogen to determine the optimum conditions for producing higher qualify, lower boiling fractions, and for stabilizing the highly unsaturated hydrocarbon portions of the oils.

7. Crude shale oil will be evaluated as a potential source of chemical products and of raw materials for chemicals production.

1. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(d) Metallurgy	$9,507,224	$10,015,000	$10,345,000	+$330,000

The estimate of $10,345,000 is an increase of $330,000 consisting of—

(1) An increase of $320,000, substantially all of which, together with approximately $200,000 made available by recessing other investigations, will be used to emphasize research on ferrous-metals scrap problems. A minor amount will be used to simultaneously strengthen research for recovery of nonferrous secondary metals from industrial wastes;

(2) An increase of $10,000, to provide funds to reimburse the employees compensation fund for payments made on account of the injury or death of employees under the jurisdiction of the Bureau of Mines as required in section 209 of Public Law 86-767, over the amount of $12,000 available in 1965.

Need for increase.—Owing to the rapid changes in steelmaking methods during recent years, vast material resources represented by industrial waste, junk, and obsolete goods have gathered in decentralized locations, especially near urban areas. This accumulation has become an acute problem not only from the standpoint of wasting resources but also with respect to the devaluated storage lands and the social aspects of unsightly heaps of junk which mar roadside areas throughout the country. Particular criticism has been leveled at junk automobile yards, although growing concern is being evidenced about better and more complete utilization of all obsolete scrap materials and industrial wastes. The Bureau's metallurgy research program has been realined to allow vigorous and competent search for solutions to these problems of national significance.

Plan of work.—The entire metallurgy research program, summarized in the following eight sections, is directed toward clearly defined objectives and is coordinated closely with investigations of other divisions of the Bureau, other Federal agencies and private industries.

Scrap and waste reclamation

In recent years the national economy has become, more than ever before, critically dependent upon the production of wide variety of metals, alloys, and nonmetallic minerals. The phenomenal accomplishments in all branches of science made in recent decades are conspicuously hinged to concurrent advances in metal extraction, refining, and fabrication, and to the production of suitable nonmetallic materials.

Bureau of Mines research results are credited for a part of these technological strides of the mineral industry. Essential mineral products have been employed in an almost limitless number of scientific applications, from atomic reactor fuels to miniature electronic computers. Each progressive scientific advancement has created additional pressure for development of special materials suitable for use under stringent conditions. Increasing population and the parallel increasing demand for greater amounts of conventional materials have resulted in industrial production rates never before equaled and also have resulted in a proportional depletion of economic-grade mineral resources. An accompanying consequence has been the accumulation of unsightly industrial waste, junk, and obsolete goods, together with their attending social and economic problems.

A prime example is that of junked automobiles. About 5 million tons of iron in old auto bodies and a like amount of tin can waste is cast aside by the American public each year. In addition, the unreclaimed derelict cars have been estimated to contain up to 200,000 tons each of aluminum, lead, and zinc; 800,000 tons of rubber; 70,000 tons of copper; and undetermined amounts of tin, nickel, cobalt, and chromium. From a conservation standpoint, if these materials could be fed back into the commercial stream, it would help to assuage the apparently insatiable demands of a rapidly increasing population and its expanding economy.

The chief factor contributing to today's scrap problem is one of simple economics, triggered by a change in metallurgy technology. Of the annual accumulation of scrap in the United States, 65 percent is in the form of obsolescent con-

sumer goods such as automobiles, refrigerators, and stoves. This material is the most difficult, the most economically unattractive, and the least useful to reclaim. It is a strange and fanciful mixture of metals, plastics, rubber, cloth, glass, and wood. A portion of the nonferrous metals parts and certain specific items like engine blocks, radiators, and fancy hubcaps are valuable enough to warrant the labor involved in dismanteling and sorting. The destiny of the remainder, traditionally, has been shipment to processers who "crunched" it in a huge hydraulic press to form consolidated bales. The baled scrap was sold to the steel producers for addition to the open-hearth furnaces.

But since the mid 1950's a veritable technological revolution has taken place in the domestic steel industry. More and more companies have been adopting one of the basic oxygen processes which are able to produce steel faster and cheaper than other methods—but which use very little scrap. Even many of the old open-hearth furnaces have been fitted with oxygen lances, thereby reducing their need for scrap. In addition, new techniques have been adopted (including some which were originally tried in the Bureau of Mines experimental blast furnace) to increase blast furnace capacity and to create a rising flood of "hot metal" at a price low enough to replace much of the scrap as feed to both the open-hearth and basic oxygen furnaces. As a result, sales of scrap to steel mills have plummeted about 50 percent since 1956. And the steelman's demand is for high-grade scrap, low in alloy constituents and other contaminants. Crunched auto bodies and other low-grade scrap are avoided if possible. In 1956, a 1-ton bale of scrap brought about $43; now it may sell for $20 and customers are scarce. More often than not, an auto wrecker gets less for a hulk at the baling plant than it cost him to get it there. It is easier—and cheaper—to let it rust in a weed-covered lot.

Most dealers in secondary metals have too small an operation and too low a profit margin to attack the problem as individuals. So they have banded together, and through agencies such as the Institute of Scrap, Iron, and Steel, they have sponsored economic studies and research programs directed toward improved methods of collection, separation, and utilization of scrap materials. Two of the larger scrap processors have made significant strides toward physical upgrading of auto scrap with the operation of giant shredders. At best, however, this approach holds only a partial answer. Giant shredding plants can only upgrade that scrap which lies within economic shipping distance. One of the real thorns of the situation is the geographic decentralization of the piles and accumulations that dot the countryside as monuments to an ailing scrap industry.

It has become evident that there is insufficient economic incentive for the private sector of our society to become more deeply involved than it has to date. Yet from the social and conservation standpoint, waste materials must be reclaimed. So the Bureau of Mines has accepted the job that is today's greatest single challenge to ingenuity and engineering ability. The Bureau is well suited for the task. It has a basic responsibility for wise utilization of the Nation's mineral resources; it has research capabilities suitable for every type of mechanical, chemical, or metallurgical processing.

Beginning in fiscal year 1966, more than one-half million dollars of the Bureau's metallurgy research program will be directed toward problems of waste mineral materials. The immediate problem of ferrous scrap reclamation will be attacked by (1) improvement and development of economic processing methods and (2) determination of direct uses for these discarded materials.

Although immediate emphasis will be placed upon the initiation of a ferrous scrap reclamation program, investigations concerning secondary nonferrous material, a program that has been in progress several years, chiefly at the College Park Metallurgy Research Center, will be continued at approximately the present level of funding. Thus, the fiscal 1966 program will encompass a broad scope of metallic scrap reclamation.

Long-range plans envision the possibility of broadening the program to include studies for development of more efficient, safer methods for recovering not only metal but also nonmetal materials from building demolition operations; and the development of economic methods to remove metallic salts from liquid wastes discharged by electroplating, smelting, or other industrial plants. The Bureau can thus assume its full share of the responsibility for the social and environmental problems attendant with processing and utilization of minerals.

Mineral processing ($1,100,000)

Minerals beneficiation, essentially a preprocessing step by which low-grade or worthless aggregate materials are separated from included valuable constituents, is often the key with which worthless deposits are converted to valuable resources.

Bureau of Mines mineral processing studies have two prime objectives. First, concentration methods are devised or adapted to allow immediate exploitation of domestic mineral deposits. A kyanite plant and several mica processing plants, erected within the last 2 years and based upon results of Bureau research, bear witness to the program. The second objective is to develop or improve techniques that will allow recovery of metals from low-grade materials which cannot be treated economically by present methods but which, in the aggregate, contain significant amounts of metal.

To meet these objectives, research for the recovery of iron from low-grade ores will continue at the current scale ($500,000). Work on the Bureau process for extracting valuable phosphates from complex, formerly valueless resources, will be completed with pilot tests to prove economic feasibility. Other projects will concern more efficient combinations and applications of new and conventional methods for processing marginal ores of beryllium, titanium, columbium, and other important metals for which growing demand is forecast.

Pyrometallurgy ($2,623,000)

The production of nearly all of the common metals and many other metals and nonmetal materials has been possible primarily by exploiting the science of high-temperature reactions—temperatures where molten metal and mineral components may become as liquid as water or, in some cases, transformed into white hot vapors. Any significant advance in related economics and technology can occur only through a concerted effort to push the development of new and more efficient processes or to improve methods in current use. The need to attack the problem from every open avenue has been stated above, and the record shows that the potential for successful research in Bureau of Mines laboratories is unusually high.

High-temperature processes, currently used to extract and refine iron, copper lead, tin, and other metals of major importance, will be used to attack the relentless buildup of waste and scrap materials ($500,000).

Particular attention will be given the types of scrap generated in urban areas where accumulation is becoming a matter of wide public concern. Research to increase the efficiency of iron blast furnaces will continue, with the cooperation of the principal steel producers, as a major project ($650,000). Other projects will include investigations designed to improve the efficiency and range of application of pyrometallurgical processes for extracting metals from low-grade and complex ores and concentrates.

Hydrometallurgy ($1,400,000)

Development of new solution treatment and recovery methods, and modification of existing ones, to produce the pure chemical compounds required for the expanding national economy, will continue to be a major portion of the Bureau's metallurgy program. The program is designed to steadily combat the general shortage of high-grade raw materials through the development of economic processes to permit utilization of lower grade mineral deposits. To obtain better and more dependable economic and technical advice for future research planning of projects, extensive economic evaluation studies of various processes developed by laboratory investigations will be made as an integral part of the research. Various base metal ores and concentrates not now economically amenable to conventional smelting and refining technology will be targets for process development. Separation and recovery of metals from ores by solvent extraction techniques will continue to draw attention of research scientists, with special attention directed to reducing cost of the technique. Bacterial metallurgy, recently found by commercial testing to be effective in recovering copper from waste ores, will be supplied to other useless industrial waste products in which the valuable metallic components now are lost. Other investigations will include explorations to evaluate the possibility of recovery of rare or less common metals from saline brines; recovery of phosphorus, vanadium and chromium from waste ferrophosphorus; and recovery of molybdenum and associated rhenium from copper concentrates and low-grade mill products.

Electrometallurgy ($1,300,000)

The objective of the Bureau's electrometallurgy efforts are in part to develop new economical processes for making available to the domestic industry high-purity metals and alloys that are currently expensive to prepare in a useful form. Normally combined constituents are separated into individual species by passing an electric current through a solution or molten electrolyte containing the dissolved components. The desired metal is deposited at one electrode. As a recognized

world leader in fused-salt electrolysis, the Bureau is exploiting these methods as a major element of the metallurgy research program. Such methods provide promising prospects for fulfilling the space-age demands for super-pure and refractory metals and alloys that will stand drastic conditions. Very recently Climax Molybdenum Corp. announced they were expanding to pilot plant scale the Bureau's fused-salt electrolytic process for making high-purity molybdenum and tungsten metals. The Mallinkrodt Chemical Co., operating under an AEC contract, has begun production of uranium metal by an electrolytic process which was based upon Bureau of Mines past research developments. This same Bureau process is also being seriously considered by the British Atomic Energy Authority as a replacement for their more expensive uranium production method.

Projects will include the development of low-temperature molten-salt electrolytic methods for extracting (electrowinning) pure chromium from domestic chromite minerals and ferrochromium materials. The methods will be extended to produce high-purity metals including hafnium, beryllium, columbium, molybdenum, neodymium, and praseodymium from chlorides and oxides of the metals. Investigations will continue on a process for electrolytically producing alloys of thorium and other refractory metals. Other projects will concern the production of exceedingly pure metals (electrorefining) from crude metal and commercial high-temperature metal scrap. Investigations will be continued to electroplate oxidation-resistant coatings on steel and other heat-resistant structural metals. In general, the Bureau will continue to explore both the fundamentals and the practical applicability of electrolytic methods for separating multicomponent systems.

Physical chemistry ($2,000,000)

Successful development of any new metallurgical process depends directly and heavily on complete and precise physical-chemical data to predict the probability of proposed reactions, degree of completion, and quality of products. These data are guidelines to orderly and practicable scientific progress and they indicate technical feasibility of proposed processes and procedures.

A firm effort will center on developing more useful data on phase equilibrium systems, thermodynamic properties, and reaction kinetics for pertinent materials. Studies will span the temperature range from cryogenic (supercold) regions to plasma arcs (superhot); the range of other variables will be equally extensive. Major projects will include measurement of vapor pressures and activities of selected metals, alloys, and metal halide systems. Also included will be new and revealing methods for measuring oxidation rates of metals and alloys. Precise measurements of the physical and electrical properties of rare-earth and other metallic oxides will be continued to establish their suitability for use as high-temperature refractory and insulation materials.

Physical metallurgy ($1,900,000)

The development of new or improved materials of superior properties for use in industrial and defense applications is an integral part of the research program. New high-strength metals, alloys, ceramics, or special coatings which resist extreme temperatures are needed both for jet and rocket engine uses and for industrial turbines, heat exchangers, communications components, and transportation equipment. The ultimate value of any material (ceramic, metal, or alloy) for any specific use is best established through a planned series of precise physical measurements to prove the suitability of the material in question for qualities such as hardness and strength in various environments and to determine ease of welding, casting, and bending. No research involving the development and practical production of structural materials is complete without systematic comprehesnive study relating directly to proposed applications. The physical metallurgy research program is alined to these concepts.

Research will continue to develop and test materials with superior properties including strength, formability, oxidation resistance, and toughness. A concerted effort will be devoted to high-energy rate forming and other new shaping methods for alloys and nonmetallics; casting and uniting high-temperature metals, alloys and ceramic shapes; and development of superstrength steels. A parallel effort will be directed to the development and testing of formed ceramic materials and special alloys for extreme environmental applications. Products of other research projects will also be evaluated through physical tests. Included are the thorium-lead and thorium-tin alloys produced by fused-salt electrolysis research and the ultrafine, ultrapure, tungsten powders produced by hydrogen reduction of either tungsten hexachlorides or tungstic oxide.

1. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(e) Mining	$2,556,609	$2,807,000	$3,162,000	+$355,000

The estimate of $3,162,000 is an increase of $355,000 for expansion of critically needed studies of rockbursts in deep mines and for an increase of effort in corollary research on rock pressures, rock disintegration, ground support, and stabilization and control in metal, nonmetal, and coal mines.

Need for increase.—The segment of the mineral industry concerned with extracting minerals from the earth's crust is faced with the need to produce, at no real increase in costs, greater quantities of minerals despite pressures from rising costs, greater mining depths, decreasing ore quality, and a growing public demand that all the physical and cultural resources of the land surface areas be preserved. These economic, physical, and social pressures are now more critically affecting mining than ever before. A more vigorous, aggressive national program of scientific research is needed to provide the prerequisite knowledge as a basis for an improved mining technology so that an adequate production of minerals may be continued with minimum deleterious effects on other uses of the land.

The Bureau of Mines, as the only Federal agency responsible for mining technology as such, began 5 years ago to regenerate and broaden mining research capabilities and to develop the comprehensive balanced program of basic and applied scientific research required to meet this need. In fiscal year 1963 the mining research program was expanded and strengthened. This was accomplished by initiating a number of carefully selected long-range fundamental studies of mine rock behavior and by increasing the effort in certain areas of short-range applied research on technologic problems critical to the mining industry. A second step toward strengthening the program and improving efficiency was completed last year. In this step the Bureau coal mining research was combined with minerals and metals mining research into one organizational unit. Thus, the capabilities and technologic advances developed by research in one commodity area are immediately available for application to parallel problems of the other commodity areas.

The increase will be used principally to strengthen those parts of the program concerned with rock breaking and ground stabilization and control. This new work will include extension of applied rock mechanics studies into coal mines to develop the engineering principles required for safe economic physical design of modern coal mining systems, engineering application of the results of previous rock mechanics studies in underground metal mines, and increased effort on fundamental studies concerned with the nature and behavior of rock and rock masses with relation to the mining process. This work is important not only for improving the economics and safety of mining but also for developing mining methods and techniques that will permit extraction of the maximum amount of vitally needed mineral and mineral solid fuel raw materials with minimum effect on the valuable land surface.

The increase requested will permit another step in the Bureau's plan for orderly growth of the mining research program to the level required to meet the Nation's needs. It is anticipated that the present growth phase will be completed by fiscal year 1970.

Plan of work.—In 1966 the work will include both short-range research to improve present technology and longer range fundamental studies which experience in other fields has shown to be a prolific source of major technologic breakthroughs. The research will be conducted both in Bureau laboratories and in operating mines, in cooperation with mining companies. The work will be coordinated with related research of other Federal and State agencies, universities, and private industry. Bureau capabilities in rock mechanics and other specialized disciplines will be made available, as they have in the past, to other Government agencies. The primary areas of research are described in the following paragraphs:

Ground stabilization and control ($1,106,000)

The proportion of valuable mineral that can be recovered from any given deposit, the safety of the workmen, the effect on the land surface and, in many cases, the cost of mining depend on the adequacy of ground support and control technology.

In fiscal year 1966 research on ground control in mines using the block-caving method, presently the most economical system for underground mining of large massive deposits of copper, iron, molybdenum, etc., will be reoriented to include an applied engineering study to test development-opening design hypotheses developed as a result of rock mechanics studies conducted during the past several years in mines in Arizona, Colorado, Pennsylvania, and Michigan.

Research related to strata control during mining will include laboratory studies of the time-dependent mechanical properties of plastic and viscoelastic materials and their correlation with the in situ stress-strain characteristics of the rock as determined in the mines.

Research to develop instrumentation for measuring rock stresses through deep vertical drill holes will be carried forward. A field test is scheduled for completion late in fiscal year 1965, and additional tests are planned for fiscal year 1966. This work is being conducted in cooperation with a private company, which is bearing a substantial share of the cost. The Bureau will develop the instrumentation and technique, and the company will provide the drilling equipment and drill the deep vertical holes.

Research and development in the field of artificial supports for underground openings, to be expanded slightly in fiscal year 1966, will include investigations of hydraulic backfill, distributed load-support systems, concrete, timber, and other support materials, fundamentals of rockbolting, and studies of rock pressures in deep mines as a prerequisite for developing techniques to predict the loads artificial supports must be designed to withstand. An expanded emphasis will be placed on a corollary study concerned with rockbursts. Rockbursts are now seriously hindering operations in deep silver-producing and other deep mines in northern Idaho. Rockbursts will also have an increasing adverse effect on production in other areas as mines get deeper.

Moderately increased emphasis will be given to open pit mine slope stability research. The program includes laboratory studies of model slopes; in-place measurement of strains in the walls of active open pit mines in Nevada, Montana, and possibly Arizona and New Mexico, to determine the stress distribution in the slopes relative to slope configuration and geologic character; development of devices for automatic warning of imminent slope failure; and a case history study of example rock slopes. The case history study will be completed in fiscal year 1966.

Rock mechanics studies in coal mines, initiated on a small scale in fiscal year 1965, will be expanded. The objective of this work is to determine the distribution and redistribution during mining of the forces acting on the coal and its enclosing rocks to provide a basis for safer, more efficient design of coal mine openings and mining systems. Both long-wall and room and pillar mining will be studied in flat and inclined coal seams. A complementary study of artificial support systems for pitching seams also will be started.

Fundamental aspects of mine rock behavior ($395,000)

Basic research in rock physics and the physics of earth structures will be strengthened, in part through redirection of effort previously employed on studies to be completed in fiscal year 1965. One new investigation will use statistical techniques to study the relationship of large-scale rock structural features to the smaller scale physical characteristics that determine the strength and other engineering properites of the rock masses that make up and enclose mineral deposits. Another new study will be concerned with the development of seismic model techniques for studying, in the laboratory, complex features of mineral deposits that now require expensive time-consuming field investigation. Physics of earth structures research also will include laboratory study of the relationship of fractures and jointing to the sheer strength of rock masses; development of geophysical techniques and instruments for measuing in-place properties of rock structures; photoelastic stress analysis of models prepared to simulate typical nonhomogeneous rock masses in which mineral deposits occur; and study of time-mechanical property relationships that reflect realistic mining conditions.

Rock physics research involves studies of the nature and properites of the mineral particles that make up rock, the bond between them with relation to rock strength and behavior, and mechanisms of rock failure under various condi-

tions of environment and energy application. The investigation of anisotropism in mine rock on a petrographic scale and the study of the effect of environment on the mechanical properties of rock are scheduled for completion in fiscal year 1965. This effort will be redirected toward studies of the effect of stress on rock properties and the effect of stress on rock microstructure. Basic studies on the rheological properties of the clays that are sometimes encountered during mining of bauxite, coal, and many other minerals, and that cause mine floor heaves, clay squeezes, and subsidence will be carried forward.

Rock disintegration ($822,000)

Rock breaking is, in a great many mining operations (e.g., the Minnesota and Michigan taconites), the most costly element of the mining process. Furthermore, the method of breaking often aggravates the problems of ground stabilization and control. Advances in the technology of rock breaking, therefore, can result in substantial improvements in the economics and safety of mining operations.

Blasting research will be expanded by starting a new project to determine the dynamic equation of state of a variety of rocks in order to more fully understand the mechanisms involved in breaking rock with explosives. Studies of vibrations from underground blasting, the development of model techniques for the study of blasting phenomena, and investigation of the effect of small-scale geologic features on the transmission of energy from a blast will be continued.

Thermal fragmentation research will involve investigation of the use of thermal shock for secondary breaking and the determination of thermophysical properties of rocks to provide a basis for prediction the response of rocks to the application of heat.

Other research to develop new, faster, and more efficient methods for breaking rock, through the application of energy from sources not now used in mining, will continue studies of the electrohydraulic effect, dielectric and induction heating, and chemical weakening of rock intercrystalline bonds. A basic study of the role of friction with relation to mechanical fragmentation will be started.

Rock drilling research will include basic studies of energy transfer and rock failure mechanisms related to mechanical drilling and applied investigations to develop empirical rock drillability indexes for use in predicting drill efficiency and drilling cost for any mining or construction job. Work on a drillability index for rotary drilling is scheduled for completion in fiscal year 1965, which will permit increased emphasis on development of a similar index for the more complex case of percussive drilling. This work will be supported in part by the Army research office under a cooperative agreement.

Hydraulic mining studies, previously confined to coal mining, will be expanded modestly to provide for a laboratory study on the application of this potentially promising mining technique to minerals other than coal. Field trials of hydraulic coal mining will be carried forward in a Colorado coal mine in conjunction with a ground stabilization and control study of inclined longwall mining.

Materials handling ($80,000)

Materials handling, including the loading and transfer of ore, waste, materials, and supplies in the mine, is a major cost item in any mining operation. Bureau mining research in this area has been limited to studies on hydraulic transportation of coarse coal. In fiscal year 1966 the coal investigation will be completed and the study extended to the hydraulic transportation of other minerals.

Mining engineering ($253,000)

Mining engineering research is concerned with the development of engineering techniques which utilize the tools provided by the rapidly advancing field of modern mathematics, including statistical mathematics and high speed electronic computers, for application to the problems of mining. Declining ore grades, greater depth of operation, and increasingly adverse physical situations have reduced profit margins to the point where precise engineering in the evaluation of mineral deposits and design of complex mining operations is of paramount importance. The successful evolvement of computer techniques to firmly establish the possible profitability of mining very low grade precious metal deposits, currently considered unprofitable, could encourage the initiation of mining ventures that could increase the production of silver by a significant amount.

Mining system design, analysis, and evaluation investigations will involve the development of empirical mathematical models of various mining systems and their components for use in determining in advance the most applicable mining method for any given mineral deposit and physical situation and maintaining optimum efficiency during mining of the deposit. The models will be tested on

actual and simulated deposits of copper, molybdenum, uranium, and oil shale, but their use will not be limited to deposits of these commodities.

A special study, pioneered in fiscal year 1965, will receive increased emphasis in fiscal year 1966. The objective of this work is to develop engineering techniques for measuring and describing mineral occurrences in such a way that the data, in the aggregate, are amenable to mathematical manipulation using advanced mathematics and computer techniques. If successful, this work will make it possible to express the mineral potential of the United States in terms of a mathematical model, which, when subjected to modern computer methods of analysis, analysis, will be a powerful tool for national planning.

Environmental control ($506,000)

Mine hydrology research, involving basic studies of the physical factors that affect the flow of water into mines so as to provide data for predicting, in advance of development, the amount of water that a mining operation will have to handle, and for designing water control measures will be continued. A laboratory study concerned with the development of techniques for measuring micropermeability of rocks is scheduled for completion in fiscal year 1965, and the effort will be redirected toward determining the effect of stress on rock permeability. Applied research to develop improved means for control of water inflow into mines will be carried forward.

Research to develop better methods for combating stream pollution from acid-water mine drainage will be continued. The work will be closely coordinated with the engineering study of acid mine drainage initiated in fiscal year 1964 and conducted cooperatively by the Department of Health, Education, and Welfare; the Bureau of Mines; the Geological Survey; and the Bureau of Sport Fisheries and Wildlife. The purpose of the engineering study is to demonstrate and evaluate presently known methods of acid mine water abatement. Bureau of Mines research has as its objective the development of better, cheaper methods than those presently available. The work will include basic studies of the chemistry and mechanics of acid formation in coal and its enclosing rocks, applied studies in drainage control, and improved techniques for mine sealing. The mine hydrology studies described above also will contribute to the acid mine water program.

Preliminary studies will be initiated on the problems of noise abatement in coal mining, a subject of increasing concern to coal mine operators and workmen. Excessive noise can not only cause permanent hearing impairment but also increases the hazard and decreases production efficiency because of difficulties in communication between workmen. Reseach capability to conduct this work is available in the Bureau as a result of previously completed research on abatement of noise from compressed air machines in metal mines.

Research on drainage of methane from coal beds prior to mining, which was expanded substantially in fiscal year 1965 will be carried forward. The work will include continuation of investigations to determine the structural features that control the presence of methane in coal beds to provide a basis for predicting where and in what quantities methane will be encountered during mining; studies of the physical constants of coal and their relation to the formation, confinement, migration, and emission of methane; and field trials of presently practical methods of coal bed degasification such as methane removal through bleeder drill holes by natural drainage, water infusion (already utilized effectively in coal mines in West Virginia and Pennsylvania), or vacuum exhaust. The studies will be coordinated with those of the health and safety activity concerned with methane monitoring and float coal dust control.

1. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(f) Marine mineral mining	$52,993	$134,000	$234,000	+$100,000

The estimate of $234,000 is an increase of $100,000 for expansion of materials-handling research to consider problems and potential of transport systems to move rock from the ocean floor under varying environmental conditions.

Need for increase.—The increased funds are needed to advance from the present modest program at the facility at Tiburon, Calif., to develop instruments and equipment for mining specific ocean bottom mineral deposits. As the Government will receive bonuses and royalties on offshore mineral leases, just as in the leasing of offshore petroleum deposits, it is only reasonable that Government should assist and cooperate with industry in developing the sea's mineral productivity. Industry, in fact, is actively supporting and cooperating with the Bureau in its marine mineral technology research. For example, funds are being provided by the Lockheed Missiles & Space Co. and by the International Minerals & Chemical Corp. to help the Bureau establish the proper base for its research on production and utilization of ocean mineral resources. Other firms, institutions, and local governments have expressed publicly their support of this effort.

The program proposed by the Bureau will provide the Nation with know-how in the field of underwater mining; improve the relative position of the United States in this new and fast-developing branch of mineral technology; determine the economics of the known occurrences; assist in the establishment of a marine-mining industry; and help to swell the revenues from the leasing of these as yet little-known parts of the public domain.

About a third of the increase will be applied to salaries of Bureau research employees; the remainder will be used largely for supplies, materials, and technical services required for the origination, preparation, and testing of systems.

Plan of work.—The program calls for the conception, development, testing, and evaluation of instruments and hardware for mining specific ocean mineral deposits. It will be restricted in 1966 to research on materials-handling systems for deposits on the Continental Shelf off the coasts of California, Oregon, and Washington in water depths of as much as 600 feet. Hydraulic and pneumatic production procedures will be studied and mechanical equipment designed. The scale model of a recovery device will be prepared for tank testing and evaluation, and construction will be undertaken of a prototype for field study. Sea-floor mineral deposits are of various physical characteristics and occur under different conditions of water depth and sea-bottom topography. Accordingly, for each commodity the problems of development and mining are manifold, comprehensive, and often unique.

1. RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(g) Explosives	$477,253	$507,000	$557,000	+$50,000

The estimate of $557,000 is an increase of $50,000 to carry out additional studies on the hazards of explosive systems.

Need for increase.—The increase requested for fiscal year 1966 provides for the initiation of a study on the aerodynamics of explosions such as those which take place when a weak gas explosion initiates a much more violent explosion by reaction with float coal dust. While this project is a major interest to the coal-mining industry, the basic data obtained will provide information on the initiation and propagation of explosions in atmospheres containing flammable concentrations of gasses, vapors, or dusts. The soaring frequency of major disasters, involving loss of life and multimillion-dollar loss of natural resources, accentuates the need for this information.

Plan of work.—Funds requested for explosives and explosions research will be used for research and development with Bureau personnel at the Explosives Research Center, Pittsburgh, Pa. This research program is a part of a continuing program of fundamental and applied research involving: (1) The development of safer explosives for use in underground coal mines and in other underground operations where a gas and/or dust explosion hazard may exist; (2) the safety and performance characteristics of commercial explosives and blasting agents with particular reference to the recently developed slurry explosives; (3) approval testing and monitoring of explosives of commerce and related items to determine their conformance to safety standards prescribed in public schedules; (4) factors pertinent to the reduction of fires and explosions in industries producing, transporting, or utilizing the mineral fuels and their products. The program will be

closely coordinated with related research supported by other governmental agencies and industry.

In explosives and explosions research, the proposed program will provide for a minimum attack on the most urgent of the presently known problems. The Bureau of Mines, as the only Federal agency authorized by Congress to investigate commercial explosives, has the responsibility of providing industry and other governmental organizations with information on the safe handling and utilization of approximately 1½ billion pounds per year of these potentially hazardous materials. The rapid change in explosives technology during the last 6 or 8 years from a dependence upon fixed high explosives (dynamites) to low-cost blasting agents based on fertilizer-grade ammonium nitrate has made it necessary for the Bureau of reorient much of its research efforts in this field toward a better understanding of the nature and hazards of these new industrial products and methods.

Today, over 60 percent of all blasting done in the United States is done using blasting agents virtually unknown 10 years ago and the mineral and mineral fuels industries look to the Bureau for guidance and means for the safe and efficient utilization of explosives. Likewise, the chemical, petrochemical, and petroleum industries are developing new methods, and new potentially hazardous materials, much more rapidly than information on their safety can be developed. Despite its spectacular industrial development, the United States has the highest per capita fire loss in the world. Much of this almost $2 billion per year loss of natural resources is preventable. It is estimated that industry alone suffers losses in excess of $350 million per year. The Bureau's proposed program envisions a proportionate increase in the attack on these problems through basic and applied research.

The relatively widespread use of blasting agents based on ammonium nitrate and combustible materials has created a myriad of new safety problems. For the most part, problems associated with the production and use of ammonium nitrate fuel oil (AN–FO) blasting agents in open pit, quarry, and construction blasting have been solved. However, widespread use of this blasting agent in underground use has produced a wide range of new problems, only a few of which have been solved to date.

A rapidly developing problem involves the use of so-called slurry explosives for blasting operations in hard rock or where water is present. Little basic information regarding the characteristics and safety of this new explosive agent is presently available. Basic and applied research on this problem has been started and will be actively continued through fiscal year 1966. An expanded research effort is proposed on the consequences of the ignition of layered (stratified) flammable gases, particularly as this applies to coal mine explosions. The aerodynamics of underground explosions and the reaction of coal (float) dust to weak explosions will be initiated in 1966. The present phase of the research on the incendivity of permissible explosives to hybrid combustible gas-coal dust-air mixtures should be essentially completed in 1966.

Increasing emphasis will be placed on research leading to an improved understanding of mechanisms of initiation of violent deflagrations or detonations in reactive, solid, liquid, or gaseous systems. New means of evaluating these hazards are badly needed as well as improved methods of relating results to the probability of a disastrous explosion during manufacture, storage, or use of such systems.

The increasing loss of natural resources through unwanted fires and explosions emphasizes the need for research on the causes and methods of preventing such disasters. Within the limitation of funds, emphasis will be placed on the hazards of flammable, gaseous systems, particularly as related to means whereby deflagrative processes evolve into violent explosions. This program is directly related to the rapid development of new and more reactive flammables which present an ever-increasing hazard to workers and the general public.

Long-range, basic investigations will be continued on: incendivity of explosives to flammable gas-air mixtures; direct initiation of detonation in flammable gas-air mixtures; development of test procedures which will predict more definitively the hazard potential of various explosive materials; and the hazards of ammonium nitrate under fire conditions.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Statistics	$1,469,824	$1,575,000	$1,805,000	+$230,000

The estimate of $1,805,000 is an increase of $230,000 consisting of (1) $200,000 to provide for automating selected statistical surveys, and (2) $30,000 to provide for increased support of cooperative work with State mineral resource agencies.

Need for increase.—Within the next few years it is planned to automate electronically many of the Bureau's mineral surveys, almost all of which are now manually processed. Systems analysis will count for a substantial part of the needed increase. A thorough review of each survey is essential to establish its purpose and necessity as a whole and also item by item; to analyze collecting and processing procedures and recommend desirable changes; and, finally, to design an improved system for each survey. Except for systems analyses made in fiscal year 1965 by a small branch staff, almost all of the electronic data processing work discussed in this statement will represent pioneer work to expedite the processing of the Bureau's surveys. The relatively small amount of work already performed by the Bureau indicates that electronic processing results in speedier production of more accurate data. It is confidently expected that further progress in this direction will result in greatly improved statistical production. New personnel will be required for these operations. Part of the increase is for computer programing, which follows systems analysis and design and assures the most economical use of computer time and peripheral equipment and services. While present statistical obligations are being met, prospective savings in future years cannot be realized without additional funds during the transition for automation of processing. The present statistical output will eventually be achieved more efficiently only if an initial investment of adequate funds for systems analyses and computer programing is made.

Plan to work.—The Bureau will continue to discharge its responsibility for the planning, programing, and conduct of its mineral statistical programs and systems, including the preparation for publication of all statistics relating to mineral resource development.

Most of the funds will be expended as usual for the continued collection and compilation of basic data on minerals and fuels by means of approximately 300 surveys.

The Bureau will continue to publish the results of those surveys in the Minerals Yearbook as the authoritative record of the mineral industries. In accordance with usual practice, more frequent and more timely reports on mineral production and consumption will be issued for the use of the press, for professional and technical publications, and for industry and industrial associations as required. The U.S. Government, State and local governments, and industry all depend on the Bureau of Mines as the major and sometimes the sole, source of information on the minerals segment of the American economy.

In line with Bureau policy to maintain close cooperation with the States, minerals production data will continue to be collected and edited in eight area offices. Most of the States are now cooperating with the Bureau of Mines in minimizing reporting burdens on the respondent, and it is planned to expand cooperation on the solution of problems relating to utilization and development of mineral resources. Some of the increase in funds will be used for more frequent consultation on statistical aspects of minerals studies as well as continuing seminars to develop field staff capabilities in the development and application of statistical techniques to resolve minerals problems.

Work plans also include provision for systems analyses of several surveys and for computer programing after feasibility studies have indicated a potential for substantial benefits from computerization. This aspect of modernizing the data collection and processing program will be accomplished through the increase of funds.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(b) Economic analysis	$210,278	$226,000	$226,000	----------

The estimate of $226,000 is the same as for 1965.

Plan of work.—The funds requested for this subactivity will be used for the conduct of mineral economic research, and to provide economic advice on the implications of proposals in the field of mineral economics. The latter will include special studies on the ramifications of proposed actions and policies, analysis of pending legislation and Area Redevelopment Administration projects, as well as studies of proposed actions and negotiations under GATT and other international organizations. It will also include staff advice concerning mineral supplies, and overall mineral resources program of the Bureau of Mines.

The research studies will be aimed toward improving our understanding of the workings of the mineral economy and the factors affecting it. Major areas of investigation will include.—

1. Studies of the impact of the mineral industries on regional patterns of growth and development.
2. Application of econometrics to determine mineral supply and demand functions, and preparation of continuous up-to-date short- and mid-term forecasts of consumptions, supply, and price.
3. Investigations of the energy economy with special emphasis on energy flows and patterns of substitution.
4. Studies of mineral commodities, both domestic and worldwide, concerning such things as movement patterns, general economics, and costs.
5. Studies of the structure and impact of tax systems on the mineral industry.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(c) Bituminous coal	$900,925	$978,000	$898,000	−$80,000

The estimate of $898,000 is a decrease of $80,000 resulting from a reduction in coal resource field investigations.

Plan of work.—In keeping with the steadily increasing national demands for energy, which are expected to continue upward for the foreseeable future, the coal resources program will include the assembly and reporting of comprehensive information relating to coal's problems and prospects in the heavily changing patterns of energy consumption that are predicted as a result of the stepped up availability of nuclear energy and the resultant intesnsification of competition among other energy sources. Coal's position in the energy market, internationally, nationally, and locally, and the well-being of those economic interests related to coal, will depend almost entirely on its competitive capabilities. These, in turn, will be determined substantially by the efficiencies of its production, distribution, and utilization.

Of major interest will be verification of the economic availability of coal reserves in widely separated areas of the Nation, and of widely differing physical attributes such as quality and geologic characteristics as they affect costs of production, transportation, and consumption. The need for such verification as it relates to the availability of coal for future electric power generation was emphasized in the recently issued National Power Survey of the Federal Power Commission. A similar need was expressed in the Nathan report on the potentials for increased U.S. coal exports. A preliminary report on coal availabilities in general, to be completed in fiscal year 1965, will serve as a basis for determining the nature and

extent of further studies of economic coal availabilities for all purposes within funding and time limitations available.

Other activities to further the interests of coal in its emergence from the regressive trend of the past decade, and to advance its position in the national economy, will include studies directed toward reductions in mining costs; increasing efficiencies in coal transportation; shifts in patterns of coal distribution; factors in the international energy market that affect U.S. coal exports and the international balance of payments; and expansion of essential data on coal consumption, marketing, and trade, particularly with regard to regional analyses and competitive factors.

Investigations and studies will be made of coal utilization practices, including types of coal and combustion methods, to promote increased efficiencies in fuel energy utilization through the development of new and modified techniques of coal preparation and burning equipment.

Surveillance will be maintained of commercial, industrial, and consumer needs pertinent to the reserves, production, distribution, and utilization of coal and related products; engineering, technical, and related economic studies will be conducted pertaining to mining operations, consumption, and other coal-related problems and, as appropriate, recommendations will be made for technological research based thereon.

Upon request, and supplementing other analyses pertaining to coal and coal utilization factors, technical information and advice will be given other Federal agencies, and investigative tests will be conducted on Federal heating and powerplant equipment to establish information to effect efficient operation or to ascertain if contractual obligations of Government purchases are fulfilled by the contractors. In addition, assistance will be given on fuel combustion and ash deposition problems, fuel selection, equipment maintenance, and comparative fuel cost studies.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−) 1966 compared with 1965
(*d*) Anthracite	$515,753	$421,000	$400,000	−$21,000

The estimate of $400,000 is a decrease of $21,000 due to program savings resulting from the termination of the final phase of hydraulic mining studies.

Plan of work.—The resource and development programs on Pennsylvania anthracite for which funds are requested for fiscal year 1966 include measures to conserve anthracite resources, protect mine employment through mine water control measures, foster public health and safety by preventing surface subsidence, restore surface-mined areas, control underground mine fires, microfilm mine maps with related data, and conduct resource studies designed to stimulate the production and economic development of the producing region. In general the anthracite resource programs are conducted in cooperation with the Commonwealth of Pennsylvania, local municipalities, civic groups, other Federal agencies, and private industry. The principal items under the program follow.

Drainage and subsidence control

The Anthracite Mine Water Control Act of July 15, 1955 (Public Law 162, 84th Cong., 69 Stat. 352, 30 U.S.C., 571–576), as amended by the act of October 15, 1962 (Public Law 87–918, 76 Stat. 934), provides for the control and drainage of water in the anthracite formations and for filling voids in abandoned coal mines in the interest of public health and safety. The Secretary of the Interior is authorized to contribute not more than $8,500,000 to the Commonwealth of Pennsylvania, on a matching fund basis, to implement the purposes of the act. This subactivity covers program administration, including contractual arrangements, inspections, fiscal reporting, negotiation of cooperative agreements, and such liaison with the Commonwealth, local government agencies, civic groups, and industry as required to discharge the Federal Government's obligations under the program. Projects in the field of conservation include surface drainage works to prevent water from entering and flooding the mines, where it becomes acid, and the installation of pumping plants to control water levels in abandoned mines.

Public health and safety projects to minimize hazards to the public are designed to prevent subsidence of surface areas and eliminate dangerous openings by filling voids in abandoned mines, slopes, and shafts.

Environmental development factors

This item includes the technical and engineering work required in preparing and evaluating all projects relating to anthracite mine water control, surface subsidence and mine fire control under the Anthracite Mine Water Control and Subsidence Act, which is conducted in cooperation with the Commonwealth of Pennsylvania and municipalities throughout the anthracite-producing region.

The physical environment of the region is adversely affected by surface and subsurface conditions resulting from widespread mine abandonments caused by the economic decline of the anthracite industry. The residual problems include surface subsidence caused by failure of underground mine pillars, flooding of abandoned anthracite mines, and underground and surface mine fires in inactive mines. Bureau of Mines files include a considerable part of the comprehensive data required to study and evaluate these problems and develop programs for their amelioration. A recent study by the Bureau of Mines of subsurface conditions under a small area in the northern anthracite field will be continued to cover additional, critical areas. The value of such a study, which includes a compilation of mine maps arranged in stratigraphic sequence together with pertinent data, has been demonstrated on numerous occasions when the Bureau was able to evaluate subsurface conditions in relation to subsidence potentials, and the incipient hazards to heavily populated urban areas, bridges, flood control facilities, public buildings, and dwellings. The study will also include resource data necessary for the future development of available anthracite reserves, and for solutions to the mining problems related to their recovery.

With the abandonment of anthracite mines, acid mine water pools have overflowed and contaminated streams in the anthracite region, thus hampering the economic development of the area. A comprehensive study will be made to determine where surface waters flow through broken strata directly into anthracite mine workings where they become acidic. The study will include investigations of anthracite mine maps and mine workings to determine the feasibility of collecting acid mine water from overflow points, and the possibility of directing these overflows to one or more central points for treatment.

Anthracite mine map atlas

This item pertains to the continued microfilming of anthracite mine maps and maintenance of the film library. These maps, many of which are in danger of being lost as the result of mine closures, are absolutely essential in subsidence investigations, mine fire and mine water control projects, mine safety, and mineral-resource studies. In addition to Federal Government use, communities throughout the anthracite region that are faced with mine fire and subsidence problems utilize these records. The films will also be of invaluable assistance to operators who might be interested in opening new mines or in reopening abandoned operations. As parts of the microfilming program are completed, manuscripts will be prepared cataloging mines in the areas covered.

Engineering functions and mining methods

This item relates to requests of small anthracite companies for definitive data on potential mining areas—particularly on underground conditions in surrounding abandoned mines and their relevancy to mine water and subsidence hazards. The small mines obtain a considerable proportion of their production from the recovery of old pillars in addition to first mining in virgin coal areas. The mining method selected is generally predicated upon the individual's personal experience rather than on sound engineering principles based upon local geology and seam characteristics. The result is often an unduly high loss of otherwise recoverable coal, followed by abandonment of the small mine and subsequent inundation of the workings—thus posing a threat to adjacent operations. The vast fund of information already collected by the Bureau of Mines would be made available to the small operator in such cases.

Conservation of resources

Plans to be developed under this activity call for a resource study of available, minable anthracite coal. Because of the inundation of large mining areas, subsidence, mine fires, and State and local laws restricting mining in certain cases, there are no realistic estimates available on minable anthracite resources. Therefore, a realistic appraisal of the quantity of coal that is available for mining must

be developed for conservation and development purposes and to implement compilation of data concerning the Nation's total energy resources. However, this determination can only be made by a detailed examination of the mine maps of individual companies, with due consideration of all pertinent State laws and local ordinances. In addition, it is proposed to assemble and evaluate pertinent cross sections and other mining data (much of which is already in Bureau files), plot subsurface water pools, and relate the whole to overlying surface features in order to establish a realistic estimate of the economically minable coal.

Sampling of anthracite

Anthracite sampling will be continued to make analyses available to Government agencies on the quality of coal produced at preparation plants in the anthracite area.

Economic development studies

Studies will be undertaken to determine future demand for anthracite in space heating and industrial markets of the United States, and the capacity of the industry to meet future requirements. The data will be correlated with demand in the export markets and requirements by Government agencies, including the Armed Forces in Europe. As some preparation plants have been idled by a lack of sufficient raw coal to operate continuously, the studies will also include data on the capacities of anthracite preparation plants and current and potential capacities of producers of run-of-mine coal.

Production statistics

Economic and statistical information on anthracite production, consumption, distribution, stocks, deliveries, and other subjects relevant to the anthracite trade will be published on a weekly, monthly, and annual basis.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(e) Petroleum	$538,877	$576,000	$560,000	−$16,000

The estimate of $560,000 is a decrease of $16,000 due to program savings to be realized by a reduction in petroleum resources field investigations.

Plan of work.—The funds requested will be used to conduct technical and economic studies that are designed to provide Government and industry with information of the location, extent, and utilization of the Nation's energy resources contained in petroleum, natural gas, and marginal bituminous substances. The objectives of the studies are to develop data that will result in a better utilization and in improvements in the recovery of these important resources. This work will be coordinated with that of other Government agencies, and certain investigations will be conducted in cooperation with State agencies. The following activities are planned under the program:

Conduct a study of national scope on natural gas liquids resources as to their location, extent, and production, and make an estimate of production in the near future from these known resources. This study will include consideration of present and possible future trends in production, technology, and practices and their effects on various sectors of the petroleum and natural gas industries.

Continue the engineering evaluation of the use of improved techniques used in producing oil from selected gas-cap reservoirs in the Gulf coast, midcontinent, and Rocky Mountain regions, in cooperation with the Engineering Committee of the Interstate Oil Compact Commission.

Conduct petroleum engineering investigations and surveys of secondary, marginal, and submarginal petroleum resources to determine the factors that will encourage their development. Evaluate these resources to establish their significance with relation to the Nation's energy requirements and to area and national economies. Emphasis will be placed on a study of deposits of low-gravity crude petroleum in the United States, including computation of amount in place, technology of recovery, and the effects of the development of these resources on the petroleum supply-demand relationship.

Prepare forecasts of petroleum supply and demand for use of State regulatory agencies, the Oil Import Administration and the industry, and analyze and report data pertaining to the production, trade, and consumption of petroleum and natural gas resources.

Make preliminary economic-engineering surveys and studies of petroleum and natural gas activities that are required by other Government agencies.

Study the changing pattern of supply and demand for petroleum and petroleum products, including variations in regional patterns of production and their effect on older producing areas. Determine factors that affect shifts in patterns for use in forecasting changes that can be expected in future years.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(*f*) Minerals	$3,100,555	$3,278,000	$3,144,000	−$134,000

The estimate of $3,144,000 is a decrease of $134,000 consisting of—

(1) A decrease of $254,000 due to program savings resulting from a reduction in mineral exploration and development activities;

(2) An increase of $120,000 to initiate a survey of mineral deposits in wilderness areas, as required under Public Law 88-577.

Need for increase.—The Wilderness Act (Public Law 88-577) requires the Secretary of the Interior to review all national parks, monuments, and wildlife refuges and ranges, wherever 5,000 acres or more of roadless country having wilderness characteristics may exist, for inclusion in the wilderness system. Such review obviously must include due consideration of present and likely future mining potentials. Many mineral deposits are known in these reserved areas, including a considerable number of occurrences on which mining claims have been located at some time. Available information regarding such deposits will have to be supplemented by inspection, in most cases, to provide reliable data and permit comment on their economic and strategic significance. Furthermore, the act directs that all national forest wilderness areas shall be surveyed by the Geological Survey and the Bureau of Mines "on a planned recurring basis * * * to determine the mineral values that may be present; and the results of such surveys shall be made available to the public and submitted to the President and Congress." Fulfillment of that requirement will necessitate field examination of known mineral deposits, whether or not covered by private claims and whether or not undergoing active development and mining.

Plan of work.—A number of projects will be brought to completion in fiscal year 1966, and about the same number will be started. Amongst those to be finished are nationwide studies of iron and steel scrap and iron ore resources. The results of a major review of domestic gold mines, begun a year ago, are to be published. The report will present estimates of the reserves that would be economic at various cost levels. A survey of known pozzolanic raw materials will be embodied in a report to be prepared for publication in which unpublished test results from various sources will be supplemented by a considerable volume of original data on these presently important cement additives.

Reports are scheduled on two mineral-industry productivity studies, one having to do with a metal mining and milling industry, the other with a segment of the nonmetallic minerals industry. An inquiry into some aspects of mineral freight costs is scheduled for completion, having been started in the current year.

A pilot study of the economics of mining and milling in one particular zinc-lead district, started this year, is to be completed and a report prepared for publication. Similarly, the question of capital cost of plants for metal mining and processing is to be dealt with in a report on a study of uranium operations started in the present fiscal year.

In addition to the wilderness mining investigations referred to previously, which will be a continuing project requiring several years for completion, certain clay and nonmetallic resource investigations are conducted on a continuing basis. Both in the East and in the West, cooperative agreements with some State mineral resource agencies provide for joint efforts in the investigation and development

of clays and other resources. The Bureau's role in some instances is largely confined to testing and qualifying the materials collected by the State. In other instances cooperation extends to all phases of the projects, from planning to publication of results.

All new projects, other than the one relating to administration of the Wilderness Act, are scheduled for completion in 1 or 2 years. A major new project is concerned with the silver situation, and particularly with the possibilities of renewed or increased output from the silver mines.

Stripping and leaching with nuclear explosives is to be considered and the results of the study published. Current copper leaching technology is to be described in another report of investigations.

The eastern fluorspar mining industry is at a low ebb at present, sustained partly by the value of its byproduct zinc and lead. An appraisal of this situation is to be carried out in the 1966 fiscal year.

What is done and what might be done with old cars and other forms of metal scrap, that now in some instances chiefly disfigure the landscape, is to be covered in a nationwide survey and report. Much has been written and said on this subject, but there remains too much unknown to permit satisfactory appraisal of possible remedies. Simultaneously with this survey of the situation, the Bureau will continue metallurgical research aimed at finding uses that would furnish the needed market incentive to keep such scrap from being abandoned in the first place.

One area will undertake a pilot study of the effects of mining on land use. Another is to prepare a report on the demand and supply of aggregates and other construction materials in a metropolitan area, where competitive pressures on the land frequently tend to drive out the pits and quarries.

Transportation of mineral products on the Great Lakes will be the subject of a second study of the relationships between transportation and mining.

Trends in productivity are more or less related to automation, and the extent of such automation and its effects are to be investigated experimentally in selected mineral industry operations in one area. Much of the necessary statistical data on labor productivity is available in the files of the Bureau of Mines and other Government agencies.

2. RESOURCE DEVELOPMENT

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(g) International activities	$507,666	$563,000	$563,000	----------

The estimate of $563,000 is the same as for 1965.

Plan of work.—The funds requested will be used to support the collection, interpretation, evaluation, and dissemination of data on international activities. The objective is to provide reliable current information and analytical appraisals of foreign mineral developments that affect domestic mineral industries, the availability of import requirements of strategically important minerals, and the export potential for domestic mineral commodities and related supplies. The need for this service grows as the U.S. mineral requirements expand in both quantity and variety because of technological developments, increasing population, and advances in the standard of living. As a consequence, the Nation's economy and security are increasingly affected by international mineral affairs.

The Bureau maintains a technical and statistical staff to assemble and evaluate data on mineral developments abroad. Through publications and consultation services these data are disseminated for the benefit of Government agencies, industry, educational institutions, and the general public; such authoritative information is essential for the formulation and administration of adequate and constructive policies and programs involving mineral commodities. This program is closely coordinated with those of other Government units, particularly with the data-collecting facilities of the Foreign Service.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$29,113,732	$30,891,000	$31,625,000	+$734,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	35,000	7,000		−7,000
Unobligated balance	255,268			
Appropriation	29,404,000	30,898,000	31,625,000	+727,000
Obligations by objects:				
11 Personnel compensation	21,230,942	22,746,000	23,230,000	+484,000
12 Personnel benefits	1,572,768	1,704,000	1,741,000	+37,000
21 Travel and transportation of persons	578,104	700,000	770,000	+70,000
22 Transportation of things	133,195	135,000	140,000	+5,000
23 Rent, communications, and utilities	891,852	903,000	935,000	+32,000
24 Printing and reproduction	295,416	350,000	350,000	
25 Other services	909,809	800,000	810,000	+10,000
26 Supplies and materials	1,568,022	1,784,000	1,850,000	+66,000
31 Equipment	1,759,311	1,670,000	1,700,000	+30,000
32 Lands and structures	175,350	100,000	100,000	
Subtotal	29,114,769	30,892,000	31,626,000	+734,000
Quarters and subsistence charges	−1,037	−1,000	−1,000	
Total obligations	29,113,732	30,891,000	31,625,000	734,000

STATEMENT OF ACTING DIRECTOR FRANK C. MEMMOTT

Senator BIBLE. You may proceed, Mr. Memmott.

Mr. MEMMOTT. I have submitted to the committee a full statement. Would you prefer that this be submitted and I highlight the statement?

Senator BIBLE. The statement will be incorporated in full in the record, and I would suggest that you highlight your statement.

(The statement referred to follows:)

Mr. Chairman and members of the committee, it is a pleasure to meet with this committee to discuss the programs of the Bureau of Mines and to present for your consideration our requirements for fiscal year 1966. Our estimate proposes limited increases. These are essential, however, to continued progress in the conservation of our irreplaceable mineral resources. For fiscal year 1966, the Bureau is requesting $42,661,000, an increase of $765,000 over the adjusted appropriation ($41,896,000) for fiscal year 1965. This year's estimate includes $31,625,000 for conservation and development of mineral resources; $9,507,000 for health and safety; and $1,529,000 for general administrative expenses. We are also asking for $16,780,000 in borrowing authority to meet our existing commitments under the helium conservation program. In addition, an increase of $12,500,000 in contracting authority is requested for the acquisition of helium which is now going to waste.

This year's estimate reflects the changes which we have made in the Bureau's organization in order to strengthen the programing of its work. You will note from the estimates before you, that work carried out under the conservation and development of mineral resources appropriation is now divided into two broad categories—research and resource development.

In fiscal year 1966, research operations are planned to develop a sound scientific base for improving mining techniques and systems so that our domestic industry can operate economically and efficiently enough to supply an increasing share of our growing mineral requirements. We plan also to expand metallurgical studies that hold promise of greater recovery and utilization of waste metal resources, with particular emphasis on the iron and steel scrap exemplified by junked automobiles. We hope, too, to enable our scientists and engineers to seek new uses and expanded markets for our abundant domestic coal resources, so that these fuels can contribute more effectively to the Nation's rising conomy. To help fill the gap in proved petroleum reserves that can now be predicted to result from

the slowdown in exploration, we are seeking to increase the recoverability of oil and gas from underground deposits and to intensify our research on oil shale. We plan also for a modest expansion of cooperative efforts to further the development of a marine mining industry. We are asking, too, for the opportunity to extend studies of explosive reactions and thereby obtain the fundamental knowledge needed to combat more effectively hazards that are encountered in a variety of industrial operations.

In the resource development phase of Bureau operations, we plan improvements that will substantially increase our speed and efficiency in gathering, processing, and interpreting the vast array of statistical and economic information that is indispensable in guiding our own programs and those of other Government agencies, and which has proved so useful to private industry.

At this point, I want to assure the committee that the Bureau is constantly aware of the necessity for keeping the costs of Government at the lowest level consistent with national needs. We have strongly supported, and, with the encouragement of Secretary Udall, we have acted promptly to make effective the President's directive with respect to cost reduction and manpower utilization. We have examined and we will reexamine continuously every aspect of our functional activities and our administrative operations to achieve a savings wherever possible. Hence, although we are requesting an increase for fiscal year 1966, we are asking only for what we believe is essential if we are to solve urgent national problems. We have been able to make our request relatively modest largely by conducting rigorous reviews of our programs and by effecting reductions that total $710,000. Of this amount $350,000 was saved by decreasing certain mineral resource evaluation and development activities; $180,000 was saved through a reprograming of anthracite and other coal research; $21,000 results from a termination of certain hydraulic mining studies; and $159,000 was achieved by a reorientation of health and safety programs. In addition, we estimate that savings of more than half a million dollars will accrue to the Government through improvements achieved by the Bureau's manpower utilization and general cost reduction studies. As I have said before, we will continue our efforts in this direction.

And now, Mr. Chairman, with your permission, I should like to give the committee a few pertinent details concerning the major items for which we are requesting increases.

As you gentlemen doubtlessly know, pioneering research by the Bureau of Mines provided a wealth of information of the western oil shales which are now being carefully assessed by industry for commercial potential. It is time now, we believe, for the Bureau to take the next logical step and explore the possibility of developing methods that will permit economic development even of those shale deposits that are not at present economically attractive. Therefore, we are requesting an increase of $100,000 for oil shale research. Approval will permit the initiation of studies on in situ recovery of oil from oil shales. These studies should enable us to determine how much of our total oil shale resources can be economically developed.

Within the limits of available funds, the Bureau of Mines has been working steadily on what it has recognized for some time as a growing national problem—a problem exemplified by the heaps of junked automobiles, refrigerators, stoves, and other wornout consumer products that are piling up around our country from coast to coast. This accumulation of junk is not only esthetically offensive; it represents a deplorable waste of valuable resources. The Bureau's attack on this problem has been primarily through metallurgical research to make the reclamation of junked autos more economically attractive to private industry. We have made encouraging progress in this work and now have reason to hope that the iron and steel scrap in these autos may become a key that can also unlock for us domestic deposits of low-grade iron ore that are not presently being used. On the basis of its accomplishments thus far, the Bureau is convinced it can make an even greater contribution to the solution of the junk metal problem. Therefore, we are requesting an increase of $320,000 and, if Congress approves, the immediate problem of ferrous scrap reclamation will be attacked by (1) improvement and development of economic processing methods and (2) determination of direct uses for these discarded materials.

Today, mining technology must somehow achieve economic production of greater quantities of minerals, even though faced with the rising costs involved in mining lower quality ores at much greater depths, and confronted by a public demanding that the physical and cultural aspects of the land surfaces be preserved. We must pursue a vigorous program of scientific research that can provide the

knowledge needed to develop an improved mining technology, which can make possible economic production of minerals with minimum disruption of other uses of surface areas. The increase of $355,000 requested will enable the Bureau to carry out a comprehensive balanced program of basic and applied scientific research to meet this need.

We are requesting a modest increase of $100,000 to expand our work on the development of systems, instruments, and equipment for mining specific ocean bottom mineral deposits. Private industry, private research institutions, and local governments have expressed publicly their approval of this effort. There is, in fact, already a beginning of active support and cooperation with the Bureau in its marine mineral technology program. We feel that the Nation stands to benefit substantially from this program in the form of new commercial enterprises, new opportunities for employment, and increased royalties on offshore mineral leases.

A modest increase of $50,000 will provide for studying interractions between weak gas explosions and coal-dust-laden air. While the major benefits of this work will accrue to the coal mining industry, the knowledge obtained concerning the initiation and propagation of explosions in atmospheres containing flammable concentrations of gases, vapors, or dusts can be widely applied. Such information can help greatly to reduce the occurrence of industrial explosions that claim precious lives and cost millions each year in the loss of resources and damage to property.

An increase of $200,000 is requested to cover increased costs that will result temporarily in automating selected statistical surveys. In addition, $30,000 will be required for increased support of cooperative work with State mineral resource agencies. The collection of statistical data, previously performed by several separate commodity groups, has now been unified for economy and efficiency. The additional funds will provide for systems development leading to full automation of mineral production and mineral resource data. It is confidently expected that further progress in this direction will lead to a greatly improved statistical process and make possible a more meaningful analysis and interpretation of the data collected.

The Wilderness Act, recently approved by the Congress, requires a review of all national parks, wildlife refuges, and ranges, wherever 5,000 acres or more of roadless country having wilderness characteristics may exist, for possible inclusion in the wilderness system. The act directs the Bureau of Mines to participate in this survey and to determine mineral values present in these areas. Fulfillment of this requirement will necessitate an increase of $120,000 to initiate field examinations to determine the commercial potential of known mineral deposits, whether or not covered by private claims and whether or not undergoing active development.

Falls of roof, rib, face, or back still constitute the major cause of serious injuries and fatalities in underground mines. Although we have made great strides in our efforts to minimize such hazards, control over conditions has been based primarily on trial-and-error methods and on personal experience. We need more scientific methods and new instruments to sample critical areas and produce basic data that can be correlated with the technical information we already have.

An increase of $130,000 is proposed to provide for the needed research capability to expand our work in this important phase of underground mine safety.

We are requesting an increase of $60,000 to provide for the conversion of administrative data processing systems to automated methods, to strengthen the Bureau's internal audit program further and for within-grade pay increases. Of the $60,000 increases, $31,000 will be needed to cover increased personnel costs that will be temporarily incurred in converting to automated methods. An additional increase of $10,000 is requested to provide for employee compensation payments.

In conclusion, I should like to take up our requirements for implementing the helium conservation program. First, we are requesting $16,780,000 of additional borrowing authority to assure that the Bureau will be able to pay for helium that will be delivered in fiscal year 1966 by the five private industry helium production plants now in operation. Secondly, we are seeking an increase of $12,500,000 in the present limitation of $47,500,000 on contracting authority. With this increase we would expect to be able to conserve, for useful purposes beyond 1985, an additional 24 billion cubic feet of helium that would otherwise be wasted.

That, gentlemen, concludes my statement. We will be happy to discuss our programs in greater detail, if you so desire, and to answer any questions that you may have.

Oil Shale Report

Senator Bible. Mr. Memmott, it has been suggested to me that the request be made of you to furnish the oil shale report, just discussed with Admiral Lattu, to both the committee and Senator Proxmire, as I am told the subject falls more properly in your jurisdiction than in the oil and gas division.

Mr. Memmott. We have copies of this report.

Senator Bible. Please see that this is done at the earliest possible date—one copy to this committee and one to Senator Proxmire, and to any other Senator who desires one.

Senator Young. I would like one.

Senator Mundt. I would like one.

Senator Bible. Also, please furnish copies for Senators Mundt and Young.

Highlights of Director Memmott's Statement

Will you please highlight your statement?

Mr. Memmott. Mr. Chairman and members of the committee, it is a pleasure to appear before you to present the budget requirements for the Bureau of Mines for fiscal year 1966.

We believe that the Bureau's budget which we are submitting for your consideration is a sound and frugal budget. It reflects the Bureau's wholehearted support of the President's program for utilizing manpower resources to the maximum and keeping costs of Government at the lowest level consistent with national needs.

The Bureau's implementation of this program has received the encouragement and strong support of both Secretary Udall and Assistant Secretary Kelly.

We have examined and we will reexamine continuously every aspect of our functional programs, our administrative operations, and our facility requirements to achieve savings wherever possible.

We realize that it takes courage on both sides to do this type of operation, that the President's policy of manpower utilization and cost reductions is the Interior's policy, and it is also the Bureau of Mines' policy at this time.

As a result of the vigorous reviews, that we have thus far completed, we have effected tangible savings totaling more than $700,000. Additional cost reduction projects are underway, including the closure of certain facilities that we feel are no longer essential. These closures will take place within the next 16 months, and will account for substantial savings in fiscal year 1967 and thereafter.

Because of the savings we have already effected, we were able to hold our budget estimate for fiscal year 1966 to modest increases. These additional funds are required to continue progress in the conservation of our irreplaceable mineral resources.

1966 Budget Estimates

For fiscal year 1966 the Bureau is requesting $42,661,000, an increase of $765,000 over the adjusted appropriation of $41,896,000 for fiscal year 1965. In addition, we are asking for $16,780,000 in borrowing authority to meet existing commitments under the helium conservation program.

RETORTING OF OIL SHALE

Among the increases, $100,000 is needed to enable the Bureau to conduct studies preliminary to a program of field tests on retorting of oil shale in the ground as a possible means of avoiding the considerable expense of first mining it.

As Secretary Udall has stated, public oil shale lands may be the greatest single reserve of energy in the Nation. It has been estimated that 2,500 billion barrels of oil could be produced from the vast Government oil shale tracts in Colorado, Utah, and Wyoming.

If successful, this proposed technique of in situ retorting would be of great economic benefit in areas where the shale is of too low a grade or where mining and shipping costs make shale mining a marginal operation.

We believe that it is imperative for the Government to take the initiative in this work, and to help in setting the stage for the establishment of a shale-oil industry in the United States.

RECLAIMING OF METALS FROM JUNK

Turning to an entirely different phase of our work in which President Johnson has shown great interest, we are requesting $320,000 for development of an economic process to reclaim metals from junked automobiles, wornout refrigerators, stoves, and other consumer products that are littering our country from coast to coast.

This accumulation of junk is not only an eyesore, but it represents a deplorable waste of valuable resources. It has been estimated that junked automobiles alone contain over 5 million tons of iron; up to 200,000 tons each of aluminum, lead, and zinc; 800,000 tons of rubber; 70,000 tons of copper; and an undetermined amount of tin, nickel, cobalt, and chromium.

If some of these materials could be fed back into the commercial stream, it would help assuage the demands of a rapidly increasing population and its expanding economy.

This work will be directed at two vital needs—to help preserve the scenic beauty of our country for this and future generations, and the conservation, through reclamation, of millions of tons of valuable metals now rusting away.

Senator MUNDT. Mr. Chairman, could I ask a question?

Senator BIBLE. Certainly.

Senator MUNDT. How do your propose to do this? How do you propose to change those automobiles sitting in junk piles?

Mr. MEMMOTT. Actually, due to technology changes in steelmaking scrap of the type that is in automobiles—I am speaking of the body itself—you can take the gears and axles in the scrap that is acceptable—but the body is not acceptable as open hearth furnace feed today.

And if I may—it has been pointed out, I am very new on the scene. I have only been in Washington about 1 year, and in my present job since the first of the year. I have with me Mr. Harry Perry, who is responsible directly for this. If it is all right, I would like to ask Harry to expand this further.

Senator MUNDT. You are not going out and acquire these, are you?

Mr. PERRY. The price of scrap of this type has fallen about in half, as Mr. Memmott pointed out, because of basic changes in methods

of making steel. This low grade scrap is no longer desirable under the new method. What we would like to do now is to find out ways of making this scrap more attractive again to the steel industry.

One of the problems here, of course, is that these accumulate in small quantities, and the transportation to a place where they are useful is extremely expensive.

Senator BIBLE. Any further questions, Senator?

Fine. Mr. Memmott, you may proceed.

HELIUM CONSERVATION PROGRAM

Mr. MEMMOTT. In implementing our helium conservation program, we are requesting $16,780,000 of additional borrowing authority to assure that the Bureau will be able to pay for helium that is expected to be delivered in 1966 by the five private industry helium production plants now in operation.

This is an investment program, investing in conservation of our helium resources, to be resold later. The Government will realize every dollar put into the program.

Also, under this program, we are seeking an increase of $12,500,000 in the present limitation of contracting authority. With this increase we would expect to be able to conserve, for useful purposes beyond 1985, an additional 24 billion cubic feet of helium that would otherwise be wasted.

We strongly urge that this increase in contracting authority be approved.

U.S. EXPORTS OF COAL

It would be of interest to the committee to know that most of the basic work in connection with the Interior Department's efforts to increase U.S. exports of coal is done by the Bureau of Mines.

In fact, our late President Kennedy initiated this and gave this authority to the Department of the Interior.

The Department has established industry and interdepartmental advisory groups to assist in this program to sell more coal abroad in competition with other energy sources.

Since the energy requirements abroad are expanding, the markets for U.S. coal are there, and we are trying in various ways to help the industry make the sales.

One of my first jobs a year ago when I came to Washington was to meet with Giuseppe Medici in a team from Italy. Some foreign governments prefer not to deal directly with coal or mining companies. They prefer to deal on a government-to-government basis, and we are furnishing the vehicle for implementing the coal program.

Giuseppe Medici had received word from Saudi Arabia and the Russians and other European countries that we did not have the reserves. They indicated there was labor unrest, which is again false, and there was no security of supply if they teamed up with U.S. coal.

Partially as a result of this meeting, which was approximately 1 year ago, 11 million tons of coal were sold to the Italian Government.

The principal impediment to the expansion of U.S. coal export is the existence of tariff barriers in foreign countries. These barriers have been established primarily to protect the coal industry in the particular country.

The Bureau is preparing detailed position papers for use in the forthcoming Kennedy round of negotiations in the Geneva Agreement on Tariffs and Trade. The Bureau will also supply a representative to participate in the negotiation.

Incidentally, France recently decided to build an 83,000-ton deadweight carrier to transport U.S. coal to a new electric utility plant at Le Havre. We consider this to be a significant breakthrough in the Government's coal export expansion program.

This action on the part of the French is important because (*a*) it displays the heretofore lack of confidence on the part of some of the large coal-importing countries in the availability of large quantities of high quality, low price U.S. coal on long-term contracts, (*b*) it could lead to additional long-term coal contracts and the construction of additional supercarriers for U.S. coal to Italy, France, and Germany.

It indicates that U.S. coal is competitive not only with foreign coals, but with fuel oil, in expanding electric power generating programs abroad.

This concludes the highlighting of my statement submitted to you, and I will be more than happy to answer questions.

Biography of Director Memmott

Senator Bible. I appreciate your opening statement, Mr. Memmott, and I certainly realize that you have been aboard for just a short period of time.

So that the record may correctly reflect your very distinguished biography and background, I am going to ask that the biography of Mr. Frank Memmott be made a part of the record.

(The biography referred to follows:)

Biographical Sketch of Frank C. Memmott

Frank C. Memmott, of Kenilworth, Utah, who was appointed Deputy Director of the Bureau of Mines by Secretary of the Interior Stewart L. Udall a little over a year ago, has been serving as Acting Director of the Bureau since the resignation of Marling J. Ankeny on December 31, 1964.

A native of Utah's Carbon County, Mr. Memmott has a broad and varied background of mining experience, both in metal and nonmetal operations and in many different parts of the United States. He began working in coal mines at Castle Gate and Dragerton, Utah, on a part-time basis while still in high school. Since then, he has gained firsthand knowledge of conditions and operating problems at underground and surface mines in Arizona, Colorado, Illinois, Indiana, Kentucky, New Mexico, Ohio, Pennsylvania, West Virginia, and Wyoming. In addition to his extensive experience in the coal industry, he has also engaged in mining such minerals as copper, potash, and uranium.

Mr. Memmott's educational background includes attendance at Brigham Young University in Utah, the University of Idaho, and the Graduate Institute of International Studies, University of Geneva, Switzerland. He has a bachelor of science degree and a master of science degree in economics, mathematics, and physics. While at the University of Geneva as an exchange student, he studied economics of international minerals, trade, and banking, along with research and development work in European mining techniques, including progress in mine mechanization. After returning to the United States, he took advanced courses in mining engineering at Carbon College.

To extend further his knowledge in the rapidly changing field of mining technology, Mr. Memmott worked and consulted for several years with U.S. industry in designing, developing and testing improved mining equipment, and in the experimental application of new mining techniques and methods. At the invitation of Britain's National Coal Board, he visited that country in 1962 to observe studies at the coal board's research center and to obtain information on industrial mining operations.

Mr. Memmott is a member of the American Mining Congress and the Rocky Mountain Coal Mining Institute. He is a former member of the Technical Advisory Committee to the Department of the Interior's Office of Coal Research, and as a member of the United Mine Workers of America, Castle Gate Local No. 5916, he served on the safety and pit committee. His father, the late William George Memmott, worked 53 years in Utah coal mines.

From 1959 until his appointment as Deputy Director of the Bureau of Mines, Mr. Memmott served in the Utah State Legislature, first as a representative and then as a State senator from Carbon County.

Terminations, Transfers, and Consolidations

Senator Bible. There are a number of questions that suggest themselves. I assume this one opens up the widest range of possibilities and problems for you, and, possibly, as well, for the Congress.

As you know, the chairman asked that you be prepared to supply information to the committee with regard to each action of termination, of transfer, and consolidation of activities, stations, or facilities of your Bureau, referred to in fiscal year 1966 justifications or otherwise announced.

Would you please insert this data into the record?

(The information referred to follows:)

Bureau of Mines

Program savings resulting from termination, transfer, or consolidation of activities

Appropriation and activity	Location	Savings		Total number of permanent employees involved	Reduction in employment
		1966	1967		
Conservation and development of mineral resources:					
1. Research:					
(a) Coal:					
Anthracite Research Center.	Schuylkill Haven, Pa.	$171,000	----------	38	22
Seattle Research Laboratory (coal preparation).	Seattle, Wash.	9,000	----------	16	4
Denver Coal Research Laboratory.	Denver, Colo.	----------	----------	31	----------
(d) Metallurgy:					
Boulder City Metallurgy Research Laboratory.	Boulder City, Nev.	----------	$132,000	82	27
Norris Metallurgy Research Laboratory.	Norris, Tenn.	----------	60,000	35	6
Tucson Metallurgy Research Laboratory.	Tucson, Ariz.	----------	11,600	12	1
(e) Mining:					
Applied Physics Laboratory.	College Park, Md.	----------	----------	32	----------
Reno Mining Research Laboratory.	Reno, Nev.	----------	----------	8	----------
2. Resource development:					
(c) Bituminous coal: Mineral Resource Office.	Alaska	80,000	----------	5	5
(e) Petroleum: Mineral Resource Office.	do	16,000	----------	1	1
(f) Minerals:					
Mineral Resource Office.	do	254,000	----------	14	14
Seattle Research Laboratory (clay testing).	Seattle, Wash.	----------	----------	2	2
Health and safety: 1. Inspections, investigations, and rescue work: Health and safety offices.	Various States	10,000	----------	4	4
Helium fund: 1. Helium activities: Helium plant.	Otis, Kans.	100,000	----------	35	35
Total		640,000	203,600	315	121

CONSERVATION AND DEVELOPMENT OF MINERAL RESOURCES

1. Research

(*a*) *Coal.*—Anthracite Research Center: This research center located at Schuylkill Haven, Pa., will be closed and the research functions will be transferred to other coal research laboratories and centers.

The proposed action will result in improved economy and strengthening of the Bureau's research program. This consolidation will permit more effective utilization of our scientific staff by diverting some of the activity now devoted exclusively to anthracite research to other research areas having greater success potential.

The employees affected by this action will be offered positions at other Bureau facilities.

Seattle Research Laboratory (coal preparation): This laboratory will be closed and research and testing functions transferred to other locations.

The proposed consolidation will result in some monetary savings, but—more important—the skills and talents of the Seattle staff will be utilized more effectively at the other Bureau research centers.

The employees affected will be offered positions in other Bureau installations.

Denver Coal Research Laboratory: This laboratory will be closed, and the principal research functions will be transferred to the Bureau's Grand Forks Lignite Research Laboratory, Grand Forks, N. Dak. The research activities of the Denver Coal Research Laboratory and the Grand Forks Lignite Research Laboratory are devoted to preparation and utilization of the lower rank coals. It is believed that improved efficiency can be achieved by consolidation of these two establishments. Space vacated by the transfer of the Denver Coal Research Laboratory will be occupied by the Applied Physics Laboratory now located at College Park, Md.

The 31 employees affected by this action will be offered employment at Grand Forks, N. Dak.

(*d*) *Metallurgy.*—Boulder City Metallurgy Research Laboratory: This Laboratory will be closed and the research functions will be transferred to the Reno Metallurgy Research Center.

The transfer is expected to effect improved efficiency of the research program as well as significant reductions in mechanical service costs.

The current staff at Boulder City consists of 82 employees. It is estimated that the consolidation will render unnecessary a total of 27 positions. All personnel will be offered employment at the Reno Metallurgy Research Center or other Bureau installations.

Norris Metallurgy Research Laboratory: This Laboratory will be closed and the essential research functions transferred to other metallurgy research centers. This action is being taken to improve the efficiency of operations and derive significant savings in operating costs by reducing the total number of facilities and consolidating essential activities, equipment, and personnel at the research centers.

The 35 employees affected will be offered positions at other Bureau facilities.

Tucson Metallurgy Research Laboratory: This Laboratory will be closed and the research functions will be transferred to Salt Lake City and incorporated into the broader program there.

The proposed action is recommended chiefly to strengthen the overall mineral processing program of the Bureau. The research at this Laboratory, owing to limited facilities, has been restricted in recent years to studies concerning the beneficiation of copper ores. The advancement of science in recent years forces the Bureau to consider consolidation of mineral research work at larger and more complex centers.

The 12 people currently employed at the Laboratory will be offered transfers to similar positions at the Salt Lake City Metallurgy Research Center or other Bureau facilities.

(*e*) *Mining.*—Applied Physics Laboratory: The Applied Physics Laboratory occupies space jointly with the Metallurgy Research Center in Bureau-owned facilities located at College Park, Md. The Applied Physics Laboratory will be transferred to Denver, Colo., and Minneapolis, Minn.

The proposed action is being taken to provide space for the housing of programs that will be transferred as a result of the closing of the Norris Metallurgy Research Laboratory.

A total of 34 personnel are employed at the laboratory. Employees will be transferred to Denver or Minneapolis, with the exception of two who will be retained at College Park.

Reno Mining Research Laboratory: The Reno Mining Research Laboratory occupies space jointly with the Reno Metallurgy Research Center in a Bureau-owned building located at Reno, Nev. The proposed move is for the purpose of providing space needed to consolidate the Boulder City metallurgy functions into the Reno facility.

All personnel, research functions, and laboratory equipment are to be moved and headquartered at Denver Federal Center.

The eight employees are to be transferred to Denver, Colo. No terminations are anticipated.

2. Resource development

(c) *Bituminous coal.*

(e) *Petroleum.*

(f) *Minerals.*—Mineral resource offices: The field investigations and laboratory operations headquartered in Juneau and Anchorage, Alaska, will be substantially reduced.

This action is being taken to bring the Alaska mineral resource program into line with the nationwide mineral resource program.

The 20 employees affected by this action will be offered positions at other Bureau facilities.

(f) *Minerals.*—Seattle Research Laboratory (clay testing): The clay testing laboratory will be transferred to Albany, Oreg., where excellent facilities are available at the Albany Metallurgy Research Center. The move will allow for more comprehensive testing of clays and ceramic products of the Western United States.

The two employees affected will be offered positions in other Bureau installations.

HEALTH AND SAFETY

1. Inspections, investigations, and rescue work

Health and safety offices.—The proposed realinement of health and safety activities will reduce the number of health and safety field district offices from nine to five. The consolidation also will result in some change in the status of the subdistrict office at Jellico, Tenn.; and the elimination of a health and safety office at Anchorage, Alaska.

Reduction in the number of health and safety districts from nine to five is proposed to reduce the expense of conducting health and safety operations in the field and to further improve and simplify management functions.

All employees affected will be offered positions elsewhere in the Bureau.

HELIUM FUND

1. Helium activities

Helium plant.—Certain modifications will be made to the Otis, Kans., helium plant to produce crude helium instead of grade A helium.

The proposed action is being taken to increase the efficiency and reduce the costs of helium production by the Bureau of Mines at its own existing plants. It is now possible, within the limits of the capacity for purification at the various plants, to purify helium where it can be accomplished most effectively.

The 35 personnel affected by the proposed action will be absorbed within the helium activity through attrition and reassignment.

SAVINGS

Senator BIBLE. Do you have extra copies, so that it can be furnished to all of the members of the committee that are present here?

Mr. MEMMOTT. We do not have it. We have information on each one of the closures here. I was not aware that we were to furnish this for the committee.

Senator BIBLE. I thought it might be helpful, because we have a problem in Nevada, and I am sure Senator Mundt has one. I do not know whether the other Senators do.

Why do you not develop it in your own way? What are you going to do in this area? Is this where you are going to save the $750,000?

Mr. MEMMOTT. Correct.

We have an explanation for each one of the closures. If it pleases the committee, Mr. Chairman, I could turn these over, and have them duplicated.

Senator BIBLE. No, we want you to proceed at this time.

ALASKAN PROGRAM

Mr. MEMMOTT. The program in Alaska I would like to cover first if that is all right.

Senator BIBLE. That comes almost first alphabetically.

Senator BARTLETT. We are more concerned with this than Alabama is.

Mr. MEMMOTT. The program saving of $254,000, resulting from a reduction in mineral exploration and development activities, involves chiefly the termination of the investigation of mineral deposits in Alaska.

The decision to discontinue such work was reached regretfully and only after a long period of growing concern over the relative ineffectiveness of the program.

The program has been largely ineffective in stimulating mineral development because it has been too small. Spread over such a great geographic area, and faced with the high costs resulting from Alaska conditions, the Bureau's efforts accomplished very little.

One factor in this unfortunate result has been the small number of known mineral deposits in Alaska that are commercially or even marginally attractive under the prevailing economic handicaps.

Not being authorized to conduct outright prospecting, we have been confined largely to sampling, ore testing, and other types of development of deposits discovered and initially prospected by others.

It is obviously not much use investigating resources whose utilization is not predictable. We may, in fact, have been overoptimistic in supporting certain lines of investigation as long as we did.

Another consideration in the decision reached has been the changed outlook for the utilization of Alaska coal resources. The advent of natural gas has lessened concern for minable reserves in the Rail Belt area.

Early results of our recent investigations of Arctic coals have lessened our hopes for turning up any high-grade coking coals and, meanwhile, other sources of supply around the Pacific Basin appear to be filling the needs of the Japanese and other markets for such coal.

CONTINUATION OF RESOURCE INVESTIGATIONS

It must be understood that a substantial program of resource-type investigations will continue, which we believe will be of greater value, dollar for dollar, than the exploratory-type of work that is being discontinued. It will be directed toward a better understanding of the opportunities for mineral industry enterprise in Alaska, its economic and technical problems, and their solution.

So far as concerns the processing and utilization of Alaska mineral raw materials, the engineering staff and the Bureau's specialized mineral-research laboratories throughout the country are still available.

I think it is well to point out here that the resource people that are out in the field and collecting the samples and service the industries for the particular States, including Alaska, are remaining in Alaska

That is my statement regarding that.

PERSONNEL REDUCTIONS

Senator BIBLE. I am perfectly happy to have Senator Bartlett ask any questions he wants, at this point.

You say you are going to have $254,000. This is some type of reduction in force. How many positions is this within the Bureau of Mines in Alaska?

Mr. MEMMOTT. That will be 20 reductions.

Senator BIBLE. How many do you now have there?

Mr. MEMMOTT. Twenty-six.

Senator BIBLE. You are going to reduce it to six?

Mr. MEMMOTT. That is correct.

BUREAU OF MINES LOCATION

Senator BIBLE. Do they have a Bureau of Mines building in Anchorage or Juneau; or where is it located?

Mr. MEMMOTT. If I may, I have my Assistant Director of Administration, Mr. Rampacek, and the budget officer, Mr. Thomson, here. I will direct that question, if it pleases the committee, to Mr. Rampacek.

Senator BIBLE. That will be all right.

Mr. RAMPACEK. We have a building at Juneau, which is now occupied by our mineral resources people.

Senator BIBLE. You say, "We have a building." Do you mean the Department of the Interior, or the Bureau of Mines has a part of it?

TRANSFER OPPORTUNITIES FOR RELEASED PERSONNEL

Mr. RAMPACEK. No; the Bureau of Mines has a building located at Juneau. The 20 people affected by the reduction will be offered transfers to other mineral resources operations throughout the United States.

Senator BIBLE. They will be offered transfers out of Alaska?

Mr. RAMPACEK. Yes, sir.

Senator BIBLE. I imagine this is what probably bothers the Senator from Alaska.

How long have you been operational there?

Mr. RAMPACEK. Since about 1940, as I recall.

Is that correct?

The building was built in 1945.

RESPONSIBILITY FOR ACTION

Senator BIBLE. I think this problem will be inherent in all of these transfers, consolidations, and closures: Who is responsible for this decision?

Mr. RAMPACEK. The Director.

Senator BIBLE. Mr. Memmott, did you make this decision?

Mr. MEMMOTT. As was stated earlier, just since the first of the year I have been the Acting Director, so I feel like someone coming in at the last play of the fourth quarter.

Senator BIBLE. Who played the first three quarters?

Mr. MEMMOTT. Mr. Ankeny.

Senator BIBLE. Was this decision for a reduction in force, of 20 people out of 26 in Alaska, made by Mr. Ankeny or by you?

Mr. MEMMOTT. It was a Director's decision at that time. It was made by Mr. Ankeny. But I might say this is part of the President's program of frugality, and it is the Department's policy, and it has been conveyed down to the Bureau of Mines, that we are to take a hard look at manpower utilization cost reduction. It is an overall program.

This is just one of several that we are involved in, as the committee well knows, and if direction is to flow from the Director's office, yes, I was involved in this decision.

Senator BIBLE. What I am trying to get at—and it is not for the purpose of embarrassing anybody, because these are hard questions when they come along—is to try to find out the mechanics by which the Bureau of Mines arrived at this conclusion.

Who actually did it? Who are the persons? We are very well aware of the fact that the President of the United States has said, "Make the budget leaner." When he said that to the Secretary of the Interior, did the Secretary of the Interior say,

> Well, now, we have to save $754,000 from the Bureau of Mines. You fellows go and find out where you can save it.

Is this how it happened?

Mr. RAMPACEK. No. We made an evaluation of our operations from the standpoint of facilities, requirements, and also the programs we had in effect throughout the Bureau of Mines. These were group decisions.

Senator BIBLE Will you tell us who "we" are?

Mr. RAMPACEK. The Assistant Directors and the Director.

Senator BIBLE. How many Assistant Directors are there in the Bureau of Mines?

Mr. RAMPACEK. We have five—Administration, Mineral Resources, Research, Helium, and Health and Safety.

Senator BARTLETT. Do you need that many Assistant Directors?

Mr. MEMMOTT. I would say this is needed, definitely.

Senator BARTLETT. Was the need for five examined?

Mr. MEMMOTT. It is my understanding that this reorganization happened about approximately a year and a half ago. Is that correct?

Mr. RAMPACEK. Yes.

METHOD OF OPERATION

Senator BIBLE. Do we have the five Assistant Directors here?

All I am trying to find out is who made this decision, and what they used to make the decision. Did the five men go to Juneau and look over the plant and the operation and look at the performance? Or was this a paper cut, performed in Washington, D.C.?

Mr. RAMPACEK. The decision was made in Washington, D.C.

Senator BIBLE. Did you go up to Alaska to take a look at the operation?

Mr. RAMPACEK. No, sir.

Senator BARTLETT. Did you talk with the officials of the State planning commission or the Governor?

Mr. RAMPACEK. No, we did not.

Senator BIBLE. Since the present discussion involves Alaska, I will leave the matter with the Senator from Alaska.

Senator BARTLETT. Thank you.

Mr. RAMPACEK. We did talk to the area director, however.

Senator BARTLETT. Was he in favor of the reduction?

Mr. RAMPACEK. He was in favor of supporting the President's program of cost reduction.

Senator BARTLETT. How much did the building at Douglas cost?

Mr. RAMPACEK. I cannot give you that figure right off.

Mr. WELLS. $250,000.

Senator BIBLE. Where is Douglas?

Senator BARTLETT. It is right across from Juneau.

How much does it cost a year to maintain that building?

Mr. WELLS. $127,000 a year for maintenance.

Senator BARTLETT. Will these six people who are to be left occupy the building, or will the building be closed?

Mr. RAMPACEK. We assume that they will move out, and occupy rented space provided by the GSA or if the building is retained for Government occupancy by the GSA, we will occupy a few offices.

Senator BARTLETT. Do you have any notion—you have made some preliminary studies, I am sure, to determine what those rentals will be?

Mr. RAMPACEK. We have, but I do not have them available.

Senator BARTLETT. Will you furnish them?

Mr. RAMPACEK. Yes, sir.

(The rentals referred to follow:)

It is estimated that rented space for Bureau activities in Alaska would cost in the neighborhood of $5,000 to $6,000 per year. However, it is believed that arrangements could be made with the General Services Administration for sufficient space without charge to the Bureau.

DISCREPANCY IN ANNOUNCED SAVINGS AND PRESENT STATEMENT

Senator BARTLETT. You said, Mr. Memmott, that the savings would be $254,000. The preliminary announcement said $350,000. There is a discrepancy there on a percentage basis that amounts to quite a little.

Mr. THOMSON. This amount is divided into three subactivities: minerals, petroleum, and coal. The $254,000 only applied to the part on minerals. There will be another $80,000 from coal, and $16,000 from petroleum.

If you consider it as a unit, it is $350,000 of the total program. The $350,000 is comparable with the 20 people we were talking about.

NET SAVINGS

Senator BARTLETT. Will that be a net savings to the Government? Does that take into account their salaries?

Mr. THOMSON. Yes, sir; it is a reduction in our appropriation by $350,000. It would no longer be available to the Bureau of Mines. It includes salaries and other expenses.

Senator BARTLETT. These people are going to be given the right of transfer?

Mr. THOMSON. That is correct.

Senator BARTLETT. Even when they are moved elsewhere, the savings to the Government will be $350,000?

Mr. THOMSON. Yes; it is difficult to get a total plan on this. When these people move, of course, it is going to cost money to move them from Juneau or Anchorage to, say, Seattle or Albany or some other place in the Bureau of Mines.

In the transfer period, they will be picked up at the other location on their payroll.

However, there may be some additional costs at the time they actually transfer.

Senator BARTLETT. How did you reach this saving, if the people are not going to be taken off the payroll? I cannot yet quite comprehend that.

Mr. THOMSON. This would be a saving in the program we are now conducting in Alaska. There are other programs in the Bureau of Mines that are increasing, so this would offset the expanded programs of other locations.

For example, we are asking for $120,000 additional funds in this budget, to fulfill the Wilderness Act, and some of these people undoubtedly will be transferred there.

FUNDS SAVED IN ALASKA SPENT ELSEWHERE

Senator BARTLETT. Are you saying that the money will not be spent in Alaska, so there will be $350,000 less reflected in budgetary expenses in Alaska, but that same money will be spent elsewhere?

Mr. THOMSON. Yes.

Senator BARTLETT. This, then, will be a paper saving. It will mean that it will not be spent in Alaska, but it will be spent elsewhere. There can be no other result, as I see it, other than a minor one, because these same people are going to be on the payroll.

Mr. THOMSON. They will be on the payroll, however it was in the evaluation of programs that brought this about, whereas it was felt in the Bureau of Mines that these other programs had to be expanded, and it is an offsetting operation.

Senator BARTLETT. I understand. The preliminary announcement relating to the practical closure of the Alaska office referred to the fact that it is costly to work there, but this was not news to the Bureau of Mines, was it? Indeed, the Department has known for a long while that Alaska is an expensive place in which to do business, and the announcement said:

> Very little has been accomplished. There is a big job to be done. Since we have done very little, and since it costs a lot of money, we are going to withdraw.

This struck us as rather odd, considering the size of Alaska, and considering the vast amount of mineral investigation to be done. And I think the Bureau of Mines has always supported this conclusion.

So it costs a lot of money, so we have not done the job yet, so we will quit doing it. In effect, that is what this contemplates, is it not?

Mr. RAMPACEK. Yes. During World War II and the Korean conflict, we expanded our exploration and development program because we felt that there was a critical need to develop our mineral resources potential to the maximum. At that time we knew it was expensive to do this prospecting and exploration work. This was under a situation of stress and critical need.

Now that we have settled back more or less into a condition of normalcy, we feel that benefits we are deriving from the program do not justify the money that is being spent for it.

Senator BARTLETT. What are you going to do with the building that will be abandoned?

Mr. RAMPACEK. It will be turned over to GSA for disposal.

CLOSING OF HEALTH AND SAFETY OFFICE

Senator BARTLETT. You are going to close the Health and Safety office in Anchorage, with two employees. Is that correct?

Mr. THOMSON. That is correct.

Senator BARTLETT. What saving will that make?

Mr. THOMSON. Probably in the neighborhood of around $4,000 or $5,000, sir. There are few mines in Alaska that are being inspected. They will continue to be inspected, but the saving will be fairly slight on this.

Senator BARTLETT. Are you sure there will be any saving at all? The announcement went on to state that this work would continue to be performed, but from Seattle. This leads to the conclusion that the people from the Seattle office who will be required to do this work, will be getting on the airplane quite frequently.

Have you figured in the transportation costs, how many trips a year they will have to make and what the added per diem expenses will be, to determine if there is going to be any saving? If you are going to do the job from Seattle, as you say you are, this would appear to be a necessary expense.

Mr. MEMMOTT. Under the mine and safety code, once a year legally is the inspection of coal mines, and this is one that we have studied since my arrival, and the workload at this time on the inspector in Alaska is 20 percent only, not 100 percent.

We feel that we cannot justify having a man stationed where he is only working 20 percent of the time.

Senator BARTLETT. Is that what he does, sit there and twiddle his thumbs the rest or 80 percent of the time?

Mr. MEMMOTT. He is a mine inspector. He is not a resource or research man.

Mr. Weaver is chief of our mine inspection department. Will you elaborate on that, Mr. Weaver?

Mr. WEAVER. We have moved the inspector from Alaska to Seattle. He now devotes 80 percent of his time in the States and 20 percent in Alaska. He travels to Alaska about twice a year to inspect those few strip mines that are active.

Senator BARTLETT. Is the office closed?

Mr. WEAVER. No.

Senator BARTLETT. Who occupies the office?

Mr. WEAVER. We have one girl in the office.

Senator BARTLETT. What does she do? Does she work full time?

Mr. WEAVER. Yes, sir. She works for mineral resources part of the time. We pay half of her salary.

COAL SAMPLING AND ANALYSIS

Senator BARTLETT. It is said that coal sampling and analysis will be handled elsewhere. Where will that be?

Mr. THOMSON. Pittsburgh, Pa.

Senator BARTLETT. Will that be more expensive than the present arrangement?

Mr. RAMPACEK. No, sir. The samples will merely be shipped to Pittsburgh and the transportation costs on the samples are not great.

ACTIVITIES OF PERSONNEL RETAINED IN ALASKA

Senator BARTLETT. You are going to leave some six people in Alaska. What are they going to do?

Mr. JOHNSON. They will be engaged largely in economic studies, in studies of opportunities for investment in the mineral industry in Alaska. They will be continuing the statistical coverage of mineral production in the State. They will be doing more in the nature of paper studies, sir, than in the physical investigation of mineral deposits.

I assume that from time to time they will make some field examinations, but the work that is being cut out is the digging of test pits, trenches, drilling, and expensive field work.

COAL COKING

Senator BARTLETT. Mention has been made earlier that the coking coal possibilities in Alaska do not appear to be too bright. That may be so. I am not an expert. I do not know. But what I do know is that the Japanese, who are large consumers of coking coal, do not comprehend, because they are sending teams over to Alaska to investigate the possibilities of obtaining coking coal.

OIL AND MINERAL DEPOSITS

You are aware, of course, that in recent years there has been a terrific increase in the amount of oil prospecting and oil production. You are aware that some pretty sizable iron ore deposits have been discovered.

Right?

Mr. MEMMOTT. Correct.

Senator BARTLETT. You are aware that Kennecott Copper Corp. has discovered a deposit on the Kobuk River, and will exploit that deposit? Were you familiar with that fact?

Mr. MEMMOTT. Yes, sir.

Senator BARTLETT. And that an oil company has said, in preliminary announcements by that company, that one of the largest iron deposits in the world is on the Alaskan Peninsula. Last year this occurred. You are familiar with that?

Mr. MEMMOTT. Yes, sir.

Senator BARTLETT. It seems to me that this indicates that more is happening in Alaska in respect to the development of the mineral potential, rather than less, and at the very time when the Bureau of Mines has concluded that it must withdraw.

Will you comment on that, Mr. Johnson?

Mr. JOHNSON. I do not think there is much to add, sir, to what Mr. Memmott said. It has simply been a weighing of the results of our work. They have been discouraging. We have been hopeful, optimistic, we have tried for many years to bring about a development of the known occurrences in minerals in the State, and it has been a

very unhappy and regretful conclusion that this money is not well spent from the point of view of our total budget.

It is partly a matter of priorities, sir.

Senator BARTLETT. All I want to say in conclusion, Mr. Chairman, is that I am glad Kennecott does not feel that way, and that most of the major ore companies do not see it that way. I am glad United States Steel has seen fit to acquire some iron ore property, and in general that there is more activity on the part of private enterprise than in the long time past.

I deeply regret that the Bureau of Mines has come to this decision.

Senator BIBLE. Is it not also true that mining has been somewhat in the doldrums until just recently? Now there seems to be some evidence of a revival.

It occurs to me that this is the poorest possible time in the world to attempt to pull out a very important segment of our governmental agencies which deals with mining.

Senator BARTLETT. I just could not understand, it and cannot understand it.

WILDERNESS ACT

Just one final line of questioning. Do you not have certain other responsibilities under the Wilderness Act?

Mr. MEMMOTT. I believe we do.

Senator BARTLETT. What are those responsibilities?

Mr JOHNSON. It is a long-range program that will continue for many years, but in the first year or two we are going to have to make surveys of the portions of national forests which the Forest Service proposes to include in the wilderness system.

Senator BARTLETT. 26 million acres in Alaska fall in this category. You are going to have to do it. Where are you going to do it, from Alaska, or from some far distant point?

Mr. JOHNSON. Whatever work there is done will be done out of Juneau, I assume.

Senator BARTLETT. I cannot follow this line of reasoning at all, Mr. Chairman. As you said, it is illogical for the Government agency primarily concerned to pull out at the very time when mining is on the upgrade, except gold; and that is what this amounts to. In my judgment, it is appalling.

I have no further questions.

Senator BIBLE. Would you continue, Mr. Memmott, with your presentation?

TENURE OF INSPECTOR

Senator MUNDT. May I ask one question?

I was intrigued by the fellow working up there 20 percent of the t me. You moved him out. This sounds sensible. How long did he stay there working 20 percent of the time?

Mr. WEAVER. It was only recently that the last underground mine was closed. The number of mines had been dwindling for some time. It was only recently that it cut down so he was not working full time.

Senator MUNDT. Was he working full time up until the close of the last mine?

Mr. WEAVER. No, he could not have been in Alaska.

Senator MUNDT. You took him out because he was only an inspector. He was not authoritative in any other field?

Mr. WEAVER. That is right.

Senator MUNDT. That makes sense, but it does not make much sense that you put him there. I do not know how he got there in the first place.

MINE OPERATIONS IN ALASKA

Mr. WEAVER. We do not have as many active mines. The underground mines have ceased operating and we only have a few strip mines left. But at the time the inspector was in Alaska, he did have work to do, and we did have underground and strip mines to inspect.

Senator MUNDT. So it is a change in the mining operation?

Mr. WEAVER. Yes, sir.

Senator MUNDT. I thought the record looked pretty shabby the way you presented it first, so I thought we should have some further discussion of that point.

Senator BIBLE. Mr. Memmott I think wants to make an observation.

Mr. MEMMOTT. Mr. Chairman, recently I believe the Defense Department also advised that there is a possibility of not using coal at some of the Army installations and Air Force installations up there. The Evans Coal people were down some time ago, and again this would take our activity away from us, if it goes to oil and gas.

DEPARTMENTAL ATTITUDE TOWARD APPROPRIATION OF DELETED FUNDS

Senator BARTLETT. That would close all mines south of the Alaska Range, yes.

One further question, Mr. Memmott. What is your judgment would happen if this situation should arise: If the committee and the Congress should not agree with the decision to close these facilities in Alaska, and wherever else it is planned to do so, and should place the money in the bill for the Bureau of Mines to maintain them, would the Department of the Interior spend such money for the assigned purpose?

Mr. MEMMOTT. My understanding, sir, is that—you gentlemen certainly are the sovereign people regarding the appropriations, and if you placed earmarked funds to the Bureau of Mines, my best judgment would be that this is the way the funds would be spent according to your wishes.

Senator BARTLETT. Thank you.

TERMINATION AND CONSOLIDATION OF BUREAU ACTIVITIES

Senator BIBLE. The balance of the justifications for your action in terminating, transferring, and consolidating your activities, stations, and facilities will be placed in the record at this point.

(The documents referred to follow:)

Boulder City Metallurgy Research Laboratory

Research at the Boulder City Laboratory will be phased out and the entire program will be transferred to the Reno Metallurgy Research Center. The effect will be a significantly stronger program and an annual savings of $132,000 after the first year.

The advantages are manifold. The Boulder City Laboratory comprises several old buildings, originally built for pilot and demonstration plant investigations, which are basically unsuitable for modern scientific research activities. Main-

tenance and upkeep costs are high. On the other hand, the Reno Center, which is not now being used to its full extent, is new, well arranged, and has nominal maintenance costs. Research at both laboratories is basically the same—determination of how molten salt processes can be applied for recovery and purification of metals. Consolidation of the program will simplify and improve supervision, will allow better use of technical and scientific skills, and will lower overhead costs appreciably.

The annual expenditure at Boulder City is approximately $750,000. The staff consists of 82 people, only 42 of which are actually engaged in research. The consolidation will render unnecessary a total of 27 positions—chiefly administrative, maintenance, and mechanical technicians—by elimination of duplicate services. All current personnel will be offered equivalent jobs at Reno or elsewhere, but the cut in total positions is expected to be made by normal attrition within the first 2 years.

TUCSON METALLURGY RESEARCH LABORATORY

The closure of the Tucson laboratory will strengthen the overall mineral processing program of the Bureau of Mines and, simultaneously, effect annual savings of $11,600 after the first year. The current Tucson research program is funded at the rate of about $100,000 annually. Only 12 people are employed; all will be offered equivalent positions at other locations.

Research programs of the Bureau of Mines are of a national character and depend on the capabilities of facilities and staff rather than on geographic location. With the advancement of science, the increase in the number of technologies involved and the necessity of expensive and diverse equipment, mineral research work requires concentrations in centers larger and more complex than exists at Tucson.

The research now conducted at Tucson will be consolidated with the broader program at Salt Lake City allowing tighter administrative control as well as more efficient utilization of equipment and technical skills. The Bureau will continue to furnish advice and services to local minerals industry interests through the mining and resources personnel who will remain at the Tucson office. As in the past, research will be undertaken on problems of local concern which are compatible with the Bureau's research goals.

NORRIS METALLURGY RESEARCH LABORATORY

As a part of the integrated program to improve efficiency in Government operations, closure of the Norris Laboratory is being undertaken. The present annual budget for the laboratory is about $300,000. The current staff consists of 32 people, all of whom will be offered transfers to other stations. Consolidation of activities, equipment, and personnel into fewer Bureau of Mines research centers is essential to make optimum use of technical leadership and scientific skills and to minimize maintenance and overhead costs. Moreover, in the recruitment of scientists, engineers, and technologists for work in minerals research, there has been noted growing reluctance on the part of young, ambitious, and promising research workers to join staffs where equipment is limited in variety and when associates in related technologic specialties are not present to provide the stimulating atmosphere in which modern research flourishes.

The action will consolidate the synthetic minerals and hard materials programs of the Norris station with the broader research program at College Park, Md. The clay testing unit is being transferred to Tuscaloosa, Ala., and coordinated into the industrial minerals activities there. A much stronger overall program is expected; in addition an annual savings of $60,000 is expected after the first year. The stronger program will be of significant advantage to Tennessee, to the entire Appalachian region, and to the Nation as a whole.

Additionally, as in the past, the Bureau will continue to furnish advice and to conduct investigations on local problems which are compatible with the overall mineral research program.

ANTHRACITE RESEARCH CENTER

After many years of attempting to help the anthracite industry by developing new uses through research and development, it has become clear that the most promising opportunities have already been investigated and that the scale of the effort should be reduced commensurate with the research opportunities available. In addition, a relatively small research laboratory is less efficient than

a large one to operate, and by combining the remaining attractive research projects with work being conducted at other laboratories, savings of $171,000 per year can be obtained.

The presence of resource personnel in the anthracite region will insure that the problems peculiar to anthracite mining, preparation, and utilization will be brought to the attention of research workers no matter where they are conducting the research.

SEATTLE COAL RESEARCH LABORATORY

The Seattle Research Laboratory includes 11 people engaged in coal research and 3 people in clay research. The laboratory is one of the oldest in the Bureau of Mines, and at the time that it was established, a flourishing coal industry existed in the Pacific Northwest. Because of the inroads, in recent years, of other fuels, coal production has declined drastically.

Several years ago, the Bureau and the university discussed the possibility of the Bureau of Mines no longer maintaining a station on the campus. However, at that time, there was still one large producing mine in operation, and it was thought that the Bureau's presence in Seattle would be useful in maintaining an interest in coal as a resource. Since that time, this mine has closed, and production in the State of Washington has declined to less than 60,000 tons a year. Therefore, by consolidating the research being conducted in Seattle with similar research conducted at other Bureau stations, savings could be made after the first year (during which the equipment was transferred).

We intend to maintain a Bureau of Mines man in Seattle so that he can serve the remaining coal industry, but we do not believe that there are sufficient justifications to actually conduct research at that location.

The clay laboratory is also located in Seattle and is staffed by one professional and two nonprofessional personnel. Transfer of two of these people to Albany will result in improved supervision, the availability of superior facilities for research, and the ability of these personnel to associate with workers in allied fields. The same professional employee who is serving the coal industry will also serve the local nonmetallics industry in Seattle.

DENVER COAL RESEARCH LABORATORY

In addition to the Denver Coal Research Laboratory being one in a series of moves involving the consolidation of a number of scattered research activities of the Bureau, transfer of the Denver Coal Laboratory to Grand Forks will allow the latter station to operate at a higher level of efficiency.

Because two coal research laboratories have been maintained in the western part of the United States, it has never been possible to adequately staff the Grand Forks laboratory, due to insufficient funds. This has resulted in the laboratory operating at less than maximum efficiency since the cost of maintaining the buildings, grounds, and utilities is almost independent of the number of research projects at that location. Consolidating the facilities will enable us to overcome this inefficiency.

With availability of resource personnel in Denver knowledgeable about coal reserves and coal industry problems of the area, we can be certain that the research of special interest to western coal will be brought to the scientists' and engineers' attention. Thus, we will be able to serve the industry and at the same time achieve increased efficiency through the consolidation of facilities.

RENO MINING RESEARCH LABORATORY, RENO, NEV.

The Reno Mining Research Laboratory is a small unit (eight employees) engaged in open-pit slope stability research which is a special phase of the more general research area of ground stabilization and control. By consolidating this work with the major functions of research on ground stabilization and control conducted at the Denver Mining Research Center it can be carried on more efficiently and with better utilization of the correlated disciplinary talents of the research personnel at both Reno and Denver.

APPLIED PHYSICS LABORATORY, COLLEGE PARK, MD.

The recent establishment of new mining research centers and orientation of the program toward greater emphasis on developing engineering principles of direct application to mining has introduced a change in the traditional scientific role of the Applied Physics Laboratory. Consolidating the research conducted

by the Applied Physics Laboratory with that of closely affiliated research at the Denver and Minneapolis Mining Research Centers will promote better communication between related research programs and better utilization of the high caliber research talent of the Applied Research Laboratory. Consolidation will improve the efficiency of total research efforts and allow better programing to more quickly attain specific objectives. Research conducted by the Applied Physics Laboratory is of general national interest, so relocation would not be of local concern or affect any specific segment of the mining industry.

REORGANIZATION OF THE BUREAU OF MINES HEALTH AND SAFETY FIELD AREAS

To improve and simplify management and to effect dollar savings, the health and safety activity will reduce the number of field districts from nine to five. This will be accomplished without loss of efficiency or effectiveness and without impairing our services.

Four of the present district offices (Dallas, Duluth, Wilkes-Barre, and Birmingham) will be reduced to subdistrict status with no change in personnel. The subdistrict office of Jellico, Tenn., will be abolished as a subdistrict headquarters, but the office will be continued in use by the force of coal mine inspectors now headquartered there.

Two of the four clerical personnel now at Jellico will be transferred to Birmingham, Ala. (the subdistrict headquarters) to type the reports prepared by the Jellico inspectors and perform related work. The other two clerical personnel at Jellico will be offered positions at other field offices where there is need for their services.

The health and safety office at Anchorage, Alaska, will be closed. Inasmuch as the coal mine inspection workload in the Alaska area has been reduced to the point where only 20 percent of the inspector's time could be utilized on coal mine inspection work, it was necessary to transfer the headquarters of the one coal mine inspector from Anchorage to Seattle where the remaining 80 percent of his time could be utilized fully and effectively. This transfer does not in any way impair the health and safety services in Alaska inasmuch as the inspector will visit the Alaska mines about twice each year and will be quickly available for any emergency situation that might arise. Inasmuch as the inspector's reports, correspondence, etc., are being typed by the present force at Seattle, there is no need to continue employing the one clerk-typist at Anchorage or to continue maintaining the office space there. The clerk-typist will be offered a position at another installation.

This reorganization plan for the health and safety activity will result eventually in a savings of approximately $35,000 annually.

Senator BIBLE. I shall, of course, leave the matter open for any questions on this particular subject of the Senators who are present.

The Senator from West Virginia.

Senator BYRD. I have some questions later, Mr. Chairman.

Senator BIBLE. The Senator from South Dakota.

Any questions on this particular phase, or anything else?

Senator MUNDT. Not on terminations. I have a couple questions I should like to ask him on other matters.

Senator BIBLE. Why do you not ask him?

COMPARATIVE STATEMENT OF 1964 AND 1965 APPROPRIATIONS AND 1966 BUDGET ESTIMATES

Senator MUNDT. I looked to see whether there was a consolidated table showing the Bureau's appropriations for fiscal years 1964, 1965, compared with 1966. We usually get that from each division. I did not get that from your justification.

If it is there and I did not find it, just earmark it, but if it is not, will you prepare one and present it?

Mr. THOMSON. It was not presented in our budget in that manner, but I will prepare it.

Senator BIBLE. It will be included in the record.

(The statement referred to follows:)

Summary of appropriations

	Appropriation, 1964	Adjusted appropriation, 1965 [1]	Estimate, 1966	Difference
Conservation and development of mineral resources	29,404,000	30,891,000	31,625,000	+734,000
Health and safety	8,664,000	9,536,000	9,507,000	−29,000
General administrative expenses	1,460,000	1,469,000	1,529,000	+60,000
Helium (borrowing authority)	6,000,000	14,000,000	16,780,000	+2,780,000
Total	45,528,000	55,896,000	59,441,000	+3,545,000

[1] Includes pay cost supplemental.

PERCENTAGE OF COAL MINED IN WEST VIRGINIA

Senator BYRD. What percent of the deep mine coal in the United States would you say is mined in West Virginia?

Mr. MEMMOTT. Forty percent of the deep mine coal is mined in the State of West Virginia and West Virginia is also the No. 1 coal producer in the Nation.

HEADQUARTERS OFFICE, MOUNT HOPE, W. VA.

Senator BYRD. I understand that the General Services Administration is planning to add another story to the headquarters office at Mount Hope in Fayette County, W. Va. Would you brief us on the time the construction will begin, and when you expect it to be completed, and the cost, et cetera?

Mr. MEMMOTT. If I am correct, construction work on the third story will start at the end of 1965, and regarding the cost, I don't have this on my cuff. Do you have that, Mr. Weaver?

Mr. WEAVER. A cost of $282,000 for the construction itself.

Senator BYRD. What will be the cost of the design work?

Mr. WEAVER. That is $16,500 for the design work.

Senator BYRD. Has an architect been assigned to design the additional story?

Mr. WEAVER. Yes, sir, already assigned.

Senator BYRD. And you anticipate that construction work will begin when?

Mr. WEAVER. By the end of calendar year 1965.

Senator BYRD. And when do you think it might be completed?

Mr. WEAVER. I don't have the completion date. It wouldn't take very long because the third story was anticipated when the building was constructed in 1958 I believe.

Senator BYRD. How many persons are housed in the building at Mount Hope?

Mr. WEAVER. At the present time 80, in the neighborhood of 80, 79, or 80. It is very congested. We need more space so that the facilities in the building can be used for the purpose they were originally intended. We have laboratory people working in locker rooms and we have office people working in laboratory space. It is quite congested.

NEW MARKETS FOR COAL

Senator BYRD. What research projects of the Bureau of Mines appear to be reaching the point where new markets for coal will result?

Mr. MEMMOTT. I had better yield this to Mr. Perry, our Director of Coal Research.

Mr. PERRY. In order to make much of an impact in coal we have to look toward large tonnage uses. At the present time I would say that the use for which there might be large tonnages would be as a substitute for natural gas. That is the use that is closest to coming to economic fruition. As I am sure you are aware, the price of natural gas in the field keeps going up and we know that our research has brought the price of gas from coal down. We hope that the new coal processes will compete soon.

At the same time with the utility market being the only really large growing market that we have, much of our work is directed toward making coal economic for use by the electric utilities.

Senator BYRD. What work at your Morgantown, W. Va., laboratories is directed toward these objectives?

Mr. PERRY. Well, the two major efforts at the Morgantown, W. Va. laboratories are the coal-fired gas turbine and low temperature tar; that is, finding new uses for tar. Both of these are aimed at making coal a more attractive fuel for the electric utilities industry. In the case of the coal-fired turbine, if we could make one operate for long enough periods of time there is a possibility of increasing the efficiency of central station plants enough, so that as much as $100 million worth of coal a year would be saved in the generation of electricity, making electricity more attractive as a form of fuel. In the case of the low temperature tar, if we could get byproduct credits for the tar, then again we would be increasing the market for coal and in this case too providing a lower cost fuel to the utility industry.

LOW TEMPERATURE TAR

Senator BYRD. What is the status of your effort in connection with the introduction of low temperature tar?

Mr. PERRY. At the present time, after a number of years of intensive work, we have now developed a scheme which will permit us to know in great detail, and at very low cost, what is in the tar. Based on two new recent discoveries, we have a processing scheme which we think will be economically attractive, and we are now working out the details of two of the process steps.

After that we would be very anxious to test the entire processing method to show that we have developed an attractive use for low-temperature tar.

One of the very large outlets is for detergents. Low-temperature tar has many chemicals in it that can be used to make detergents; as you know because of your interest in water pollution, there is increasing pressure to make all detergents biodegradable.

Senator BYRD. How long have you been pursuing this effort?

Mr. PERRY. We started in about 1958.

Senator BYRD. Have you reached the point where you envision the feasibility of a pilot plant?

Mr. PERRY. When we have finished studying these two process steps that we still need to investigate I would say that this would be the next step; yes, sir.

Senator BYRD. You would then anticipate the necessity for a pilot plant?

Mr. PERRY. Yes, sir.

Senator BYRD. What is your estimate of the time which you will need to reach this stage of development?

Mr. PERRY. We have great hopes that by the end of this calendar year we will have information which will let us know whether our efforts in this direction have been fruitful and if the economics are attractive.

Senator BYRD. At this time you would be of the opinion that you will reach a stage where a pilot plant might be advisable.

Mr. PERRY. A decision will have to be made, yes, sir.

Senator BYRD. In other words, you are optimistic about this process?

Mr. PERRY. Yes, sir.

COAL-FIRED GAS TURBINE

Senator BYRD. What more needs to be done on the coal-fired turbine?

Mr. PERRY. As you know, we have done this in cooperation with the Bituminous Coal Research, Inc. This was their turbine that we borrowed. We have now put 2,000 hours of operating work on it. Now with their concurrence we have torn this piece of equipment down.

We now know what needs to be done on the next design, except for two or three points that we want to investigate. This we think will take approximately 5 years at about our present level of effort. At the end of that time we should have a turbine which we think will be acceptable to the electric utility industry.

They told us that they need between 50,000 to 100,000 hours of operating time. We think from what we learned on these last 2,000 hours of operation that the equipment manufacturers—we have had them in and talked to them about this—would indeed be willing to design a turbine that would last that long.

The problem now is that we are using a turbine designed for much lower temperatures than would occur in practice because we didn't have funds to invest in a new turbine.

We think we can do more work on a single-stage turbine at much lower cost and think it will take about 5 years to work out the engineering.

ADEQUACY OF FUNDS FOR COAL RESEARCH

Senator BYRD. Do you feel that you have sufficient moneys in the budget to adequately carry forward your work on the coal-fired turbine and also your work in connection with a low-temperature tar process?

Mr. PERRY. We think with the funds that are made available, that we have picked out the highest priority projects. As the Senator knows, in research there are always more projects than there are dollars. So we always have to pick out the highest priority ones, and we think we have in this case.

If we need a pilot plant for low-temperature tar we don't have funds in the budget for that yet.

Senator BYRD. I believe you indicated that you might reach a point where a pilot plant would be needed before fiscal year 1967?

Mr. PERRY. We hope to, yes.

Senator BYRD. Possibly sometime during the forthcoming fiscal year 1966?

Mr. PERRY. Yes, sir.

Senator BYRD. Can you indicate to the committee what the estimate of cost might be for such a pilot plant?

Mr. PERRY. We haven't reached the point of designing the plant. We would need some money for planning, of course. Based on past experience we would need about $100,000 to do this, that is, the planning step. I would guess that a pilot plant of the scale that we would think necessary to demonstrate both the engineering and the economics would be in the neighborhood of $2 or $3 million, but this is a guess at the moment.

Senator BYRD. Do you see in the low-temperature tar, if the process proves to be successful, quite an additional market for coal? As a result?

Mr. PERRY. I look at it this way, Senator. It is not the same thing as trying to sell the utility market. It will never be this type of market. On the other hand, we may make coal more attractive to the utilities by getting a valuable byproduct. Just as in the case of the petrochemical industry, while this does not represent a large outlet for petroleum, it is a profitable one and I think the same situation would be true for coal.

It may not be very large in total tonnage, but it may be very profitable.

Senator BYRD. Could you use any additional funds over and above the budget estimate for either or both of these projects?

Mr. PERRY. Within the President's budget, as I say, we are doing this work as best as we can. I don't think that we could justify any further expenditures within the framework that we have been given at this time.

COORDINATOR OF OCR AND BUREAU OF MINES PROGRAMS

Senator BYRD. Is there any overlapping with work being done in OCR?

Mr. PERRY. No, sir. We for the last year now, to the best of my knowledge, have had an opportunity to review each of the projects that OCR is in the process of considering for funding and at an early stage. We have been asked to review these, sometimes with regard to complete technical evaluation. In all other cases we have been asked as to whether this duplicates any work that we have underway or plan. I can assure you that there is no duplication in the present budget.

Senator BYRD. There will be no duplication in connection with the coal-fired turbine?

Mr. PERRY. No, sir.

Senator BYRD. And none with the low-temperature tar?

Mr. PERRY. No, sir.

Senator BYRD. Would there be any duplication or overlapping in connection with the coal gasification project?

Mr. PERRY. No, sir.

COAL GASIFICATION

Senator BYRD. What do you have in the works with reference to coal gasification?

Mr. PERRY. We have two major projects at the moment. One is at Grand Forks, N. Dak., in which we are operating a slagging gasifier, on lignite really, although eventually we hope it will be amenable to all coal. Secondly, we have a producer gas program which we are currently getting started at Morgantown in which we will test what we can do from an economic standpoint to make producer gas under pressure and in the slagging gasifier, which has to my knowledge not been done in this country.

Senator BYRD. Do you have sufficient moneys in the budget in your estimation to carry on this work adequately and expeditiously?

Mr. PERRY. We have enough money to do what we planned to do for 1966; yes, sir.

Senator BYRD. Do you foresee any necessity for a pilot plant project?

Mr. PERRY. Not at this time. It is too premature.

Senator BYRD. Thank you, Mr. Chairman.

Senator BIBLE. Thank you. Any further questions?

PROPOSED CLOSING OF BOULDER CITY METALLURGY RESEARCH LABORATORY

I would like now to go into the phaseout at Boulder City, for the Bureau of Mines. As I understand it, the decision on this particular project was made by five Assistant Directors. Is this correct?

Mr. MEMMOTT. If I may answer this way——

Senator BIBLE. Any way you want. Just tell me who is responsible.

Mr. MEMMOTT. We actually are guided by the Secretary's Office regarding our cost reduction and manpower utilization studies and Boulder City was one that the assistant directors were involved in under metallurgical research. Mr. Ray Wells is very well acquainted with the Boulder City operation. Ray, would you come up here.

Senator BIBLE. Why don't you have Mr. Ray Wells come forward?

Mr. Wells, why don't you tell us about the phasing out of the Boulder City Station, Bureau of Mines. Obviously this has caused considerable concern to the good people of this area. Just tell us how the decision was arrived at, when it was arrived at, and who arrived at it?

Mr. WELLS. The decisions to close all the metallurgical stations that are before the committee today were made by a group of people who studied the details quite thoroughly in my office. I recommended to Mr. Rosenbaum that these three closures be made under this program.

Senator BIBLE. When did you make that recommendation?

Mr. WELLS. I can't give you an exact date.

Senator BIBLE. Approximately.

Mr. WELLS. Three months ago. On the Boulder City station, as you probably know, Senator, we inherited the first two buildings from the five companies that built the dam. One was a garage. The other was a warehouse. Later we put up a number of pilot structures to do some pilot investigations that we were engaged in at the time, in the early and late phases of World War II.

Most of these buildings are 25 to 30 years old now and they are very difficult to maintain. On the other hand, at Reno we have a building

put up I think in 1954 that is not being fully utilized. The program is very similar. Both research laboratories are working on electrochemical methods for extracting and refining of various metals and alloys from ores or chemical compounds.

The administration of such a program must be centralized. It has been directed from Reno for the last year and a half. The supervision of the program long distance between Reno and Boulder is difficult. But the most important item leading to the decision for consolidation of facilities was the cost of upkeep at the Boulder City station. We actually have more people in support services at Boulder City than we have in actual research, 42 to 40. This is the only station where we have this situation.

Senator BIBLE. What do you mean by "support services?" What type of people?

BOULDER CITY AND RENO PROGRAMS COMBINED

Mr. WELLS. The services of maintenance, repair, and mechanical services to the research operations. Also I include in this the analytical services which are normal to the various research centers and the administrative services including clerical and personnel work.

We would hope by combining these programs at Reno that we would have a lesser number of administrative people necessary to carry the load, considerably less maintenance people, and a few less in the analytical chemical services.

Senator BIBLE. Why couldn't you eliminate some of those at Boulder City and keep your operation there?

Mr. WELLS. Because we are having trouble keeping the plant going at Boulder City. There is a very high maintenance operation at Boulder City.

Senator BIBLE. Do you need that much maintenance in Boulder City?

Mr. WELLS. Yes; if we keep the program going at the level that we would hope to keep it going.

Senator BIBLE. And what is your total level now? Eighty-two; is that correct?

Mr. WELLS. Eighty-two people; yes.

Senator BIBLE. You mean to tell me that, out of those 82 people, 42 of them are occupied in maintaining the other 40?

Mr. WELLS. Yes, sir.

Senator BIBLE. Is that what you are saying?

Mr. WELLS. Yes.

Senator BIBLE. Can't that be improved?

Mr. WELLS. We have been trying to improve it through the years. We have it down to this point.

Senator BIBLE. If you moved it to Reno, how many of that number would you save?

Mr. WELLS. We hope to save a total of 27 people.

Senator BIBLE. What type of people?

Mr. WELLS. There would be 15 of them in the trades area: carpenters, machinists, electricians, and so on. Six would be in clerical and administrative help and six would be in the chemical area.

Senator BIBLE. I take it you have been to Boulder City personally and visited the plant?

Mr. WELLS. Yes, sir.
Senator BIBLE. When were you there last?
Mr. WELLS. About a year ago.

BOULDER CITY PLANT INVESTMENT

Senator BIBLE. And how much money has the U.S. Government invested in the Boulder City plant?
Mr. WELLS. Over the years, I couldn't guess it.
Senator BIBLE. I notice, here, that it appears to be something in the neighborhood of $2 million. Does that seem to be a fair figure?
Mr. WELLS. You mean the total plant? Yes; about $2 million would be about an approximate value now.
Senator BIBLE. It has been called to my attention that you have done a great deal of repairing and maintenance within the last year. Do you know how much you have spent in repairing and rehabilitating Boulder City?
Mr. WELLS. I do not.
Senator BIBLE. I wish you would supply that for the record.
Mr. WELLS. I will be glad to.
Senator BIBLE. Because they are making the point that, over the last year or the last 2 years, you have repaired—and admittedly there is some age in this facility——
Mr. WELLS. Repair and improvements at Boulder City.
Senator BIBLE. I would like to have that for each of the last 5 years, if I might, for the record.
(The information referred to follows:)

The following table lists the expenses at the Boulder City Laboratory for maintenance, repairs, building improvement, and mechanical services for the fiscal years 1960–64:

Year	Labor			Purchases		Total
	Building improvement [1]	Maintenance [2]	Fabrication [3]	Nonexpendable [4]	Expendable [5]	
1964	$52,000	$50,000	$27,000	$4,000	$23,000	$156,000
1963	52,000	50,000	22,000	20,000	23,000	167,000
1962	39,000	52,000	25,000	28,000	33,000	177,000
1961	40,000	45,000	24,000	154,000	43,000	306,000
1960	44,000	40,000	22,000	78,000	39,000	223,000

[1] Laboratory renovation and improvement.
[2] Includes dismantling of old buildings, relocation of fence lines, automotive and yard maintenance.
[3] Fabrication of laboratory apparatus (electrolytic cells, furnaces, etc.).
[4] Scientific equipment, laboratory furniture, and shop equipment.
[5] Supplies, repairs, and contractual services (excludes chemicals, glassware, saw bits, photoplates, spectrographic electrodes, etc.).

REMOVAL OF PLANT COST

Senator BIBLE. Have you made any estimate as to how much it will cost to move from Boulder City to Reno, Nev.?
Mr. WELLS. Yes, sir.
Senator BIBLE. How much do you estimate?
Mr. WELLS. We feel that the savings the first year would be entirely used up by the move and that after the first year we would save $132,000.
In other words, we are figuring about $130,000 for the move to be done in the first year.

Senator BIBLE. How do you calculate the saving of $130,000 the first year?

Mr. WELLS. After the first year. This is based mainly on the 27 fewer employees.

Senator BIBLE. That is your saving after the first year. How much is it going to cost you to move?

Mr. WELLS. We expect to do it for the authorized money. In other words, there will be no saving the first year. It would cost the $130,000 to move.

Senator BIBLE. That is what I thought you said, and now you are articulating your statement and saying it is going to cost you $130,000 to move.

Mr. WELLS. Yes.

Senator BIBLE. How do you arrive at the $130,000?

Mr. WELLS. This was a calculation—I don't have the figures with me—of the number of people to be transferred, the average amount of cost on their goods, the cost of the equipment to be moved, and all of the details, cost of transferring the files, and so forth.

Senator BIBLE. Will you do any repairing, remodeling, or renovation of the building in Reno?

Mr. WELLS. Very little, less than I originally expected. There probably will have to be an additional service line for electricity run in. This will be about all. I originally figured that they would use about $25,000 on repairs and remodeling, but apparently it will not be anywhere near this.

Senator BIBLE. Would it be $5,000?

Mr. WELLS. Perhaps $5,000 at the outside.

Senator BIBLE. And the total cost is $132,000?

Mr. WELLS. Yes.

Senator BIBLE. Will you move some of the machinery and equipment which is in place in the Boulder City Bureau of Mines to Reno?

Mr. WELLS. Yes, sir.

Senator BIBLE. Do you know how much it will cost you to do that?

Mr. WELLS. We have an estimate. I don't have the figures here. These are all estimates at this point because until we actually take an inventory of what we are going to move and how we are going to move it, which is going on now, I don't have any definite figures.

LOSS IN RESEARCH

Senator BIBLE. Do you have any idea of the loss of time resulting from research that gives you a figure. In other words, there certainly is going to be a hiatus if you take the group from one place and move them to another.

How much research time will you lose?

Mr. WELLS. I would guess about 2 months total.

Senator BIBLE. What does that mean in dollars and cents? Is that calculated in your $132,000?

Mr. WELLS. No, this is not calculated in the $132,000. We have a scheduled move. One phase or project will be moved today and another laboratory at another time, getting them into Reno and settled before tearing up the rest of it. This is scheduled over the entire next year and we figure that this is a minimal loss of time. Only for the period required for a small group to move from Boulder City

to Reno and to get reestablished will the research of that particular group be interrupted.

In the meantime the research will be continuing by all the other groups.

GROWTH OF SOUTHWEST

Senator BIBLE. If I understand this correctly, if you make the transfer from Boulder to Reno this will take away from the Southwest the last available Bureau of Mines activity in metallurgical research. Is that correct, because you are also phasing out the Tucson plant, as I understand it.

Mr. WELLS. This would be correct.

Senator BIBLE. One of the real concerns of the people in that area is the fact that, over the years, these two plants have served the entire Southwest and it goes without saying—I mean the statistics will clearly prove—that this is the fastest growing area in the entire United States. Just as an example, the population of Clark County itself has doubled in 4 years, and the estimate is that it is going to double again in another 4 years.

I can't vouch for the accuracy of the projections, but I can vouch for the accuracy of the past history. This growth and this resurgence in mining leads the people there to believe that they should have a laboratory very, very handy and available to them.

Hasn't this been a valuable adjunct to the mining industry and to the metallurgical industry in this Southwest area in the past few years?

Mr. WELLS. It has indeed, but we believe that with the faster transportation we have today we can give equally good service from Salt Lake and Reno.

Senator BIBLE. Do you know whom you have served in the area over the last few years? You say you are an expert in this field and that you visited there a year ago. Do you know what type of services you performed there in the last 4 or 5 years, and to whom?

Mr. WELLS. I couldn't answer that question, no, sir, not in detail.

ADAPTABILITY OF RESEARCH TO CLIMATE

Senator BIBLE. The point is made and made to me by those in possession of the facts that this is an area of admitted dryness. I mean it is in the desert and there are certain types of research that are more adaptable to that particular type of climate.

Would you want to comment on that? You are from Carbon County. You are a neighbor of ours. You have some problems up there as well, but they claim that there are some research projects, particularly in the field of salt research, which are done best in an area of this kind with a dry climate. I don't know. I am not a metallurgist.

Mr. MEMMOTT. Ray, do you know of any specific one?

Mr. WELLS. I don't know of any specific one they might have in mind. They might have a problem with some of the fused salt work becoming damp during electrolysis if it is not in a dry climate. A surprising fact, however, is that a good portion of the industry that has taken up this fused salt work happens to be located in the Southeast which has a damp climate. The problem can be whipped by a a different design of the cell, so it has been overcome industrially.

Senator BIBLE. Was this dry climate taken into consideration at the time that you made this shift?

Mr. WELLS. We have taken almost everything we can possibly take into consideration.

Senator BIBLE. You made your decision and then followed with your reasons to justify it. Is this correct?

Mr. WELLS. No, sir.

Senator BIBLE. I am advised that some of the salt about which I am inquiring is hygroscopic salt, that this area has no equal anywhere for handling hygroscopic salts which are used in quantity research in electrolytic refining and electrowinning of rare metals.

Mr. WELLS. Hygroscopic is a term which means the ability to take on water, and in a dry climate of course it takes on much less water than in a wet climate, but this can be overcome by the design of the cells or design of the room in which the cells are used.

BOULDER CITY RESEARCH PROJECTS

Senator BIBLE. How many research projects do you have going at Boulder City now?

Mr. WELLS. About 10.

Senator BIBLE. What is the state of those projects? Will they go forward, or will they be terminated?

Mr. WELLS. There is one scheduled for termination whether the move is made or not. The others will go forward.

Senator BIBLE. In Reno? Is this what you are saying?

Mr. WELLS. In Reno.

Senator BIBLE. Or will you complete them in Boulder City?

Mr. WELLS. No, we would complete them in Reno.

METALLURGICAL PROJECTS TO BE UNDERTAKEN

Senator BIBLE. How many projects do you have in your advance programing for the metallurgical labs of the West and Southwest in the next several years?

Mr. WELLS. I would have to look that figure up because I don't have it in mind by geographical location. We have about 138 total metallurgy projects scheduled for 1966 and it will continue at about that level throughout the next few years. We are down to about the minimum number of projects we can operate efficiently.

Senator BIBLE. Is the life of these projects 2, 3, 4, or 5 years, or will you have projects coming along to keep you going indefinitely?

Mr. WELLS. We always have more ideas than we have money to operate, so we will always have more projects in the offing than we are investigating. To answer your question on timing, there are some projects that last only 1 year. This is likely to be a lead that we try; if we find it is no good we fold it up before we spend too much money on it.

A normal project will last at least 3 years and I would say on the average they will last 4 to 5 years because a few of them may extend into 7, 8, 10 years, depending on the area of research we are in.

For example, our thermodynamic work in California. We have been working in this area for years and years. It is one of our most profitable areas. We don't intend to close it simply because we have been doing this work for a long time.

BERYLLIUM RESEARCH

Senator BIBLE. How about your beryllium project. Are you still doing work in the field of beryllium?

Mr. WELLS. Yes.

Senator BIBLE. Where do you do that?

Mr. WELLS. We do that at Boulder City. We are working on a project of refining at Boulder City. We are working on some ore dressing or preconcentration of domestic ores at Salt Lake City as well as some chemical extraction work at Salt Lake City where we take beryllium into solution and recover the salts in the usual manner.

Senator BIBLE. Do you have any timetable as to when you may complete your projects on beryllium?

Mr. WELLS. Yes, sir; we do. I don't have it with me.

Senator BIBLE. Could you supply that for the record?

Mr. WELLS. I certainly will.

(The information referred to follows:)

STATUS OF METALLURGY RESEARCH ON BERYLLIUM

Research directed toward various phases of the metallurgy of beryllium is being conducted at three research centers:

1. Beneficiation and extractive metallurgy

The objective of investigations conducted at Salt Lake City, Utah, includes development of flotation procedures for concentrating domestic beryllium ores, preparation of concentrates, and development of subsequent chemical processes for extracting valuable beryllium oxide content. The program was begun in fiscal year 1958. Expenditure in current fiscal year is $100,000; $90,000 is planned for fiscal year 1966. The mineral dressing phase of the program may reach completion next year; chemical extraction work is expected to continue through fiscal year 1968.

2. Chemical reduction studies

An investigation is being carried out at Albany, Oreg., aimed at developing an improved procedure for preparing high-purity beryllium metal through metallic reduction of both beryllium chloride and beryllium oxide. The project was begun in fiscal year 1961 and is expected to be completed in fiscal year 1966. An expenditure of $80,000 is called for this fiscal year and next.

3. Electrometallurgy of beryllium

A project at Boulder City, Nev., is designed to investigate the feasibility of electrowinning beryllium metal from the oxide utilizing a fused-salt electrolyte. This project started in July 1964 and probably will continue through fiscal year 1967. It is funded at the rate of $35,000 annually. An earlier study, now completed, encompassed preparation of high-purity beryllium by electrorefining crude metal and scrap.

4. Fabrication methods

As a part of a broader program at Albany, Oreg., concerning fabrication techniques applicable for refractory metals, research is being conducted on beryllium metal. High-energy rate forming is one of the methods under investigation. This program started in 1963; the beryllium phase is expected to be completed this fiscal year. Expenditure has been at the rate of $40,000 annually.

TUNGSTEN RESEARCH PROJECT

Senator BIBLE. How about the field of tungsten? You did a lot of research at Boulder City on tungsten a few years back. Have you completed this area of study?

Mr. WELLS. No, sir; tungsten has the highest melting point of any metal we have. From this standpoint people keep getting reinterested in tungsten to determine, if by alloying tungsten, a

material can be made with 20° higher use range. So our program in tungsten will probably be run on for several years in one phase or another.

We have been quite successful, incidentally, at the Nevada units, in electrowinning tungsten from ore. This, in the past, has not been looked upon as being an economic affair, but we are very happy to report that in the last year two companies have looked at this technique. They have gone into pilot plant study of our method of electrowinning tungsten from ore and we hope they will go into production.

Senator BIBLE. What you are saying there is still more work to be done in this field?

Mr. WELLS. Yes, sir.

TITANIUM

Senator BIBLE. How about titanium? Where do you stand in the research projects on titanium?

Mr. WELLS. We feel that we will probably postpone any major work on titanium for awhile. We like to carry work only to the stage where industry will take over, and industry has not taken over to a large extent on titanium.

Should anything new come up so that we feel it would be to the benefit of the Government for us to resume research, then we could initiate some additional work, but right now we would phase it off.

SILVER AND GOLD RESEARCH

Senator BIBLE. What about silver? What projects do you have in silver?

Mr. WELLS. We have two projects at Salt Lake City. One is a review on the state of the art of silver metallurgy. To our knowledge, nobody has really made a study of this for several years. We hope to have a report out in about 2 months.

GOLD

Senator BIBLE. How about gold?

Mr. WELLS. On gold, as with silver, we have a research study on precious metal recovery by new techniques such as solvent extraction that have come into being since the boom days of gold and silver metallurgy. New techniques applied to old metals.

FERROMANGANESE RESEARCH PROJECTS

Senator BIBLE. How about ferromanganese. At one time you did some rather effective work at Boulder on ferromanganese ores. What are you doing in that field now?

Mr. WELLS. Nothing. The Bureau's manganese program was one which unfortunately got a little bit out of hand through the years. We did a tremendous amount of research work on manganese. In the last 4 or 5 years we have accomplished very little.

We have now cut this back to only two projects, one of which is a review of catching up the loose ends of different methods that we have looked at, a paper study, if you will, at College Park, Md. The other one is an extraction study on an iron manganese ore from Minnesota.

This is primarily an iron ore, but it cannot be treated economically unless you simultaneously take out the manganese. These are the only two manganese projects that we will have left in 1966.

Applied Physics Laboratory

Senator Bible. On your projection, what do you do at College Park, Md? Are you moving some of the project some place?

Mr. Memmott. Yes, that is correct, Mr. Chairman. The applied physics laboratory will be moved to Denver, Colo., where we have our mining research headquarters, and also Minneapolis, Minn. There we have people of similar competence who complement each other in their research work.

Removal of College Park Research Center

Senator Bible. A few years ago—I have forgotten how long—the very distinguished president of the University of Maryland made a presentation before a legislative committee, of which I happen to be the chairman, asking for legislation to permit the Bureau of Mines to make an exchange so that they could move them out of the University of Maryland because they were having growing pains and needed more room on the campus. The Bureau of Mines, at the same time, was asking for a rather high figure for building another new Bureau of Mines building.

Is that still on your drawing boards? Do you still plan on that construction, or have you abandoned it?

Mr. Rampacek. This is for the Frederick, Md., construction?

Senator Bible. I don't know where you were going to put it. You were going to take it out of College Park and you were going to move it somewhere else. I thought maybe you could move it to Boulder City. Is there any reason why you can't do that, because this was ferromanganese, if I am correctly advised. This was a ferromanganese project out here at College Park, Md. The University of Maryland wanted you off the campus. The Bureau of Mines wanted to get off, provided they could get a brand new building at a cost of—I don't remember the exact figure, but the record will show it—several hundreds of thousands of dollars.

My point is since you gentlemen are so greatly interested in economy, and I share that, why couldn't you move part of that project out to a going plant at Boulder City, Nev.?

This was before you came aboard, Mr. Memmott, so I won't hold you personally responsible. Maybe we will find one of your five assistants who is.

Mr. Thomson. First, with respect to College Park, there was legislation introduced to provide for conveyance of the Bureau facilities to the State. I understand now that the University of Maryland is not quite so concerned about getting us off the campus to use that space as they were a few years ago. Present plans call for continuation of the metallurgical research at College Park.

Your second question on asking whether this work could not be done at Boulder City, I don't think I am technically capable of answering that.

Senator Bible. Do we have somebody capable of answering it.

Mr. WELLS. We are not anxious to leave College Park.

Senator CANNON. We are not anxious to have you leave Boulder City either.

Senator BIBLE. You gentlemen are completely aware, I am sure, that this is my colleague who comes from Clark County, and who also has a vital interest in this particular proposal to phase out Boulder City.

MANGANESE PILOT PLANT AT OACOMA, S. DAK.

Senator MUNDT. Some years ago some experimental work was done on manganese deposits out near Oacoma, S. Dak. There was some kind of a pilot plant there. Is that run under your jurisdiction?

Mr. WELLS. No, sir. At this time I was in Salt Lake City.

Senator MUNDT. In the Bureau of Mines.

Mr. WELLS. In the Bureau of Mines; yes, sir.

Senator MUNDT. And in those days we talked about an electrolytical process of some kind and the ore was sent to a place called Rolla.

Mr. WELLS. Rolla, Mo.

Senator MUNDT. Do you have a manganese experimental plant or something?

Mr. WELLS. Not any longer; no, sir.

Senator MUNDT. That has been closed?

Mr. WELLS. Yes, sir.

BOULDER CITY CLOSURE

Senator BIBLE. Might I ask you as to what you propose doing if you phase out the Boulder City Station Bureau of Mines? I certainly hope this can be prevented. Some effort is going to be made to see that it is prevented. What will you do with the property and the buildings? You say that they are worth about $2 million? What will you do with them?

Mr. MEMMOTT. GSA would dispose of them or make them available to other agencies.

Senator BIBLE. You are a good judge of western values. How much do you think you would receive for it if you sold it on the block? Would you get $2 million for it?

Mr. MEMMOTT. I would be reluctant to advise on the Boulder area. I could comment on the Carbon County area, however.

Senator BIBLE. I assume Carbon County still is depressed as it was. The last time I was there you couldn't get very much.

Mr. MEMMOTT. Off the record.

(There was discussion off the record.)

Senator BIBLE. You have no idea at all.

Mr. MEMMOTT. No sir; I am not a competent judge on this matter,

Senator BIBLE. Because I understand that the facility stands at about $2 million, that even as recently as the last few months you have done extensive remodeling, or repainting, or spending Government funds on it, and your present proposal to junk it, I am just wondering if this is sound economy. Even under your own projections, the most that you are going to save—these are projections, and I have found that bureaucratic projections are usually erroneous—is $132,000 after the first year.

You save nothing the first year, admittedly. The second year you hope to save $132,000. You are going to rif 27 people, and I sincerely

believe that there is sufficient room in the West, with mining, we hope, on the upswing, to justify both of these operations and I hope we can demonstrate it to the committee.

Any futher questions of the gentlemen? Possibly with the committee's indulgence, I am sure you wouldn't have any objection if I asked Senator Cannon if he cares to make any observations.

Senator CANNON. Thank you, Mr. Chairman. I would like to make several observations.

ECONOMIC IMPACT

First, this seems very ill advised to me. I am wondering whether or not you people have given any consideration to the community impact that will result as a result of this move. It looks to me as if you are going to make a depressed area out of Boulder City, requiring the Government to go back in with an ARA program, or some other program, and to use Government funds probably in excess of this saving about which you are talking if, in fact, there is actually a saving.

Has that been explored?

Mr. MEMMOTT. Senator, we have taken a long hard look at our decision. The Reno and Boulder City operations are similar, and supervision, of course, for Boulder has come from Reno. This is a chain reaction of several operations that we are phasing out and closing down, and space is a problem where we move from one station to the other.

Senator CANNON. Space is no problem there. Without a movement you have plenty of space at Boulder City to carry out the projects you are working on, don't you?

Mr. MEMMOTT. This is true.

Senator CANNON. Then how do you say space is a problem?

Mr. MEMMOTT. As pointed out, our ratio of people that are in research compared to the maintenance people and supplemental people, is higher than any of our other stations.

Mr. WELLS. Forty-two—forty.

Mr. MEMMOTT. This is about 50 percent higher than many of our other stations, so our cost of research is much greater in Boulder City than any other station. Again, if I may say, the functions of our research facilities and field stations are national in scope, not geographically oriented.

Senator CANNON. You didn't answer my first question as to whether or not you have given any consideration to the economic impact, the fact that this will make, in effect, a depressed area in the Boulder City area and will result in Government funds having to go in there through some other source to help the community under ARA or some other program.

Have you given any consideration to the community economic impact which would be brought about by this move?

Mr. MEMMOTT. I personally have not.

Senator CANNON. Has anybody in your Department?

Mr. MEMMOTT. I can't answer for the Department. We could certainly get this information for you.

Senator CANNON. Mr. Chairman, if they have not, I think this is a very important consideration. This one agency is the third largest employer in Boulder City and it isn't a big town, as the chairman

well knows, but it is a town which was built by the Government. It has been put into existence by the Government. It has been brought up on, and continued to exist as a result of Government activities, and your agency, as I say, is now the third largest employer there.

The Bureau of Reclamation has more than you do, and the City of Los Angeles Municipal Power & Light has a greater number, but you come third. If you disrupt a small community to the extent that this move would disrupt Boulder City, I am sure that the economic impact from the standpoint of loss to the community, and the assistance which would have to be given through other Government resources to keep this community alive, would more than offset this so-called saving which I have grave doubts about myself.

Senator BIBLE. We would be delighted to have you furnish that for the record, Mr. Memmott.

Mr. MEMMOTT. We certainly will.

(The information referred to follows:)

Senator Cannon inquired whether the economic impact on the community of Boulder City was considered as a factor when the decision was reached to transfer Bureau of Mines activities from Boulder City to Reno. The decision to close Boulder City was taken only after long and careful consideration of advantages and disadvantages. The effect of the move on the community entered into our thinking, but we cannot say truthfully that it was a factor upon which the recommendation rested. The decision was made only on factors within the scope and responsibility of the Bureau of Mines—to conduct, as efficiently as possible, a strong program to assure the Nation an adequate and dependable supply of mineral raw materials.

PERSONNEL RELOCATION

Senator CANNON. Mr. Chairman, has the record gone into this chain reaction transfer situation about which they were talking a moment ago? That is, they are going to transfer some from Boulder City to Reno, and some from Reno to Denver, and I presume some from Denver to someplace else.

You are joining in this policy which the military seems to have of transferring people about once every 3 years just for the sake of movement, are you?

Mr. MEMMOTT. No, sir; definitely not. We feel that in a conscientious manpower utilization program people of similar competency should be working together and should not be stretched out at different geographical locations just for personal accommodation.

If I may follow up regarding the coal research lab of Denver, the people there will be transferred to Grand Forks and the Reno mining research people will be moved to Denver, which is the headquarters, along with the applied physics lab from College Park.

A portion of these will be going to Minneapolis, but most of them will be going to Denver, where the supervision of the Reno end does come out of Denver. This in turn opens up additional space in Reno for the Boulder operation and Boulder is being supervised now from Reno, which again is costly, and we are not transferring people just for the sake of being transferred.

I would prefer personally to be living in Denver, or Salt Lake, or Las Vegas, or Reno, but my job happens to be here in Washington at the present time. I don't think we can afford to maintain facilities simply because they are located where people prefer to live.

RELOCATION BENEFITS

Senator CANNON. When you make these types of moves of the people whom you give the opportunity to move, do you have to give them any relocation benefits? I refer to people who have had their roots in the community, lived there for 20 years, and own a home and that sort of thing. And, as you say, when they move out of a community such as Carbon County, they can't rent their house.

What do you do about relocation benefits?

Mr. MEMMOTT. To my knowledge there are none.

Senator CANNON. It is just up to them to pull up their roots and move and take the job or they are out of work; is that it?

Mr. MEMMOTT. That is correct.

Senator CANNON. How many years have most of these people been with you?

Mr. MEMMOTT. Mr. Wells.

Mr. WELLS. I would have no idea on that.

Senator BIBLE. Would you supply it for the record?

Mr. WELLS. I will.

(The information referred to follows:)

The following table shows the length of service at Boulder City of the employees in the laboratory:

Number of years at Boulder City:	*Number of employees*
0 to 5	19
5 to 10	23
10 to 15	18
15 to 20	2
More than 20	18

EMPLOYMENT PROBLEM

Senator CANNON. They are relatively long-term employees. I know many of them have been there for years and actually most of them have been there for years. If they don't move to take employment elsewhere, as you suggest, they are almost going to be unemployable, because I am sure you are aware of the problems of employing elderly people today, of going out and getting a job in some new field.

Senator MCGEE. You are talking about people over 40.

Senator CANNON. Yes.

Senator MCGEE. This is a shattering concept.

Senator CANNON. Yes; even that low.

Senator MCGEE. But that is the employment problem right now, the industry inclination not to start them over 40.

Senator CANNON. That is right. It is a very unfortunate situation. What is going to happen? You have given a lot of assistance through this shop to the industrial complex in the Henderson area over the past few years. This has been quite an important aid, I think, to those people there who are part of our industrial community.

What happens then in this type of thing?

Mr. MEMMOTT. Again this will be serviced from Reno.

AVAILABILITY TO COMMUNITY OF TECHNICAL LIBRARY

Senator BIBLE. If I might interject at that point, you have developed a very, very fine technical library there which is used by people

in all of these various mining industries and this library apparently will be dissipated. This is a real assistance to the mining industry as such, and now that we are trying to encourage mining, it sounds to me as though it is a little inconsistent to try to eliminate this very important tool.

Mr. MEMMOTT. It is my understanding this library would be moved to Reno.

Senator CANNON. Mr. Chairman, perhaps for the record it should be pointed out, when you talk about Reno and Boulder City, that it isn't like talking about two towns here in Maryland. I know that Senator Mundt is familiar with that, because he has been out there a number of times visiting us, as has Senator McGee.

I don't believe Senator Byrd has been, but we are talking about towns, which are more than 450 miles apart. That is comparable to three and four States apart back in this part of the country. When you move your library out, you take the accessibility of your library away from our only really industrial complex in the State. If you take the library at Henderson and move it to Reno, fine, if they can use it. If they travel 400 or 460 miles, they are welcome to use it. It is a problem which is not as simple as going out here to College Park, or some other nearby facility.

Mr. MEMMOTT. This is correct, Senator, and we are aware of the hardships and handicaps. We have weighed this problem and some of us being westerners, we know the distances. I think it boils down to prudent management of our funds.

Senator MCGEE. Mr. Chairman, may I interject there on the Senator's comment?

Senator BIBLE. Certainly.

FALLACIES OF MACHINE STATISTICS

Senator MCGEE. This is one of the problems that we out in the West have to face back here in Washington. They run an IBM machine over a lot of this stuff which shows it is uneconomical by statistical terms and it leaves completely out of the picture this matter of low population, which still involves people, and the vast sweep of distances. As a result we find ourselves being judged on whether we have a regional office or a State office or a location within the State on terms that really seem to me to be invalid ones when measured with the needs of the West. We can't add it up on a machine and justify it in the first place.

The West shouldn't even be here if you are going to do that, except that we happen to finance the rest of the country with our resources and have done so for the last hundred years. It is what we are confronted with every time they make a budget cut back here, that is, they start cutbacks in Maryland or environs of the District, and employ standards and statistics that would put us out of business in 2 weeks because of low population, low utility per number of people around, and that really isn't the criteria that ought to obtain.

It is a matter of servicing an area that is extremely important and I don't know how long it is going to take us to invent a new machine

that has an equation that allows for this, but I think it is time we get one going. It is a far different problem than we have back in this part of the country.

Senator BIBLE. I thoroughly agree with the Senator from Wyoming. Do we have further questions and observations?

Senator CANNON. One other question. Has the record brought out whether they will be acquiring, either by lease or purchase, any additional space as a result of any of this move?

Senator BIBLE. Only as to Reno. They simply went into space that was existent there and I think they said that they were going to go into sapce that was in existence at Denver, but I will let Mr. Memmott answer this again.

Mr. MEMMOTT. That is correct. We are not expanding building space at any of the installations involved in the move.

ANALYSIS OF SAVINGS

Senator CANNON. Are you losing an advantage if you move out of Boulder City? Are you losing the advantage there of low cost power and water in connection with your project?

Mr. RAMPACEK. There would be a slight increase in the cost of the power, but on the basis of the scale of operation of the electrolytic cells it won't amount to much more than probably a few thousand dollars a year.

Senator CANNON. Is that figured into this cost analysis of yours?

Mr. MEMMOTT. Yes, sir. The additional power costs and facility costs were included.

Senator BIBLE. We have asked to have them substantiate dollar by dollar this cost so we can see whether this is really figured correctly or not, and Mr. Memmott has agreed to supply that for the record.

Mr. MEMMOTT. On a yearly basis; is that correct?

Senator BIBLE. On a yearly basis.

(The following information was submitted:)

ANALYSIS OF SAVINGS

A more detailed analysis has been made of the potential savings resulting from the transfer of the Boulder Laboratory to the Reno Metallurgy Research Center. The previous estimate was based on figures available in the Washington office at the time. Revised estimates are based on actual wage rates and cost records wherever possible. The new analysis includes an estimate of the higher electric power rates at Reno which actually increases the net savings by $2,200 annually due to the absence of electric heating and air conditioning at Reno. The resulting revised annual saving is $221,077 or approximately $89,000 greater than the original less accurate estimate. This saving can be achieved, however, only if 27 positions can be eliminated within the first year.

Estimated annual savings on move of Boulder City Laboratory to Reno Metallurgy Research Center

Personnel:	
15 mechanical service (wage board) $8,230 average	$123,450
6 analytical services	43,635
6 clerical	29,872
Total	196,957
Electric power: Reno estimate (Feb. 25, 1965) based on no electric heating or air conditioning at Reno and on the combining of Reno with Boulder facilities that will be moved	2,200
Water	720
Gas	6,000
Maintenance of office equipment	1,200
Operation of automobiles and trucks	1,800
Library subscriptions and bookbinding	3,500
Travel	3,000
Teletype rental system	3,900
Maintenance of buildings and grounds (no labor)	1,800
Total	24,120
Grand total	221,077

DETERMINATION OF UNEMPLOYED PEOPLE

Senator CANNON. One further question, Mr. Chairman. Has any survey been made to determine the number of people who will be put out of work as a result of this move? I am talking about people who will not elect to move, because of having deep roots in the community, whether in Boulder City or in Reno. Have you made any survey on that at all?

Mr. MEMMOTT. No, sir; we have not.

Mr. WELLS. This is going on now at Boulder City.

Senator CANNON. You don't have any idea how many?

Mr. WELLS. Not until we hear.

Mr. RAMPACEK. Senator, I don't have exact figures, but as a general rule about 25 percent do not accept transfer.

Senator CANNON. I don't like to go by general rules.

Mr. RAMPACEK. We can get the figures for you exactly.

Senator CANNON. I would like to know exactly what your survey in this respect shows when you get that completed.

Senator BIBLE. That will be supplied for the record.

Mr. MEMMOTT. I will supply that information.

(The information referred to follows:)

The employees of the Boulder City Metallurgy Research Laboratory have been informed that they need not reach a final decision about whether or not to accept transfer to Reno until mid-March. At this time, therefore, only an estimate can be made of the number who will make the transfer.

It appears that approximately 35, mostly technical personnel, will move to Reno. Most of the nontechnical personnel will not transfer. Some may retire; 28 employees are eligible for retirement if the laboratory is closed. Six have indicated that they have already located other jobs in the Boulder City area.

SUPPORTING PERSONNEL

Senator BIBLE. And I would like to have for the record, Mr. Wells, the observation or straight-up statement that it takes 42 people in Boulder to support 40 people. That was your statement'

Mr. WELLS. Yes.

Senator BIBLE. Would you furnish at this time their names, positions, salaries, and how long they have been with you for the record.

Mr. WELLS. Yes, sir.

(The information referred to follows:)

The following roster of personnel at Boulder City Metallurgy Research Laboratory is accurate as of February 24, 1965. Previous listing of personnel, on which Mr. Wells based his testimony, showed 40 research personnel and 42 others. Two people have since left the Bureau, making the present ratio 39 to 41.

Name	Salary	Years of service	Years at Boulder City	Age
OFFICE OF THE CHIEF				
Blue, Delwin D., supervisor, metallurgy (general), GS-1321-14	$17,110	23	10	47
Hamilton, Dorothy, secretary (stenographer), GS-318-5	5,990	12	12	48
ADMINISTRATIVE OFFICE				
Gibson, Homer W., general supply specialist, GS-2001-9	7,465	16	11	48
Jenne, Floyd L., administrative officer, GS-341-9	8,445	27	5	50
Kunkel, Josephine M., general supply assistant, GS-2001-7	7,450	21	21	56
Boyce, Mary W., administrative assistant, GS-341-7	6,850	18	4	42
Goen, Opie, supply clerk, GS-2040-5	6,155	23	23	66
Boyle, Grace H., librarian, GS-1410-5	5,990	13	13	70
Knudsen, Lucy J., information receptionist, GS-304-3	5,220	22	22	40
TECHNICAL SERVICES				
Boyle, Bruce J., supervisory chemist, GS-1320-12	11,315	23	23	47
Carpenter, Lloyd, supervisory chemist, GS-1320-12	11,315	18	13	52
Mackie, Alick J., supervisory resesearch chemist, GS-1320-12	11,315	10	8	33
Linck, John H., supervisory chemist, GS-132-11	10,125	23	23	63
Hazen, Kathleen A., chemist, GS-1320-9	8,445	4	4	29
Hooper, Ralph E., chemist, GS-1320-9	9,180	15	4	48
Holmes, Robert A., chemist, GS-1320-9	8,935	23	8	57
Nishi, James M., physicist (general) GS-1310-9	8,690	7	5	31
Merrill, Jerald C., chemist, GS-1320-7	7,650	6	6	24
Parkinson, Ernest W., physical science technician, GS-1311-7 (general)	7,450	25	4	57
Fehler, Ruby H., physical science technician (chemistry) GS-1311-7	6,050	8	8	49
Pavlich, Lois V., physical science technician (chemistry) GS-1311-7	6,050	8	8	44
Davison, Victoria R., physical science technician (chemistry) GS-1311-5	5,495	6	6	46
Strickland, Eleanor C., physical science aid (chemistry) GS-1311-4	4,780	3	3	24
Chenowith, Olive C., physical science aid (chemistry) GS-1311-4	4,780	3	3	42
MECHANICAL SERVICES				
Dewey, Carl G., construction and maintenance superintendent (general) GS-1640-12	11,670	15	11	36
Glazer, Lois C., secretary-typist, GS-318-4	5,380	11	10	60
Lappin, Lauren W., foreman III electrical maintenance WS-2805-73	10,608	23	23	50
McNair, Clarence, foreman III laboratory general mechanic, WS-4740-73	10,608	22	21	56
Kreimeyer, John A., laboratory general mechanic maintenance, WB-4740-00	8,690	20	20	66
Waddell, James A., laboratory general mechanic maintenance, WB-4740-00	8,690	23	22	55
Lucero, Albert G., laboratory general mechanic maintenance, WB-4740-00	8,690	9	9	33
Ward, Harold V., laboratory general mechanic assistant, WB-4740-00	7,568	7	3	39
Carlton, Carl M., laboratory general mechanic helper, WB-4740-00	6,467	21	12	61
Martinez, Ernest, laboratory general mechanic helper maintenance, WB-4740-00	6,467	11	7	44
Hurt, William A., Jr., laboratory machinist maintenance, WB-3414-00	7,568	26	24	48
Parker, Mahlon, laboratory machinist maintenance, WB-3414-00	8,690	20	7	58
Nelson, Edward A., laboratory electrical maintenance, WB-2805-00	9,221	23	3	57
Ramsay, Henry L., laboratory electrical maintenance, WB-2805-00	9,221	18	4	45
Stockall, Vernon G., laboratory pipefitter, WB-4204-00	8,690	26	5	53
Martin, Louis, laborer, maintenance, WB-3502-00	5,957	7	3	34
Brooks, Jasper J., janitor, maintenance, WB-3566-00	5,712	14	6	51

Name	Salary	Years of service	Years at Boulder City	Age
RESEARCH GROUP				
Lang, Robert S., supervisor, research extractive metallurgist, GS-1321-13	$14,595	23	23	54
Sullivan, Thomas A., supervisory chemist, GS-1320-13	13,335	23	23	46
Wong, Morton Min, supervisory chemical research engineer, GS-893-13	12,915	14	11	40
Homme, Vernon E., research extractive metallurgist (nonferrous), GS-1321-12	11,315	29	23	58
Kleespies, Ernst K., supervisory research extractive metallurgist (nonferrous) TS-1312-12	10,960	9	9	33
Lundquist, Raynard V., supervisory research extractive metallurgist (nonferrous) GS-1321-12	12,380	23	18	62
Perkins, Edward C., supervisory research extractive metallurgist, GS-1321-12	12,380	23	23	47
Couch, Dwight E. supervisory chemist, GS-1320-12	12,380	17	4	43
Cattoir, Francis R., supervisory research chemist, GS-1320-12	11,315	23	23	63
Kirby, Donald E., research extractive metallurgist (nonferrous) GS-1321-11	9,830	10	8	34
Leone, Oliver Q. C., research extractive metallurgist (nonferrous) GS-1321-11	9,535	19	19	56
Knudsen, Hans, research chemist, GS-1320-11	10,125	23	12	64
Leitch, Harold, chemist, GS-1320-11	10,715	11	11	55
Singleton, Eben L., supervisory chemist, GS-1320-11	10,420	23	9	48
Merrill, Carl C., supervisory research chemist, GS-1320-11	10,715	20	7	54
Evans, Terrell E., physical science technician (metallurgy), GS-1311-11	10,715	26	26	58
Nettle, James R., chemical research engineer, GS-893-11	10,420	12	12	55
DeBeauchamp, Robert L., extractive metallurgist, GS-1321-9	8,935	18	5	46
O'Keefe, Daniel A., extractive metallurgist, GS-1321-9 (1A-to career Aug. 6, 1965)	8,445	6	3	47
Cumings, Roy E., research chemist, GS-1320-9	8,935	8	8	46
Hiegal, John M., chemist, GS-1320-9	9,180	16	9	49
Lei, Kenneth Pak-Vo, chemist, GS-1320-9	8,445	2	2	29
Novielli, Frank, chemist, GS-1320-9	9,180	13	9	37
Jackson, Jesse, Jr., chemist, GS-1320-9	8,200	6	3	30
Barton, Bruce E., chemist, GS-1320-9	8,200	3	3	24
Martinez, George M., chemist, GS-1320-9	8,200	3	3	28
Caldwell, Boyd E., physicial science technician (general) GS-1311-9	7,955	35	12	57
Johnson, Morris L., physical science technician (general) GS-1311-9	7,955	20	12	58
Rowley, Waldo F., physical science technician (metallurgy), GS-1311-9	7,955	23	22	59
Osborn, Omar G., physical science technician (general), GS-1311-9	7,955	23	23	57
Cole, J. Elmer, physical science technician, GS-1311-7	7,450	14	11	43
Hall, C. McKay, physical science technician, GS-1311-7	7,450	14	12	42
Patrick, Oliver B., physical science technician, GS-1311-7	7,450	17	13	36
Rasmussen, Kenneth L., physical science technician (general), GS-1311-7	7,450	11	9	39
Vaughan, George T., physical science technician (general), GS-1311-7	7,450	17	11	53
Waldron, William E., physical science technician (general), GS-1311-7	7,450	11	9	45
McCauley, Ruth, physical science technician (metallurgy), GS-1311-5	5,990	11	12	52
Wincher, A. Hedwig, secretary (typing), GS-318-4	5,530	14	8	56
Mack, Karen H., clerk-typist, GS-322-3	4,410	2	2	21

Senator BIBLE. Also, please provide for the record a statement showing the ratio of research personnel to support personnel at your other laboratories.

Mr. WELLS. Yes, sir.

(The statement referred to follows:)

BUREAU OF MINES

In the aggregate, for all of the research functions of the Bureau of Mines, the ratio of research personnel to support personnel is 1.63. In other words 163 scientists and technologists are supported in their work by 100 administrative,

mechanical, maintenance, and analytical chemistry employees. The ratio varies from laboratory to laboratory, but the following illustrations are typical:

Laboratory:	*Ratio, research to support*
Boulder City, Nev	1.0
Reno, Nev	1.5
Grand Forks, N. Dak	1.4
Denver, Colo	1.4
College Park, Md	3.1

Senator CANNON. Thank you.

METALLURGY RESEARCH PROGRAM

Senator BIBLE. Mr. Memmott, I would like to have you, now or for the record, give us an idea of the program of the Bureau of Mines in the field of metallurgy research. I have no doubt, since you came from the great mining West and came from Carbon County, which is very famous in mining, that you have just as much faith in the future of mining as I have, and I assume this metallurgy research is going to go on for a good many years.

Do you share my opinion? Are you fellows going to continue to research?

Mr. MEMMOTT. Definitely, I certainly do share your faith in the future.

Senator BIBLE. I would like to have you give us an idea of what you think that embraces. In other words, you are not about ready to go out of business in the field of metallurgy research.

Mr. MEMMOTT. Definitely not. We are consolidating the Tucson lab at Salt Lake City and Boulder City at Reno. If it pleases the chairman I will submit the details of this for the record.

(The information referred to follows:)

BUREAU OF MINES METALLURGY RESEARCH PROGRAM

The metallurgy research program of the Bureau of Mines is directed toward conservation of our natural mineral resources through development of the most efficient techniques for utilizing them. The research toward fulfillment of the objective includes work on: Developing and improving techniques for recovering metals from presently used ores; developing techniques for recovering metals from presently unused low-grade ores; increasing recovery of byproducts; developing methods for recovering metal values from industrial scrap and waste; making and evaluating superior materials, including alloys, ceramics, and composite materials for use in defense and industrial applications; and many other supporting investigations in the fields of physics, chemistry, and metallurgy. This program is envisaged as a continuing one, to be in effect as long as problems exist in the recovery and utilization of minerals and metals.

To insure effectiveness of management and to maintain the flexibility necessary for prompt and effective attack on newly arising problems, the overall research program is divided into about a dozen subprograms which have durations of 5 to 10 years or longer. These subprograms are further subdivided into individual projects (130–150) with a normal duration of 3 to 5 years. An example of the subprograms with which the Bureau is presently occupied is the one on iron and steel production, which is aimed at increasing the efficiency and productivity of the iron and steel industry and increasing the usable domestic iron reserves. The projects under this subprogram include experimental work on a specially instrumented blast furnace to study the effects of such new techniques as injected fuels, high blast temperatures, and high blast pressures. The iron and steel industry is cooperating with the Bureau and is investing about $1 million per year (in money and supplies) in this project. It is planned to continue the study at least at its present level as long as industry continues to support it. Another of the projects on iron and steel involves the evaluation of a process, recently

invented by a Bureau metallurgist, for using low-grade ferrous scrap, such as old auto bodies, in the upgrading of a plentiful, presently unusable low-grade iron ore. This project will continue until the process has been completely evaluated and has either been adopted by industry or proved to be uneconomical under present conditions. Other projects include the experimental production and evaluation of prereduced iron ore pellets as a superior feed for blast furnaces or steelmaking furnaces, research on the effects of rare earth additions to steel (a short term industry supported project), and research on pelletizing, and oxygen steelmaking.

Another long-term subprogram is on mineral beneficiation. This is a particularly important program since supplies of rich, easily beneficiated ore are rapidly being depleted and the Nation must depend on lower grade ores to an ever-increasing extent. The aim of the minerals beneficiation research is to improve the recovery of valuable minerals and metals from ores now being exploited and to finds ways in which presently unusable low-grade mineral deposits can be economically upgraded for use. The projects under the minerals beneficiation program change more rapidly than in some of the other programs as new mineral deposits are found and as different metals become industrially important because of changing technology. The emphasis in past work has been on the ores of the more common metals such as copper, lead, zinc, and manganese. Present work is emphasizing work on the ores of beryllium, titanium, columbium, molybdenum, iron, and industrial minerals; and future work will continue these studies as well as investigations of the fundamental aspects of beneficiation processes to obtain basic information which will be of use in beneficiating all ores.

The subprogram on electrometallurgy has several goals. Among these are: Winning metals from ores; producing metals of a very high purity; applying coatings which are resistant to corrosion at normal or elevated temperatures; and obtaining fundamental information on electrometallurgical processes. The metals under investigation change as industrial and defense needs change. Workers at the Bureau research laboratories in Nevada are world-recognized authorities in the field of fused-salt electrometallurgy, and to maintain this competence, a substantial part of the present electrometallurgy program is in this field. This work is planned for continuation for at least the next 10 to 15 years. Current projects under this part of the program involve electrowinning and electrorefining such metals as titanium, tungsten, vanadium, beryllium, chromium, molybdenum, and some of the rare earth metals. Currently, fused-salt electrolytic techniques are being accepted industrially for metals of high unit value (aluminum is the exception to this general rule) but it has not yet been economically feasible to use these methods on other metals. Bureau research in this field is toward the discovery of optimum salt compositions, operating conditions, and materials of construction so that these very effective techniques can be used to produce metals of lower unit value.

Thermodynamics research is a very important phase of the Bureau's work. The program in thermodynamics is expected to continue as long as metallurgical work is conducted by the Bureau. The information developed under this program is of fundamental importance to much of the other Bureau research and is also widely used by industry, universities, and other Government research agencies. The individual projects under this program change very rapidly to meet the continuing demand for thermodynamic data. Future plans call for some of the work to be redirected towards the field of high temperature, a field in which there is a dearth of vitally needed data. Industrial and defense operations are moving into the high-temperature field at an ever-increasing rate, and it is the Bureau's responsibility to help maintain the progress of the Nation's research and production facilities in this field.

Other subprograms include: Physical metallurgy, in which a series of projects making up a relatively long-term program on forming methods for high-melting-point metals is being started; ceramic materials, in which new and improved refractory materials are being developed and evaluated, and new methods of forming are being tested; and a new concentrated 7-year program designed to attack many problems related to the production of alumina and aluminum. The proposed subprogram for the utilization of ferrous scrap was discussed earlier during these hearings.

Senator BIBLE. I wish you would, particularly the projects you have in mind. I understood you to say that you have about 168 projected for this next fiscal year and probably about that same

number the following year. There are many, many things to be done in this field and there certainly is great need for it.

Are there further questions on this gentleman's subject?

STOPPAGE OF EQUIPMENT MOVE

Senator CANNON. Mr. Chairman, did you bring out for the record whether or not the Bureau has stopped the move of equipment that they started prior to the committee holding this hearing and making their decision?

Senator BIBLE. I don't think that question was specifically asked.

Senator CANNON. Mr. Chairman, I received a number of complaints from citizens in Boulder City that the move of equipment had already been ordered and commenced, and I would certainly like to request the chairman to direct these people to leave it as is and where it is until this committee makes its determination whether it is going to permit this move.

Senator BIBLE. Have you moved machinery out of Boulder City?

Mr. WELLS. The first I heard about it was in your telegram.

Senator BIBLE. If there is anything contemplated, put a stop order on it until you have heard from this committee.

Mr. WELLS. The first planned movement was in April according to my schedule.

Senator BIBLE. I have no knowledge of it and I was in Boulder City about 10 days ago; but if there is anything in the offing along this direction, please desist until this committee has had the opportunity to go into this matter.

There will be included in the record two letters protesting termination and transfer of research activities.

(The letters referred to follow:)

WESTERN COAL PRODUCERS ASSOCIATION,
Denver, Colo., February 19, 1965.

Hon. ALAN BIBLE,
Senate Office Building, Washington, D.C.

DEAR SENATOR BIBLE: We have learned that the Denver Coal Research Laboratory of Bureau of Mines is slated to be closed and moved to Grand Forks, N. Dak.

The need exists for continued coal research on Colorado, Wyoming, Utah, New Mexico coals. The market for these coals is expanding rapidly in these States and in States south and east to the coast. Facilities for exploitation of the immense coal reserves are moving into the area, not out of the area. The Denver Laboratory has new and modern equipment, has personnel well acquainted with these coals, with the coal producers, and with the coal users; communications are simple, effective, and much used.

We believe careful examination will bring about reversal of this decision to close the Denver Coal Laboratory. Will you please look into it?

Respectfully yours,

O. F. BRIDWELL, *Secretary.*

BOULDER CITY, NEV., *February 19, 1965.*

Hon. CARL HAYDEN,
U.S. Senate, Washington, D.C.

DEAR SENATOR HAYDEN: I am writing this letter to appeal to you as a neighbor to your friends in the State of Nevada, as a good friend of the mining industry, and as the man who is the chairman of the all-important Appropriations Committee of the Senate, to assist us at the Boulder City Metallurgy Research Laboratory of the U.S. Bureau of Mines in urging the administration to reconsider the

proposed phaseout of our station. Our representatives in Congress, Senator Alan Bible, Senator Howard Cannon, and Representative Walter Baring have promised us their full support but I know that they will need all the help they can get to help them in their endeavor.

I could write you page after page explaining my reasons for thinking that this is not in the best interests of economy but our Senator Bible has all of the information that we can possibly get to him explaining our reasons for requesting a reconsideration of this move.

I will say that most of the people at the station have lived in Boulder City for over 20 years and own their homes, have children and grandchildren here, are very active in civic affairs, love their town, and have absolutely no desire to leave. Besides this the economy of this small town will suffer a severe jolt by losing an estimated payroll of $750,000 plus another estimated $100,000 which is the total of salaries by husbands and wives of employees at the Bureau. The city is almost totally dependent on Government agencies as it is the only industry here and we are the only city in the State which does not have gambling and liquor for revenue.

Once again I urge you to lend your support to our cause and I am sure that you will find that the shutdown will not be in the best interest of economy for our great country. I wish you all of the success in the world in all of your future endeavors.

Very sincerely yours,

GEORGE T. VAUGHAN.

Senator BIBLE. Are there further questions of the Director?

Senator BYRD. No, Mr. Chairman.

OIL SHALE RESEARCH

Senator BIBLE. Senator Mundt?

Senator MUNDT. No, Mr. Chairman.

Senator BIBLE. Now on the subject of oil shale research, what is the amount that was allotted to you for this study in fiscal 1966?

Mr. PERRY. $1,033,000.

Senator BIBLE. How does that compare with the amount available last year?

Mr. PERRY. That is $100,000 more than we had this past year and the increase will be used for preliminary studies of in situ retorting.

RESEARCH OF FERROUS-METALS SCRAP

Senator BIBLE. On page 28 of your justification you indicate that funds will be used to emphasize research on ferrous-metals scrap problems and I think probably already someone answered this in detail, but if you would care to elaborate on it we would be happy to have you do so at this point.

Mr. MEMMOTT. I think we covered that.

NEW SILVER PROJECT

Senator BIBLE. I think you covered this sufficiently. There is a statement on page 71 of your justifications with regard to a major new project concerned with the silver situation, particularly the possibilities of renewed, or increased, output from the silver mines. I am sure Senator Mundt, the same as I, would be interested in a project along this line.

What do you propose doing in that direction?

Mr. PERRY. We propose two things, Senator. In the first place on the mining side we have gotten together with the Geological Survey and have looked at low grade silver deposits, some of the initial ones in Nevada. We think that there are possibilities of developing mining

methods which will be of sufficiently low cost, as has been done in the case of copper, as you know, that might make these low grade silver deposits attractive economically at the present time.

The preliminary work on this has already started. What this amounts to in the first steps is the ability to determine what the quality of the reserves are.

When they are this low grade you want to be able to predict from simple drillings what you can expect out of very large deposits. You can't afford to put holes without number. We are now applying some of the knowledge that we gained on how to estimate low grade reserves of other kinds.

On the metallurgy side, we are taking another look, as Mr. Wells mentioned earlier, on how one would go about upgrading these lower grade deposits.

Senator BIBLE. Do you men have any thoughts or views as to what one should do about the coinage of silver coins?

Mr. MEMMOTT. I believe we would prefer not to comment on that subject.

Senator BIBLE. You are, however, an old silver miner.

Mr. MEMMOTT. No. I believe the Treasury Department has a policy on this matter.

Senator BIBLE. Do they solicit your suggestions in this regard?

Mr. MEMMOTT. Not to my knowledge.

Senator BIBLE. Maybe I am asking the wrong Department of Government, but I am sure it is one that interests all of the people of the United States as to what you do with the silver coins in the future.

Mr. MEMMOTT. Being a westerner, of course, you realize we are interested in the problem.

HEALTH AND SAFETY PROGRAM

Senator BIBLE. On the general subject of health and safety, there will be placed in the record your statement in support of your request for $9,507,000 for health and safety in fiscal year 1966, which is an increase of $207,000 over the amount appropriated in fiscal year 1965. That will be made a part of the record at this point.

(The information referred to follows:)

HEALTH AND SAFETY

HIGHLIGHT STATEMENT

Purpose and long-range objective

The health and safety programs of the Bureau of Mines are designed to: (1) Prevent accidents and injuries primarily in the Nation's mineral extractive industries, embracing coal, metal, and nonmetallic mining, quarrying, metallurgical, petroleum, and natural gas; (2) develop working standards to safeguard the lives and health of employees of those industries; and (3) supervise the extinguishment or control of fires in inactive coal deposits. The main objectives of the health and safety programs are to: (1) Save lives and avoid impairment of the health of workers, (2) improve the economy of the mineral extractive industries by eliminating costly accidents and personal injuries, (3) conserve valuable natural resources by avoiding their destruction, and (4) prevent destruction or disablement of facilities that produce or process the Nation's mineral commodities.

The ultimate goal of the Bureau's health and safety programs is the elimination of accidents and injuries and the causes of impairment of health throughout the mineral industries. The attainment of such a goal is unlikely because many of

the occupations, notably in underground mining operations, are inherently hazardous. Underground mining operations, whether in coal or ore mines, present hazards to which most other industrial enterprises are not subjected. Over the years considerable progress toward the ultimate goal has been achieved through a downward trend in the injury frequency rates—lost time disabling injuries per million man-hours of exposure. Maintenance of this downward trend in the mineral extractive industries, particularly underground mining, is a prerequisite to approaching the theoretical goal.

Accomplishments during past year

Each active coal mine employing 15 or more men regularly underground (classed as title II in the Federal Coal Mine Safety Act) was federally inspected an average of 2.5 times during calendar year 1963. Underground coal mines regularly employing 14 or less men underground (classed as title I in the Federal Coal Mine Safety Act) each were federally inspected an average of 1.3 times. Strip mines were inspected an average of 0.9 time and auger mines 0.7 time during the year. Some mines could not be inspected during the year because of abandonment or seasonal or otherwise intermittent operation.

Bureau of Mines experience over many years attests that best results in preventing accidents and injuries are obtained mainly through safety educational processes. Approximately 7,800 persons completed various Bureau of Mines accident prevention training courses and over 30,000 persons completed the first aid mine rescue training courses during the fiscal year 1964. Adding to this educational achievement was the attendance of approximately 65,000 persons at Bureau demonstrated lectures on safety and 112,000 persons at Bureau screenings of safety films. Also, approximately 109,000 persons attended Bureau-sponsored safety meetings, including those of the Holmes Safety Association.

Safety education was emphasized in the metallic and nonmetallic (other than coal) mining industries during the fiscal year 1964, following completion of the 2-year mine safety study, authorized by Public Law 87-300 and conducted by the Bureau of Mines. Also, safety educational training in the coal mining industry was increased substantially in accordance with the recommendations of the Special Task Force on Coal Mine Safety, previously referred to.

To stimulate interest and to gain cooperation of the mining industry and workers therein, a new safety educational training course was developed and launched during fiscal year 1964. The course, titled "Principles of Accident Prevention," features short, effective safety demonstrations and other presentations on subjects that are available in greater detail in other Bureau training courses.

Two Bureau-developed methane alarm units were tested in a commercial coal mine under severe operating conditions by having them mounted on a continuous mining machine. The signal lights actuated by the alarms responded reliably with various percentages of methane in the mine atmosphere, which were checked consistently with portable methane indicators.

Research to improve the quality of roof-bolting material was continued throughout the fiscal year 1964 with special emphasis on the quality of roof-bolt bearing plates. The Bureau's test equipment and procedures were approved by the Roof Action Committee of the American Mining Congress. Roof-bolt installation in soft ground was studied and showed that best results were obtained when resin was used to augment bolt anchorage.

The control of fires in inactive coal deposits was a continuing activity. During the fiscal year 1964, 10 fires were extinguished or controlled. Some maintenance work was required to prevent some previously controlled fires from rekindling.

Objectives and program for fiscal year 1966

The Federal Coal Mine Safety Act requires at least one inspection of each title II mine annually and also authorizes the Bureau of Mines to make annual or necessary inspections of title I mines. The Bureau, however, recognizes that its obligations under the act cannot be discharged by adhering to minimum requirements. Currently, the objective is to inspect each title II mine at least three times annually, each title I underground mine twice a year, and each strip and auger mine at least once annually.

One of the most successful means of preventing accidents and injuries in the mining industries is through accident prevention educational training; however, a modern approach and up-to-date aids and test materials are needed to keep abreast of rapidly changing mining conditions. To accomplish the overall objective, contingent on the availability of funds, up-to-date mine safety instructional publications, sound motion picture films and other visual aids will be developed and others updated; and closer cooperation with industry will be

initiated to develop new courses and instructional materials to meet industry needs. Also, additional Bureau instructional personnel will be trained and equipped to carry on this important work.

To bring the classroom to the mine for safety educational instruction, especially the small mine "off the beaten path," two to four mobile training units will be purchased during the fiscal year 1965 and outfitted especially for this purpose. It is believed that this innovation, to be instituted on a trial basis, will fill a real need because some mines, usually most small mines, do not have physical facilities available on the surface for conducting training classes. Therefore, to a large extent, the employees of small mines have been deprived of the opportunity of obtaining up-to-date instruction in accident prevention. The use of mobile classrooms should have a marked favorable effect on the accident and injury record, particularly of the smaller mines.

With the tremendous increase in mine mechanization, the hazards of explosions and fires have greatly increased due, in a large measure,to the rapid generation of fine coal dust at working faces. Such dust readily becomes airborne and the problem of counteracting it has greatly increased. Research to combat the fine-coal, float-dust hazard will be continued by reappraising current rock-dust standards; determining float-dust characteristics; exploring new methods for collecting, inhibiting, or otherwise limiting deposition of fine-coal dust; and modifying present means of dust control to effectively reduce the fine-coal, float-dust explosion hazard.

Ventilation research and investigations will be augmented to keep abreast of modern mine-ventilation requirements. The health and safety of mine workmen is dependent in a large measure on an adequate volume of clean air to breathe and to dilute, render harmless, and carry off the explosive or noxious gases that may be liberated or generated in mining operations. Mining has become progressively more difficult as coal, and metal and nonmetallic ores are extracted from increasing depths below the earth's surface. In some gassy coal mines operations can be carried on only with close attention to ventilation because of the large volumes of methane liberated. In some deep metal mines high rock temperatures complicate the ventilation problem by requiring air conditioning and cooling to maintain the comfort, health, and productivity of the workmen. The use of underground diesel-powered equipment calls for close attention of the skilled ventilation engineer. The mining industry has long looked to the Bureau of Mines for guidance and assistance with its more difficult ventilation problems.

Prompt detection of methane, particularly in coal mines, has been as difficult to achieve as to carry methane away harmlessly as it is liberated from the coalbed or contiguous rock strata. The problem of timely detection by officials and mine workmen has been intensified, especially in ultragassy mines, by the demands of mechanized mining. High productivity usually is accompanied by a high rate of methane liberation in a gassy coal mine. Recent gas ignitions and explosions have demonstrated that human beings cannot be depended upon to test for methane at frequent enough intervals to assure prompt detection of dangerous accumulations. The Bureau has conducted research to develop a suitable device for automatic methane detection and monitoring, and considerable progress has been made toward producing a practical device to withstand the rigors of actual mining operations.

The use of encapsulated hydraulic-load cells will be continued to study pressure changes in mine roofs and pillars in the investigation of the causes of "bumps" and pillar bursts. Results obtained have indicated the effectiveness of load cells in predicting occurrences.

Testing will be continued on roof bolts and accessories to improve minimum standards of roof bolting. Studies will continue on the use of rock-bonding chemicals to improve roof-bolt anchorages in soft strata and to stabilize and consolidate mine roof by injecting such substances into fractures and other planes of weakness in mine roof.

The Bureau's service to the mining industry in testing for permissibility of various electric- and diesel-powered machines, auxiliary devices, and respiratory-protective equipment will be continued and improved, where possible.

The control of fires in inactive coal deposits will be continued. Projects will be initiated in order of urgency and availability of funds. The Bureau has records of 220 uncontrolled fires in inactive coal deposits, 125 fires that have been extinguished or controlled under this program, and 7 fires that are currently being fought. The objectives are to prevent losses of valuable natural resources and to prevent loss of life or impairment of health of those living or working near such fires.

Health and safety

Appropriation, 1964		$8,664,000
Unobligated balance from prior years		23,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration		−3,000
Total available, 1964		8,684,000
Appropriation, 1965	9,300,000	
Pay cost supplemental	237,000	
Total appropriation, 1965		9,537,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration		−1,000
Total available, 1965		9,536,000

SUMMARY OF INCREASES AND DECREASES, 1966

Inspections, investigations, and rescue work: Decrease to reflect savings to be accomplished by reorganizing Health and Safety field offices		−9,000
Health and safety research:		
Decrease in dust explosion research	−100,000	
Decrease in methane detection and monitoring research	−50,000	
To provide for increased roof-control research	+130,000	
		−20,000
Net decrease, 1966		−29,000
Budget estimate, 1966		9,507,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers [1]	Amount available
1. Inspections, investigations, and rescue work	$6,629,076	$6,851,000	$188,000	−$1,000	$7,038,000
2. Control of fires in coal deposits	394,362	403,000	5,000		408,000
3. Health and safety research	1,584,461	2,046,000	44,000		2,090,000
Unobligated balance lapsing	76,101				
Total	8,684,000	9,300,000	237,000	−1,000	9,536,000

[1] Represents transfers to General Services Administration unless otherwise footnoted.

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Inspections, investigations, and rescue work	$6,629,076	$7,038,000	$7,029,000	−$9,000
2. Control of fires in coal deposits	394,362	408,000	408,000	
3. Health and safety research	1,584,461	2,090,000	2,070,000	−20,000
Unobligated balance lapsing	76,101			
Total	8,684,000	9,536,000	9,507,000	−29,000

1. INSPECTIONS, INVESTIGATIONS, AND RESCUE WORK

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Inspections, investigations, and rescue work	$6,629,076	$7,038,000	$7,029,000	−$9,000

Inspections, investigations, and rescue work

The estimate of $7,029,000 is $9,000 less than the funds available for 1965. The decrease reflects a program savings to be accomplished by consolidating certain health and safety field offices.

Plan of work.—Appropriated funds will be expended mainly in the field for inspections, investigations, and educational aspects of the Bureau's health and safety activities. The primary objectives of these activities are to prevent industrial accidents, injuries, and occupational diseases of mineral-industry employees and by so doing protect the lives and health of those who work in the mining (coal and noncoal), metallurgical, petroleum, natural gas, and allied industries. This is accomplished through mine inspections; safety investigations; accident-prevention education; and roof-control, ventilation, dust-suppression, gas-detection, and working-environment investigations in mines.

Coal-mine inspections and investigations are carried on in accordance with the requirements of the Federal Coal Mine Safety Act (Public Law 552, 82d Cong.). The administration and enforcement of this law was delegated by the Congress to the Bureau of Mines.

Established methods for disseminating accident-prevention education in the mineral industries (coal and noncoal) for workmen and supervisors will be continued by classroom and on-the-job instruction, lecture demonstrations, films and visual aids, and instruction in first-aid and mine-rescue procedures. New techniques in teaching accident prevention to stimulate "company-sponsored" training have been instituted to broaden the base of accident-prevention educational training.

Service to the mining industry through improved ventilation and dust-control and roof-control techniques is a continuing activity germane to the general overall objective of preventing loss of life, disabling injury, and impairment of health of workmen, particularly those engaged in underground mining operations.

2. CONTROL OF FIRES IN COAL DEPOSITS

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Control of fires in coal deposits	$394,362	$408,000	$408,000	----------

Control of fires in coal deposits

The estimate of $408,000 is the same as for 1965.

Plan of work.—Funds for this activity will be spent almost entirely in the field to control or extinguish fires in inactive coal beds on private property and on the public domain. The purpose is twofold: (1) to prevent destruction by fire of valuable resources, and (2) to protect the lives and health of persons living or working in proximity to such fires. Twenty-one fires are scheduled for control during the fiscal year 1965, together with seven uncompleted projects carried over from fiscal year 1964. The Bureau has records of 220 other fires in inactive coal deposits on private property and the public domain. These will be attacked in order of urgency and availability of funds.

Future plans.—The control of fires in inactive coal deposits will be continued in fiscal year 1966. Projects will be initiated in the order of urgency and the availability of funds. The objectives are to prevent losses of valuable natural resources and to prevent loss of life or impairment of health of those living or working near such fires.

3. HEALTH AND SAFETY RESEARCH

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Health and safety research	$1,584,461	$2,090,000	$2,070,000	−$20,000

Health and safety research

The estimate of $2,070,000 reflects a decrease of $20,000 consisting of—

(1) An increase of $130,000 for roof-control research.

(2) Two decreases—$100,000 for dust-explosion research and $50,000 for methane detection and monitoring research.

Need for increase.—Roof-control research; increase, $130,000: Year after year falls of roof, rib, face, or back cause more fatal and serious nonfatal injuries in underground mines than any other sources of accidents. On an annual basis at least 50 percent of the serious nonfatal injuries are caused by such falls. Unlike a roof of a building or other designed structure, the stresses and strains that cause falls cannot be calculated precisely, nor can the supporting or resisting elements be measured accurately by present methods. There are many imponderables in connection with mine roofs that stem from a variety of rock structures, which are rarely, if ever, homogeneous.

The mining industry and manufacturers of roof-control equipment and devices depend largely upon the research and investigations of the Bureau of Mines for guidance and evaluation of proposed systems, and improvements in roof-control equipment and devices. Such service has contributed greatly to the reduction in roof-fall accidents and injuries. In the past considerable time has been devoted necessarily to on-the-spot service to the mining industry as well as to the Army Corps of Engineers and tunnel contractors, substantially reducing the time available for research. Additional funds are needed to provide research capability concurrent with service commitments and to discharge Bureau responsibilities in this important work. Variations in mining systems and conditions compounded by human failure to combat dangerous roof conditions have relegated roof control largely to individual experiences or trial-and-error procedures. When timbering systems are maintained properly they are more or less successful. Optimum application of correct timbering methods to roof structures and mining systems throughout various mining districts or even individual mines has seldom been attained.

To obtain basic information that can be correlated with moments of inertia and stress distribution and deformation in rock formations, new instruments are needed to sample critical areas and to produce dependable data. Otherwise, efforts spent on roof control will be inconclusive and add little to present knowledge, which is more an art than a science.

Roof and rock bolting are outstanding examples of Bureau contributions to roof-control research that have been widely accepted and adopted in both coal and noncoal mines and tunnels. However, many technologic problems remain to be solved to place roof or rock bolting on a more scientific basis. Examples are the true nature of roof rocks, effect of gas pressure, types of roof anchorage, and proper selection of bolts together with proper methods of applying them. Related studies of rock mechanics by sonic methods and recently developed hydraulic-load cells give promise of some success in predicting behavior patterns of mine roof. Such studies, however, necessitate large, complex, triaxia test equipment beyond the limit of present funds to determine basic rock-mechanics data for correlation reference and from which basic scientific data can be developed.

Plan of work.—Appropriated funds will be expended mainly in Bureau laboratories and the experimental mines. Research will be directed toward improving electrical and diesel equipment to counteract health hazards of the mineral industries; establishing a more scientific basis for roof control, including prevention of "bumps" or rock bursts; improving mine ventilation generally and aiding the mining industry in solving difficult ventilation problems; and preventing dust explosions and mine fires by applying new concepts on dust binding, rock dusting, and controlling float dust transport.

Test work leading to Bureau of Mines approval of equipment will be continued and directed toward both improvements in previously approved equipment as well as new developments. Demand for the testing and approval of underground electric- and diesel-powered equipment, lighting and shot-firing devices, gas detectors, drill dust collectors, respirators, and self-contained breathing devices requires greater productive effort of Bureau personnel to provide this important service upon which the mineral industries depend for unbiased evaluation as regards the safety of such equipment.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase(+) or decrease(−)
Program and financing:				
Total obligations	$8,607,899	$9,536,000	$9,507,000	−$29,000
Unobligated balance brought forward	−23,000			
Transferred to "Operating expenses, Public Building Service," General Services Administration	3,000	1,000		
Unobligated balance	76,101			
Appropriation	8,664,000	9,537,000	9,507,000	−29,000
Obligations by objects:				
11 Personnel compensation	6,678,776	7,201,000	7,250,000	+49,000
12 Personnel benefits	488,741	528,000	530,000	+2,000
21 Travel and transportation of persons	350,013	375,000	375,000	
22 Transportation of things	19,942	25,000	25,000	
23 Rent, communications, and utilities	104,936	105,000	105,000	
24 Printing and reproduction	61,838	75,000	60,000	−15,000
25 Other services	353,243	485,000	425,000	−60,000
26 Supplies and materials	272,927	355,000	355,000	
31 Equipment	275,081	385,000	380,000	−5,000
32 Lands and structures	2,402	2,000	2,000	
Total obligations	8,607,899	9,536,000	9,507,000	−29,000

Senator BIBLE. Would you please comment on the proposed use of this fund in the next fiscal year?

Mr. MEMMOTT. Mr. Weaver.

Mr. THOMSON. You mean comment on the total program?

Senator BIBLE. That is correct. In a general way what do you use this $9,507,000 for?

Mr. WEAVER. This will be principally for inspection of coal mines, educational work, and research and testing. Coal-mine inspection takes around 60 percent of our total appropriation. Education takes around over a million dollars; $2 million is for research and testing, and about a half million is for control of fires in coal outcrops.

DUST EXPLOSION RESEARCH

Senator BIBLE. I note from page 95 of your justifications that there is a $100,000 decrease from last year's appropriation for dust explosion research and a decrease of $50,000 for methane detection and monitoring research.

What is the significance of that decrease? Does it mean these programs are being phased out?

Mr. WEAVER. The $100,000 decrease is a nonrecurring item that we no longer need the money for and we are stopping it right there. The $50,000 decrease is for the methane monitoring.

We have advanced far enough along in the research for the monitor we do not need that $50,000 for that purpose.

COAL MINING SAFETY PROGRAM

Senator Byrd?

Senator BYRD. Yes, Mr. Chairman.

Mr. Memmott, some of the people in the coal industry have told me about a new safety educational effort that is being conducted in West Virginia. They appear rather confident that it will be successful in reducing injuries in the coal mines.

Now, can you brief us on this effort?

Mr. MEMMOTT. I would be very happy to.

Mr. Weaver, would you comment on that?

Mr. WEAVER. Early in 1964, the Bureau of Mines in cooperation with the State of West Virginia, the United Mine Workers of America, and the coal mine operators met for the purpose of designing new methods of combating the accident rate in West Virginia coal mines.

They developed a program that requires the foreman in the mines, each supervisor, foreman, to conduct a 15- or 20-minute safety session at least once a week for all the people in the section he supervises. This program has been in effect since June 1964, and it is really having good results. We are very optimistic about it.

The Bureau of Mines prepares most of the safety message material and the visual aids. That is turned over then to the West Virginia Safety Association for approval before it is sent to all the mines in the State.

I dare say that virtually every mine in this State is under this plan. We have great hopes for it not only in West Virginia, but we hope it will go into the other States in the United States.

Senator BYRD. Is this a kind of pilot study; would you say?

Mr. WEAVER. It is a pilot study. It is something new for us, inasmuch as we are preparing all the material, but it is a cooperative program with the State. The State and other groups are cooperating every inch of the way.

Mr. MEMMOTT. If I may comment here, this is an activity we are very proud of. It is a joint effort with coal mine management, coal mine labor, the State of West Virginia Department of Mines, and the U.S. Bureau of Mines.

We hope to put this into effect in other States, because mine safety is a national problem.

Within the last 6 months, the record shows that there has been a reduction in accidents in the State of West Virginia.

CONSTRUCTION

Senator BIBLE. No additional funds are being requested for fiscal year 1966 for construction. You have, however, supplied information to be printed in the record indicating that a portion of the funds available now will be used to complete equipping an engineering and physical science building at Bartlesville, Okla., $43,677 will be reserved for contingencies in connection with the preparation of plans and specifications for construction at Bruceton, Pa., and that the remainder of the funds available for construction will be returned to the Treasury. This information will be inserted at this point in the record.

(The information referred to follows:)

Construction

Appropriation, 1965		
Unobligated balance from prior years		$126,013
Total available for obligation		126,013
Decreases:		
Construction and equipping of Bartlesville facilities	$4,544	
Return to Treasury	77,792	
Reserved for contingencies	43,677	
		126,013
Budget estimate, 1966		

Analysis by activities

Activity	Amount available, 1965	Fiscal year 1966			Total available, 1966 compared to total available, 1965
		Unobligated balance from prior years	Budget estimate	Estimated total available	
Laboratory facilities	$126,013	$43,677		$43,677	−$82,336

LABORATORY FACILITIES

Of the funds available in fiscal year 1965, $4,544 will be used for completing the equipping of the engineering and physical sciences building at Bartlesville, Okla.; $43,677 will be reserved for contingencies connected with preparation of plans and specifications for construction at Bruceton, Pa.; and $77,792 will be returned to the Treasury.

	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:			
Total obligations	$4,544		−$4,544
Unobligated balance available, start of year (−)	−126,013	−$43,677	+82,336
Unobligated balance available, end of year	43,677	43,677	
Unobligated balance lapsing	77,792		−77,792
Appropriation			
Obligations by objects:			
25.1 Other services	4,544		−4,544

Senator BIBLE. What construction is planned at Bruceton?

Mr. THOMSON. There is no construction at Bruceton. In 1963 funds were appropriated for preparation of plans and specifications for construction at Bruceton. Later the House Appropriations Committee questioned whether we had basic authority to construct at Bruceton, and instructed the Bureau to terminate planning contracts pending legislation. The Bureau is not seeking legislation at this time for the construction at Bruceton.

Senator BIBLE. $43,000 is held in reserve. This I don't understand.

Mr. THOMSON. These funds were transferred to GSA for plans and specifications. There still seems to be some question in postponing the completion of the contract as to whether there will be a penalty against the U.S. Government. These funds are being held in reserve pending a determination of a penalty for discontinuance of the contract or final cancellation.

Senator BIBLE. What contract did you discontinue? Simply the architectural contract?

Mr. THOMSON. Yes, sir.

Senator BIBLE. The drawing of plans and specifications.

Mr. THOMSON. Yes.

Senator BIBLE. The architects were advised that you weren't going forward?

Mr. THOMSON. That's right.

Senator BIBLE. You are holding a reserve just in case the U.S. Government is held liable for terminating the contract. Is that a correct statement?

Mr. THOMSON. That is correct.

GENERAL ADMINISTRATIVE EXPENSES

Senator BIBLE. Under the area of general administrative expenses, you indicate a need for $1,529,000 in fiscal year 1966, which is an increase of $119,000 over the amount appropriated for this purpose in fiscal year 1965.

Your justification will be printed in the record.

(The justification referred to follows:)

GENERAL ADMINISTRATIVE EXPENSES

EXPLANATION OF LANGUAGE CHANGE

The Bureau of Mines recommends that the language "including such expenses in the field administrative offices" and "including not to exceed $54,000 for travel and transportation of persons" be deleted from the appropriation text.

Because the greater portion of the field administrative offices expenses are funded from program funds appropriated directly or transferred from Department of Defense, Atomic Energy Commission, General Services Administration, and other agencies, it is believed that the above language is somewhat misleading and should be deleted.

Inasmuch as the Bureau has placed increased emphasis on efficient and effective use of funds for travel and transportation of persons and has established controls to such an end, it is believed that the restrictive limitation is unnecessary and should be eliminated.

General administrative expenses

Appropriation, 1964	$1,460,000
Appropriation, 1965	1,410,000
Pay cost supplemental	59,000
Total appropriation, 1965	1,469,000

SUMMARY OF INCREASES AND DECREASES, 1966

To provide for additional computer programers to assist in conversion of administrative data from manual to automated methods	+31,000
To provide for expansion of internal audit program	+9,000
Additional costs of within-grade salary advancements	+20,000
Net increase, 1966	60,000
Budget estimate, 1966	1,529,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers [1]	Amount available
General administrative expenses	$1,402,037	$1,410,000	$59,000		$1,469,000
Unobligated balance lapsing	57,963				
Total	1,460,000	1,410,000	59,000		1,469,000

[1] Represents transfers to General Services Administration unless otherwise footnoted.

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
General administrative expenses	$1,402,037	$1,469,000	$1,529,000	+$60,000
Unobligated balance lapsing	57,963			
Total	1,460,000	1,469,000	1,529,000	+60,000

GENERAL ADMINISTRATIVE EXPENSES

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
General administrative expenses	$1,402,037	$1,469,000	$1,529,000	+$60,000

General administrative expenses

The estimate of $1,529,000 is an increase of $60,000 over 1965. The increase includes $20,000 for within-grade salary advancements; $31,000 for four digital computer programers; and $9,000 for an internal auditor.

Need for increase.—The Bureau of Mines is requesting $31,000 for fiscal year 1966 to add four digital computer programers to its staff to assist in the conversion of the processing of payroll, financial accounting, personnel and property management, and procurement data from manual to automated methods.

The conversion of administrative data processing systems to automated methods will achieve two basic improvements: (1) It will enable the Bureau of Mines to process this work more efficiently in terms of time, money, and manpower; (2) it will enable the Bureau of Mines administrative activity to provide more current, more accurate, and more complete information for purposes of better management.

By using the Bureau of Reclamation's Honeywell 800 computer in Denver, Colo., and by sharing the burden of development of automated payroll system with the Bureau of Reclamation, the Bureau of Mines will reduce conversion and processing costs substantially and will complete the conversion of the payroll system in fiscal year 1966. However, even before the payroll system conversion has been completed, the programers that the Bureau of Mines is requesting will be needed to begin the conversion of the other administrative systems.

The sum of $9,000 is to cover the salary and related expenses of one junior auditor. The Bureau of Mines is one of the more diversified bureaus of the Department, with research and development programs, operations, contract, and construction activities which are increasing yearly. In fact, the helium activity alone has increased more than sixfold, resulting in an additional need for incisive

independent review and audit. Presently, the Office of Audit consists of two auditors and one trainee—a staff insufficient to render the required audit services which relate not only to the Bureau's activities, but also to contractors' operations under contracts. Based upon the total Bureau manpower of about 4,900, the ratio is (including the trainee) approximately 1 auditor to 1,635 employees—impossible to meet the audit standards and objectives. An increase of $9,000 for a junior auditor and related expenses would assist in alleviating some of the problems of understaffing and meeting audit statutory requirements (64 Stat. 836; 31 U.S.C. 66a).

Plan of work.—The estimate for the "General administrative expenses" appropriation provides for the immediate office of the Director, the administrative functions in the Washington office, and the key administrative staffs in the eastern and western administrative offices. All other expenses generally classified as administrative, required to carry on the activities of the technical research staffs, will be charged to program funds.

The office of the Director provides executive direction in conducting programs designed to conserve and develop mineral resources and to promote safety and healthful working conditions in the mineral industries.

The administrative functions, headed by an Assistant Director—Administration, advises the Director on all administrative management matters; and supervises and coordinates all Bureau administrative activities including budget, finance, personnel, management analysis, procurement, property management, data processing, printing and publications, inspection and internal audit, and safety and employee relations for the Bureau as a whole.

The Bureau's proposed 1966 administrative program totals $3,349,000 of which $1,529,000 is requested under the "General administrative expenses" appropriation.

Following is a comparison of the program (obligations):

	1964	1965	1966
"General administrative expenses" appropriation	$1,402,037	$1,469,000	$1,529,000
Share of participating program activities	1,676,166	1,798,000	1,820,000
Total, administrative program	3,078,203	3,267,000	3,349,000

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$1,402,037	$1,469,000	$1,529,000	+$60,000
Unobligated balance	57,963			
Appropriation	1,460,000	1,469,000	1,529,000	+60,000
Obligations by objects:				
11 Personnel compensation	1,144,951	1,220,000	1,275,000	+55,000
12 Personnel benefits	84,251	91,000	96,000	+5,000
21 Travel and transportation of persons	41,522	54,000	56,000	+2,000
22 Transportation of things	7,767	8,000	8,000	
23 Rent, communications, and utilities	15,739	15,000	15,000	
24 Printing and reproduction	16,547	16,000	16,000	
25 Other services	57,870	23,000	23,000	
26 Supplies and materials	16,970	22,000	21,000	−1,000
31 Equipment	16,420	20,000	19,000	−1,000
Total obligations	1,402,037	1,469,000	1,529,000	+60,000

Senator BIBLE: Do you have any particular comment that you would like to make to the committee?

Mr. RAMPACEK. Yes. This fund is for the general administration of the Bureau of Mines. It provides for the immediate office of the Director and also for carrying out certain administrative functions, such as budgeting, personnel, audit, and so forth.

Senator BIBLE. In addition to that appropriation it is intended that participating program activities will share in the general administrative expenses to the extent of $1,820 million.

Would you please place in the record a statement showing how much of this amount each activity will supply?

Mr. RAMPACEK. Yes, sir.

(The statement referred to follows:)

BREAKDOWN OF PARTICIPATING PROGRAM ACTIVITIES IN THE ADMINISTRATIVE PROGRAM, 1966

Conservation and development of mineral resources	$1,232,000
Health and safety	190,000
Transferred funds from other Government agencies	283,000
Contributed funds	115,000
Total	1,820,000

Senator BIBLE. There will also be placed in the record your statement explaining various administrative matters, including your request to purchase 71 passenger motor vehicles for replacement.

(The statement referred to follows:)

EXPLANATION OF ADMINISTRATIVE PROVISIONS

Purchase of passenger motor vehicles.—The Bureau of Mines requests authority to replace 71 passenger motor vehicles. The vehicles requested for replacement represent about 21 percent of the Bureau's fleet of passenger motor vehicles and all meet the Bureau of the Budget standards for replacement on the basis of age or mileage. The replacement of these vehicles is necessary in the interest of economy and efficiency since most of the Bureau's vehicles are subject to use under adverse conditions due to poor roads in mountainous areas and under all types of weather conditions in the various field areas.

Transportation of students.—Due to the remoteness of the Bureau's helium plants and some of the synthetic liquid fuels installations, it is necessary to furnish the children of employees with transportation to areas where adequate school facilities are available.

Contributions.—Various industrial organizations have expressed interest in many phases of the Bureau's activities and are at times willing to contribute funds, experienced personnel, special equipment, etc., toward accomplishing certain objectives useful to industrial purposes. The Bureau endeavors to cooperate with industry wherever possible and authorization to accept such contributions is a distinct aid in furthering such cooperation.

Sale of metals and mineral products.—In some of the metallurgical pilot plants of the Bureau quantities of special metals may be manufactured which might be of value to industrial concerns. Funds received from the sale of such products would be covered into miscellaneous receipts.

Senator BIBLE. There will be placed in the record a statement submitted in support of the Bureau of Mines request for an increase of $12,500,000 in the limitation on contracting authority for helium, and for an additional $16,780,000 in borrowing authority.

(The statement referred to follows:)

HELIUM FUND

The Bureau of Mines requests an increase of $12.5 million in the limitation on contracting authority for helium as defined in section 3(a)(2) of the Helium Act from the present level of $47.5 million a year to $60 million a year. With the requested increase, the Bureau of Mines would expect to conserve for useful purposes beyond 1985, about 65 billion cubic feet of helium that would otherwise be wasted into the atmosphere. This is about 24 billion cubic feet more than can be conserved under the present $47.5 million program.

The helium program has been the subject of extensive review and evaluation during the past year and a half both from the standpoint of the need for the program and alternative methods of implementation. Two interagency study groups have recommended separately the proposed program expansion. The first group concerned principally with the future role of helium in science and technology concluded: "To deprive future Americans of the use of this natural resource because of casual wastage in our time would be a serious and irreparable mistake." The second study group headed by Dr. Otto Eckstein, of the Council of Economic Advisers, in a report dated December 1, 1964, stated: "The present program of helium production and storage is well justified and should be expanded to the scale currently proposed by the Bureau of Mines."

The prospective needs of future generations of Americans for the presently wasting natural helium resources emphasizes our responsibility to conserve this unique and valuable limited natural resource.

The Bureau of Mines also requests that $16,780,000 additional borrowing authority, pursuant to section 12(a) of the Helium Act Amendments of 1960 (Public Law 86–777), be made available without fiscal limitation for the purpose of carrying out its responsibilities under the act for helium production, distribution, conservation, and research. Income from the sale of helium and related services, supplemented by the requested borrowing authority, will be used to finance the helium program in fiscal year 1966. This includes operation and maintenance of five Government-owned production plants and distribution facilities, the helium research program, purchases of helium produced for conservation, and the related supporting facilities and services.

Budget expenditures reflected in this request are based on the assumption that the five private plants producing helium for conservation will produce 3 billion cubic feet of helium in fiscal year 1966 (approximately the current rate of production). If these companies are successful in producing greater quantities of helium (and the plants were designed to produce at higher capacities) additional expenditures will be required by the Bureau of Mines to purchase such excess production in accordance with existing contractual obligations. Any such additional expenditures will correspondingly reduce estimates of fund balances on hand at the end of the fiscal year.

The five Government-owned plants will continue operating to produce an estimated 767 million cubic feet of helium during fiscal year 1966 and 675 million cubic feet of this product will be shipped to meet current demands. The remaining 92 million cubic feet will be stored underground in the Cliffside gasfield, with the helium purchased from the private plants, and saved for use in the future.

Research aimed at wiser and more efficient use of our limited natural helium resources will continue. This research will include basic information of the properties of helium and helium mixtures, a continuing survey of helium resources, and investigations looking to improvements in methods of producing, transporting, and using helium. More precise thermodynamic data, basic enthalpy information, faster and more accurate analytical methods, improved processes for recovering and purifying helium, and more precise measuring instruments are some of the immediate objectives of the research program.

Helium fund

Estimated income, 1965:	
Operations	$25,242,000
Borrowing authority	14,000,000
Estimated income, 1966:	
Operations	26,214,000
Borrowing authority	16,780,000

Financial summary

	Actual, 1964	Estimate, 1965	Estimate, 1966
Income and expenses (funded):			
Income:			
Sale of helium to Government agencies	$17,339,000	$17,150,000	$18,025,000
Sale of helium to non-Federal consumers	5,759,000	5,600,000	5,600,000
Other income	2,606,000	2,492,000	2,589,000
Total income	25,704,000	25,242,000	26,214,000
Expenses:			
Manufacturing expenses	4,889,000	5,013,000	5,208,000
Administrative and other expenses	1,069,000	1,080,000	952,000
Research	529,000	680,000	760,000
Other costs	136,000		
Total expenses	6,623,000	6,773,000	6,920,000
Net income (funded)	19,081,000	18,469,000	19,294,000
Unobligated balance brought forward:			
Cash (operating fund)	9,180,000	−362,000	1,262,000
Borrowing authority	16,000,000	20,000,000	15,500,000
Borrowing authority (new)	6,000,000	14,000,000	16,780,000
Changes in selected resources	+233,000	+250,000	+10,000
Total funds available	50,494,000	52,357,000	52,846,000
Capital outlay:			
Crude helium for underground storage	30,447,000	33,902,000	33,425,000
Land, structures, and equipment	364,000	1,693,000	2,386,000
Pipeline construction	45,000		
Total capacity outlay	30,856,000	35,595,000	35,811,000
Unobligated balance carried forward:			
Cash (operating fund)	−362,000	1,262,000	1,035,000
Borrowing authority	20,000,000	15,500,000	16,000,000
Total	19,638,000	16,762,000	17,035,00

Helium Procurement

Senator Bible. Senator Mundt, do you have a question?

Senator Mundt. This helium matter—$16,780,000 borrowed from the Treasury for the purchase of helium. It runs in my mind that we used to authorize large expenditures under your borrowing authority. It was a lot of money. This is small. What has happened to change that?

Mr. Memmott. Mr. Chairman, the Assistant Director, Helium, is present, Mr. Henry Wheeler.

Senator Bible. Mr. Wheeler, would you like to come forward?

Mr. Wheeler. Yes, sir.

Senator Bible. First, identify yourself for the record.

Mr. Wheeler. I am an Assistant Director of the Bureau of Mines, in charge of the helium activity.

Senator Bible. Are you one of the five men on this team, who have been closing these mining activities in Alaska?

Mr. Wheeler. Yes, sir. I will take full responsibility for any closings within the helium activity.

Senator Mundt. You mean the five anonymous assistant directors are anonymous no longer?

Senator Bible. I am just trying to find out who the people are.

Statement of Director Wheeler

Mr. Wheeler. Because the helium program represents a very substantial part of the Bureau of Mines budget, moneywise, I have a

short statement that I have prepared, and if it pleases the committee, I would like to read this, and then come back and answer any questions you may have.

The helium program is functioning according to plan. We are presently producing, shipping, and storing more helium and conducting more research on helium than ever before, and we are doing all of these things with only 625 employees in the entire helium activity—7 less than when we appeared before you at this same time last year.

The private plants under contract in the program are all operating, and they delivered about 2 billion cubic feet of helium to us for conservation in the first 7 months of this fiscal year.

We are presently paying an average price of $11.24 a thousand cubic feet for this helium—5 cents a thousand less than the initial average unit price. The reduction in price resulted from adjustments under the escalation provisions in the contracts, related to a Bureau of Labor Statistics price index.

The freight rates applicable to helium in tank cars were reduced about 31 percent during the past year—making it unnecessary for the Bureau to expend about $1 million budgeted for fiscal year 1965 to acquire a liquid helium production-transportation capability. The reduction in freight rates will save the Government about $650,000 a year in helium transportation costs.

Also, we will not expend the $117,000 budgeted to extend our microwave radio network the full length of our 425-mile helium plant-pipeline system in Texas, Oklahoma, and Kansas.

This system is operating very efficiently, and we now believe that we can provide the required surveillance and maintenance with telephone and other less expensive methods of communication.

These items are cited to assure you that our evaluation of the need for expenditures in the helium program extends beyond these hearings, and that they are avoided whenever possible. We do not consider that the approval by the Congress of borrowing authority for the program constitutes a license to spend regardless of subsequent needs and circumstances.

This concludes this statement.

HELIUM EXTRACTION

Senator MUNDT. This is something which you have to get at a certain time, or it is gone forever; right?

Mr. WHEELER. That is right. The helium occurs in natural gas, which is produced to supply natural gas fuel markets, and unless the helium is extracted at the time the gas is taken to the fuel markets, it is lost forever.

Senator MUNDT. Does the Government buy this helium?

Mr. WHEELER. Yes, sir.

Senator MUNDT. And stores it?

Mr. WHEELER. Yes, sir.

SALES

Senator MUNDT. Do we store it, or sell it?

Mr. WHEELER. We do both. We store most of it—selling only the volume needed to meet current helium requirements. The Bureau of Mines sells it to other Government agencies. So, we use most of it ourselves within the Federal Government. Approximately

10 percent of the helium we sell is used by private consumers. The Government uses about 90 percent of it.

Senator MUNDT. How do you get the money to repay the Treasury?

Mr. WHEELER. From the sale of helium. The Helium Act requires that we sell helium at a price which will enable the program to be self-liquidating within 25 to 30 years.

We are doing this, of course. The Bureau of Mines is selling, as I said, 90 percent of it to the Department of Defense, and to NASA, and other Federal agencies; so although the receipts from such sales represent income to the Bureau of Mines, it does come out of the Department of Defense and NASA appropriated funds to a large extent.

Senator MUNDT. Except for 10 percent of it, we are selling it to ourselves?

Mr. WHEELER. That is correct.

Senator MUNDT. So this is really an expenditure. Not an expenditure of the Bureau of Mines, but an expenditure to the Government?

Mr. WHEELER. That is correct.

Senator MUNDT. Do you pay interest to the Treasury?

Mr. WHEELER. Yes, sir. We borrow money from the Treasury. We sign notes, and the interest rate is given to us by the Treasury Department.

Senator MUNDT. Whatever the Treasury says, you pay?

Mr. WHEELER. Yes, sir.

INCOME FROM SALES TO PRIVATE INDUSTRY

Senator MUNDT. How much actual cash income from outside the Government is there in this 10 percent transaction?

Mr. WHEELER. I believe that is one number I do not have with me.

Senator MUNDT. You can put it in the record.

Senator BIBLE. It may be supplied for the record.

Senator MUNDT. That is all.

(The information referred to follows:)

In fiscal year 1964, we received $5,759,000 from helium sales to non-Federal customers. However, about one-half of the helium sold to these customers was ultimately used, and paid for, by Federal agencies when the helium was used on Government contracts. Consequently, the income from outside the Federal Government amounted to about $3 million in fiscal year 1964.

COORDINATION OF HELIUM PROGRAM WITH OIL RESEARCH ACTIVITIES

Senator BIBLE. There is one question which has been suggested to me by Senator McGee on the subject of helium. While we are developing questions in this field, let me ask you this question with reference to activity in the field of helium development: Is this program guided by or coordinated with oil research activities involving petroleum and related products?

Mr. WHEELER. We include in our program a survey of all new natural gas discoveries in the United States. We obtain samples of each new gas discovery and analyze them for their helium content. We obtain these samples largely from the oil and gas companies that drill the wells. They supply samples to us which we anlyze, and then we furnish them the analytical information.

Senator BIBLE. Your answer, then is, "Yes," you are coordinating efforts along this line.

Mr. WHEELER. We are coordinating in the discovery of new helium supplies. Of course, we are also utilizing oil and gas companies in the program itself. The contracts that we have were all made with gas companies.

Mr. MEMMOTT. Mr. Chairman?

Senator BIBLE. Yes, Mr. Memmott.

Mr. MEMMOTT. If I may comment here, I have visited the helium activity along with Assistant Director Rampacek.

An item we are specifically going to look into, is the coordination of the Petroleum and Helium Research Centers. As of this time, I do not believe we can answer in the affirmative that there is complete coordination.

Mr. WHEELER. I do not know what you are talking about. I think we are coordinating with anybody who has an interest in the helium program.

Mr. MEMMOTT. He is talking about petroleum.

Senator BIBLE. The question is whether you coordinate with the oil research activities in the field of petroleum and related activities, not whether you coordinate with others in the helium industry.

I do not know whether you do or do not.

Mr. WHEELER. Most of our research work in the Bureau of Mines, helium activity, is directed at helium itself—finding ways to better produce and utilize helium—research on the properties of helium, and ways to extract it economically from natural gas.

Some of that work involves the determination of thermodynamic and other physical data, which might have application in the petroleum industry (although it is not designed for that purpose) and in those areas we do contact interested oil and gas companies.

SEMINAR ATTENDANCE

We have had several scientific seminars at the helium activity, and we have gone to similar seminars at the University of Kansas and elsewhere, which were attended by oil and gas people, so that we could exchange information as to what we are doing in our respective research activities.

Senator BIBLE. I think to keep the record clear, we should ask what further do you propose to do in this field? You say you are going to do more. What do you specifically propose to do?

Mr. MEMMOTT. Yes, Mr. Chairman, and members of the committee, we are evaluating the possibility of helium research working through the petroleum research under our Assistant Director—Minerals Research, Mr. Rosenbaum, who is not here today.

If it pleases the committee, we would be more than happy to furnish a statement to you:

Senator BIBLE. I think it would be helpful, and would probably answer the questions Senator McGee has in mind.

(The statement referred to follows:)

Several months ago, the Deputy Director and the Assistant Director—Administration, reviewed the management, administration and programs of the helium activity. One of the elements of study concerned the coordination that existed between the helium and petroleum research activities. The practicality of

helium research being conducted by the petroleum group also was considered, but no definite decision was reached. In recent weeks, however, coordination of research of the petroleum and helium groups was discussed in a meeting between the Research Director of the Helium Research Center, Amarillo, Tex., and the Acting Assistant Director—Minerals Research, to assure complete coordination between the two research organizations in the future.

Senator BIBLE. There have been furnished two tabulations pertaining to the helium program. These will be printed in the record.

(The tabulations referred to follow:)

BUREAU OF MINES HELIUM ACTIVITY

Estimated capital expenditures, fiscal year 1966

Office furniture and equipment	$7,600
Automotive equipment	29,000
Drill 4 gas wells in the Cliffside gasfield	316,700
Construct Cliffside field and pipeline maintenance facility	253,000
Gantry crane, and hydrostatic test equipment for tank car maintenance facility—Keyes, Okla	60,000
Pave loading dock area—Amarillo helium plant	57,600
Purchase 5 helium semitrailers	217,100
Purchase and fabrication of other plant and operating equipment	160,200
Research equipment purchases	69,400
Construction and frabrication of experimental apparatus for research projects	50,000
Total estimated capital expenditures, fiscal year 1966	1,220,600

Estimated funds available and planned expenditures for fiscal years 1965 and 1966 (revised Feb. 5, 1965)

[In thousands]

	Fiscal year 1965	Fiscal year 1966
Cash balance (operating fund) beginning of year	−$362	$730
Unused borrowing authority prior years	20,000	9,000
Borrowing authority provided this fiscal year	14,000	16,780
Total	33,638	26,519
Income:		
Helium sales:		
Federal agencies	17,150	18,025
Non-Federal consumers	5,600	5,600
Other income	2,492	2,589
Total income	25,242	26,214
Changes in selected resources	250	10
Total funds available	59,130	52,734
Expenditures: Expenses, operations, research, and administration	6,861	6,920
Capital outlay:		
Crude helium for underground storage	41,016	44,585
Land structures and equipment	1,523	1,221
Total estimated expenditures	49,400	52,726
Unobligated balance end of fiscal year:		
Cash (operating fund)	730	8
Borrowing authority	9,000	
Total	9,730	8
Estimated production (million cubic feet)	787	767
Estimated sales (million cubic feet):		
Federal agencies	$475	$515
Non-Federal consumers	$160	$160
Crude helium purchases (million cubic feet)	$3,555	$3,873

Senator BIBLE. A table showing obligations incurred by the Bureau of Mines will be included in the record.

(The table referred to follows:)

Obligations incurred by the Bureau of Mines by activity and source of funds, fiscal years 1964, 1965, and 1966

	1964	1965	1966
Coal:			
Bureau of Mines appropriation	$6,222,198	$6,549,000	$6,369,000
Department of Health, Education, and Welfare	185,662	276,000	276,000
Department of the Interior	20,025	18,000	18,000
Atomic Energy Commission	226,044	149,000	5,000
General Services Administration	4,704	7,000	7,000
Other agencies	16,323	19,000	19,000
Contributed funds	11,890	41,000	50,000
Total	6,686,846	7,059,000	6,744,000
Petroleum:			
Bureau of Mines appropriation	2,180,022	2,329,000	2,329,000
Department of the Air Force	94,314	126,000	126,000
Department of the Army	48,931	35,000	35,000
Department of Health, Education, and Welfare	309,995	300,000	305,000
Department of the Interior	12,880	5,000	5,000
Department of the Navy	28,975	20,000	20,000
Atomic Energy Commission	88,916	61,000	61,000
Contributed funds	179,850	167,000	171,000
Total	2,943,883	3,043,000	3,052,000
Oil shale:			
Bureau of Mines appropriation	873,555	933,000	1,033,000
Atomic Energy Commission	38,000	21,000	21,000
Total	911,555	954,000	1,054,000
Metallurgy:			
Bureau of Mines appropriation	9,507,224	10,015,000	10,345,000
Department of Agriculture	14,230	26,000	25,000
Department of the Army	2,747	66,000	75,000
Department of the Interior	39,731	18,000	19,000
Atomic Energy Commission	760,052	450,000	458,000
Other agencies	5,608	9,000	9,000
Contributed funds	875,110	845,000	870,000
Total	11,204,702	11,429,000	11,801,000
Mining:			
Bureau of Mines appropriation	2,556,609	2,807,000	3,162,000
Department of the Air Force	1,568	33,000	33,000
Department of Health, Education, and Welfare	54,766	185,000	244,000
Department of the Navy	18,966	13,000	15,000
Atomic Energy Commission	30,163		
Contributed funds	8,632	20,000	20,000
Total	2,670,704	3,058,000	3,474,000
Marine mineral mining:			
Bureau of Mines appropriation	52,993	134,000	234,000
Contributed funds		56,000	56,000
Total	52,993	19,0000	290,000
Explosives:			
Bureau of Mines appropriation	477,253	507,000	557,000
Department of the Air Force	180,403	129,000	128,000
Department of the Army	133,714	102,000	102,000
Department of Commerce	5,611		
Department of Defense	86,938	97,000	102,000
Department of Health, Education, and Welfare	29,974	46,000	46,000
Department of the Navy	79,883	53,000	77,000
Atomic Energy Commission	10,000		
National Aeronautics and Space Administration	69,270	207,000	256,000
Contributed funds	77,916		
Total	1,150,962	1,141,000	1,268,000
Statistics: Bureau of Mines appropriation	1,469,824	1,575,000	1,805,000
Economic analysis: Bureau of Mines appropriation	210,278	226,000	226,000

Obligations incurred by the Bureau of Mines by activity and source of funds, fiscal years 1964, 1965, and 1966—Continued

	1964	1965	1966
Bituminous coal:			
Bureau of Mines appropriation	$900,925	$978,000	$898,000
Department of the Air Force	101,631	105,000	105,000
Department of the Army	66,945	72,000	73,000
Department of Health, Education, and Welfare	31,404	32,000	32,000
Department of the Interior	11,563	14,000	15,000
Department of the Navy	48,000	48,000	48,000
Atomic Energy Commission	19,553	10,000	10,000
Executive Office of the President	18,596	10,000	10,000
Veterans' Administration	37,000	39,000	39,000
Other agencies	7,465	8,000	8,000
Total	1,243,082	1,316,000	1,238,000
Anthracite:			
Bureau of Mines appropriation	515,753	421,000	400,000
Department of the Army	79,547	8,000	----------
Contributed funds	7,552	----------	----------
Total	602,852	429,000	400,000
Petroleum:			
Bureau of Mines appropriation	538,877	576,000	560,000
Department of the Interior	44,680	37,000	40,000
Total	583,557	613,000	600,000
Minerals:			
Bureau of Mines appropriation	3,100,555	3,278,000	3,144,000
Department of the Army	46,341	125,000	146,000
Department of Commerce	54,703	54,000	52,000
Department of Health, Education, and Welfare	26,400	10,000	10,000
Department of the Interior	153,305	225,000	244,000
Other agencies	15,392	21,000	25,000
Total	3,396,696	3,713,000	3,621,000
International activities:			
Bureau of Mines appropriation	507,666	563,000	563,000
Central Intelligence Agency	231,217	252,000	252,000
AID	348,485	360,000	360,000
Total	1,087,368	1,175,000	1,175,000
Inspections, investigations, and rescue work:			
Bureau of Mines appropriation	6,629,076	7,038,000	7,029,000
Department of the Interior	12,264	12,000	13,000
Other agencies	2,297	2,000	7,000
Contributed funds	700	----------	----------
Total	6,644,337	7,052,000	7,049,000
Control of fires in coal deposits:			
Bureau of Mines appropriation	394,362	408,000	408,000
Contributed funds	145,584	150,000	175,000
Total	539,946	558,000	583,000
Health and Safety research:			
Bureau of Mines appropriation	1,584,461	2,090,000	2,070,000
Department of the Army	581	7,000	2,000
Department of Health, Education, and Welfare	34,830	----------	----------
Department of the Navy	5,863	8,000	20,000
Total	1,625,735	2,105,000	2,092,000

Obligations incurred by the Bureau of Mines by activity and source of funds, fiscal years 1964, 1965, and 1966—Continued

	1964	1965	1966
General administrative expenses:			
Bureau of Mines appropriation	$1,402,037	$1,469,000	$1,529,000
Department of the Interior	1,922		
Contributed funds	3,508	3,000	3,000
Total	1,407,467	1,472,000	1,532,000
Laboratory facilities: Bureau of Mines appropriation	586,095	5,000	
Drainage of anthracite mines: Bureau of Mines appropriation	441,697	1,700,000	1,700,000
Helium production:			
Federal and non-Federal sources	37,246,000	42,118,000	42,721,000
Special research for NASA	14,105	33,000	
Total	37,260,105	42,151,000	42,721,000
Summary:			
Bureau of Mines appropriation	40,151,460	43,601,000	44,361,000
Other agencies	4,012,482	3,963,000	3,998,000
Contributed funds	1,310,742	1,282,000	1,345,000
Helium production: Federal and non-Federal sources	37,246,000	42,118,000	42,721,000
Total	82,720,684	90,964,000	92,425,000

SUBMISSION OF QUESTION'S BY AND ANSWERS TO SENATOR MCGEE

Senator BIBLE. Senator McGee also has some questions on other aspects of your program. I will hand you the questions and you may supply the answers for the record.

Mr. MEMMOTT. Of course, Senator.

(The information referred to follows:)

RIFLE OIL SHALE PLANT

Question. What progress has been made at the Rifle oil shale plant under the leasing arrangement made in May of 1964?

Answer. The Colorado School of Mines Research Foundation, which is operating the plant for the industry sponsors, had a full crew of approximately 80 people on site by July 1, 1964, proceeded to renovate the pilot plant retorting sections of the plant, and started tests on the small, 6-ton-per-day retort in mid-August. This retort has been in operation intermittently since that time. In December, the next larger retort at Rifle, having a capacity of 12 tons per day, was put into limited operation. The work to date has been designed largely to train operating personnel and to make preliminary tests in regard to retort throughout and the effects of various types and arrangements of oil recovery equipment. The data from the operations are being obtained and evaluated by Bureau of Mines observers. To date, the results have not been very definitive, but this is to be expected in view of the rather short period of operations to date and the inexperience of the operating personnel.

The Bureau's 200-ton-per-day retort has not been put into operation, nor has any mining or refining work been done.

Question. How many companies are involved in the Rifle operations, and who are they?

Answer. Six companies are involved at the present time. The original sponsors were the Socony Mobil Oil Co., and Humble Oil & Refining Co. Subsequently, Phillips Petroleum Co.; Sinclair Research, Inc.; Continental Oil Co.; and Pan American Petroleum Co. joined the venture.

Question. How much money is being spent by the Government in connection with the Rifle plant?

Answer. Approximately $100,000 per year. This covers the salary costs of three Bureau men stationed at Rifle for the purpose of closely observing the

operations and obtaining the resulting data, the equivalent of one man full time at the Laramie Petroleum Research Center involved with evaluation of the data and preparation of pertinent engineering reports, plus support services such as stenographic and drafting help. In addition, the Bureau is obligated to pay for utilities and other services directly related to housing and office space at Rifle assigned to Bureau on-site personnel, and has nominal supply and materials expense and administrative and supervisory costs directly assignable to the Rifle project.

INCREASE REQUESTED FOR OIL-SHALE PROGRAM

Question. What does the Bureau of Mines plan to do with the $100,000 increase requested for the oil shale program?

Answer. This increase is for the purpose of undertaking preliminary steps leading to one or more field tests of in situ retorting of oil shale. The first year's work will consist principally of selection of sites for such field tests. The selection process will involve checking with State agencies and others to determine what sites can be made available, followed by a modest program of core drilling and analysis of cores to pinpoint exact locations. It is not possible at present to predict a location for the proposed test, but consideration will be given to possibilities throughout the oil shale areas of Wyoming and Utah as well as in Colorado.

Question. How many additional personnel and what additional personnel cost would be required in connection with the proposed increase in oil shale funds?

Answer. Five additional technical men will be needed including a supervisory chemical engineer, a petroleum engineer, a geologist, a physicist, and a chemist. In addition, one clerical worker will be needed. Administrative and accounting functions can be handled without adding people. The increased salary load will be approximately $47,000.

IN SITU RETORTING PROGRAM

Question. Presuming funds are provided for the site selection work on an in situ retorting program, what will the cost in later years be?

Answer. An actual field test will cost in the order of $600,000 per year and will require approximately 3 years to complete. The exact amount and location depends somewhat on the site itself and on the problems that are encountered. The concept of insitu retorting is relatively new and largely untried; thus the problems cannot be exactly assessed at present.

Question. Why should the Government undertake work on in situ retorting of oil shale in view of what appears to be mounting industry interest in developing the process?

Answer. The results of whatever work industry does on in situ retorting undoubtedly will be kept "company confidential" for a considerable length of time. In the meantime, Government needs to know as much as possible about the potential of the process for several reasons. For example, knowledge of what might be expected in the way of resource recovery from a given deposit of shale subjected to in situ retorting may be of considerable importance in setting policy for development of public oil shale lands. Similarly, knowledge of what effect in situ retorting of one shale layer may have on the recovery potential of an overlying or underlying layer is important in the interest of efficient use. The proposed field work would stress such considerations, where industry work probably would not.

RESEARCH ON OIL SHALE

Question. Why is there a need for continued research on oil shale by Government, particularly if commercial development is imminent as seems probable?

Answer. Government research and development work on oil shale through the years has been directed carefully to supply a sound technical foundation upon which an industry can be efficiently built and operated. For the most part, except where the need for larger scale effort has been apparent, the effort has been along lines of laboratory and bench-scale investigations having wide application and that are fundamentally prerequisite to most if not all probable approaches to

oil shale development. Work of this type has and will continue to be worthwhile in the interest of promoting the most efficient use possible of our oil shale resources. Industry efforts can be expected to be largely in the areas of process development and solving of problems that are peculiar to a particular company's operations. Most Government effort, in contrast, is relatively long range, has more universal application, and is generally much more fundamental than industry's. Thus, even if an oil shale industry were in full swing today, Government support in the interest of increased efficiency of processing and use is justified.

Other important justifications include the need for Government to have the best and most complete picture possible of the oil shale potential for long-range planning under normal and emergency conditions and for setting oil shale development policy.

Western Coal Reserves

Question. What is being done by the Bureau to assist the commercial development of western coal reserves?

Answer. The electric power industry is the major tonnage growth market for western coals at the present time. Bureau research aimed at making coal a more attractive fuel for this market includes work on low cost, safe storage of the lower rank coals that are typical of the West, determination of their coal-washing properties, improved methods of pulverizing these coals and studies of any special ash problems that tend to reduce plant efficiency and lower boiler availability. Solutions for these problems will assist the western coal industry in increasing its share of the growing utility market.

Question. Are there any other markets for western coals that should be studied?

Answer. The western steel industry still must use, as a blending stock, strongly coking coals transported over long distances to produce a satisfactory coke from western coals. The long rail haul makes the delivered price of the coal very high and this increases coke and, in turn, steel prices. Efforts are now underway to determine what can be done to make a satisfactory coke using only coals found in the West.

Question. What methods can be used to make a good coke from weakly coking coal?

Answer. Several different approaches can be used. One industrial firm has perfected a method to make a "formed coke" from such coals. It is said to be a very satisfactory replacement for high-temperature coke.

Apparently, however, for U.S. conditions the economics are not right for commercial exploitation. The method requires a number of process steps suggesting that a simpler method could be devised.

However, with limited funds, the Bureau has decided to concentrate on an alternate approach involving carbonizing, at low temperature, part of the coal and blending it back with the original coal. We have just finished breaking in a test oven that would permit a systematic study of the variables involved—such as degree of carbonization of the blending coal, the amount of the blending coal, the effect of different coals, and other important processing conditions that might affect final coke quality.

Question. When will results that could be useful to the steel industry be expected?

Answer. While we can plan the tests that need to be made, we cannot predict that the results will be favorable. Assuming, however, that this general approach is successful, we should have information of value within 2 years. However, optimizing the conditions will take longer and a systematic study of how the important western coal seams behave will take a number of additional years.

Question. Is there any other research that the Bureau is doing that could prove to be helpful in developing markets for western coals?

Answer. Most of the Bureau's work is applicable to all ranks of coal—including western coals. I have talked mainly about those projects which are directed toward solving the special problems associated with western coals but other Bureau projects that are underway could also result in more widespread use of western coal. For example, the coal-fired gas turbine being studied at Morgantown, if successful, would be just as useful to western as eastern electric utilities, some of the research on gasification of coal to make a high-B.t.u. gas is more readily adaptable to lower rank, more reactive coals, than to the higher rank coals and low-temperature carbonization is more easily handled using the noncoking or weakly coking coals of the West than any other rank. Successful research in these areas, thus, would have a beneficial effect on western coal markets.

TRANSFER OF COAL RESEARCH FACILITIES

Question. I understand that plans are underway to transfer coal research facilities which are presently located at Denver, Colo., to Grand Forks, N. Dak.

Answer. That is our plan.

Question. I presume that the justification for this move is one of economy, and I would like to know the estimated annual savings from such a move.

Answer. While some annual savings may accrue in the transfer of our coal research facilities from Denver, Colo., to Grand Forks, N. Dak., the primary objective of the move is more effective operation of the Bureau's minerals research work. By consolidating the Denver coal research activities with those at Grand Forks, we will be able to develop a larger installation serving the needs of the western coal industry. We believe that the planned consolidation will promote efficiency in our research program and that as a result we will be able to perform better in our study of all coals, including those of the West. In addition, the move of our Denver coal research activities elsewhere is but one phase of a coordinated plan to strengthen the Bureau's field operations. While certain personnel qualified in the processing and utilization of coal will be leaving the Denver area, a concurrent move will bring to Denver a group of persons having superior scientific capabilities in mining research to augment our present mining staff there. We are confident that this enlarged staff will contribute significantly to the solution of the many pressing problems now facing the mining industries of the Rocky Mountain area.

Question. How many personnel will be involved in the move from Denver to Grand Forks, and what plans have been made to take care of them?

Answer. There are 29 full-time permanent employees at the Denver Coal Research Laboratory. All employees will be offered transfer privileges within the Bureau.

Question. How will the relocation of these research facilities affect the development of Rocky Mountain coal reserves?

Answer. The increased efficiencies in the operation of our field establishments resulting from the planned consolidation of activities should have a salutary effect on all of our coal research programs including the development of our Rocky Mountain coal reserves. One of the problem areas involves improved mining methods. We hope that the enlarged mining research group at Denver will soon be in a position to supply concrete answers to many of the pressing problems in this field. In addition, we would leave undisturbed a resources group with two people assigned to coal work at Denver who will be in close contact with the industry and will be able to advise the research segment concerning new and important projects that merit study.

Senator BIBLE. Are there more questions of the Bureau of Mines? Thank you, gentlemen. I appriciate your appearance here this morning. I would like the answers to the questions, which we have given you at the earliest possible moment, Mr. Memmott.

Mr. MEMMOTT. Yes, sir.

TUESDAY, FEBRUARY 23, 1965.

OFFICE OF COAL RESEARCH

STATEMENT OF GEORGE FUMICH, JR., DIRECTOR; ACCOMPANIED BY NEAL P. COCHRAN, CHIEF, DIVISION OF UTILIZATION; G. EDWARD LARSON, CHIEF, DIVISION OF CONTRACTS AND ADMINISTRATION; WAYNE A. McCURDY, CHIEF, DIVISION OF MINING AND PREPARATION; A. HOWARD SMITH, CHIEF, DIVISION OF ECONOMICS AND MARKETING; AND HARVEY B. MACK, ASSISTANT DIRECTOR OF BUDGET

JUSTIFICATIONS AND PREPARED STATEMENT

Senator BIBLE. We now hear from the Office of Coal Research. Please be seated gentleman, and identify yourselves for the record.

Mr. FUMICH. I am George Fumich, Director of the Office of Coal Research; Mr. Edward Larson, Chief, Contracts and Administration Division, Mr. Neal Cochran, Chief, Utilization Division; Mr. Wayne McCurdy, Chief, Mining and Preparation Division; and Mr. Howard Smith, Chief of the Economics and Marketing Division.

Senator BIBLE. Very well.

As I understand, you are requesting $6,945,000. This is an increase of $109,000 over the amount appropriated last year, the justification for which will be made a part of the record.

(The information requested follows:)

HIGHLIGHT STATEMENT

The Office of Coal Research estimate for fiscal year 1966 is $6,945,000. This represents an increase of $109,000 over the current year appropriation of $6,836,000. It is only $53,000 more than the $6,892,000 available in fiscal year 1965 (which includes the fiscal year 1965 appropriation of $6,836,000 and a carry-over balance of $56,000 from fiscal year 1964).

The Office of Coal Research has a staff of 18 persons. This is two less than last year, and five below the ceiling allowed by Congress for fiscal year 1965. The 23 positions requested for fiscal year 1966 is the same level as approved in fiscal year 1965.

Twenty-eight contracts have been executed to date—11 of them in the last year. Ten have been completed, and the final reports have been made public, as required by the Coal Research Act—Public Law 86-599. Several more contracts are scheduled for execution before the end of fiscal year 1965, and others in fiscal year 1966 as outlined.

The Office of Coal Research has continued to utilize the expert scientific and technical services of individual members of its technical panels, as well as its General Technical Advisory Committee, to consult and assist with major technical questions, and the nature and direction of the overall program.

A working relationship with the Bureau of Mines has been furthered, to assist in checking certain aspects of projects under consideration for contract, and to lessen any likelihood for duplication of efforts.

The budget requested for fiscal year 1966 will take care of program needs for additional funds on contracts which are or will be underway in the present fiscal year, as well as funding of new work to be undertaken in fiscal year 1966.

Appropriation, 1964	$5,075,000
Unobligated balance from prior year	1,785,928
Total available, 1964	6,860,928
Appropriation, 1965	6,836,000
Unobligated balance from prior year	56,202
Total available, 1965	6,892,202

SUMMARY OF INCREASES AND DECREASES, 1966

Increased pay costs	12,000
Increase in administrative costs	37,000
Increase in contract research	3,798
Net increase	52,798
Budget estimate	6,945,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Unobligated	Amount available
Administration and contract supervision	$277,956	$348,000			$348,000
Contract research	6,526,770	6,488,000			6,488,000
Unobligated balance	56,202			$56,202	56,202
Total	6,860,928	6,836,000		56,202	6,892,202

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Administration and contract supervision	$277,956	$348,000	$356,000	+$8,000
Contract research	6,526,770	6,044,202	6,589,000	544,798
Unobligated balance	56,202	500,000		−500,000
Total	6,860,928	6,892,202	6,945,000	52,798

JUSTIFICATION

The estimate for fiscal year 1966 is $6,945,000. This represents an increase of $109,000 for the total program above the fiscal year 1965 appropriation of $6,836,000, and is only $53,000 greater than the fiscal year 1965 appropriation ($6,836,000) plus the carryover balance of $56,000 from fiscal year 1964. (Total funds available in fiscal year 1965, $6,892,000.) Eight thousand dollars of the requested increase for fiscal year 1966 is to provide in part for increased administrative expenses as a result of the increased pay costs. All other increases in the administrative and superivsory expenses resulting from the Government-wide pay increase, as well as increased use of the consultants comprising OCR's technical panels, will be met within the level of funding requested. One hundred and one thousand dollars of the increase being requested for fiscal year 1966 is to meet the needs for additional funding on coal research projects which are expected to be under contract by the end of the current fiscal year. The total fiscal year 1966 request of $6,945,000 will enable the funding of a minimum number of new research projects intended to augment and complement research contracts expected to be underway at the end of the present fiscal year.

The present staff of the Office of Coal Research is 18—2 less than last year, and 5 below the ceiling allowed by the Congress last year. Recruiting is underway

to fill some of these position vacancies. The 23 positions requested for fiscal year 1966 represent the same level of staffing as in fiscal year 1965. Staffing at this level, with possible slight increases in the future, is considered an absolute minimum for proper management and performance of the functions of the Office.

The OCR program for contract research seeks to develop new and improved products, processes, or techniques for mining, preparing, and utilizing coal which offer the likelihood of expanded markets for coal in any of its energy forms, or byproducts. The research activities seek to develop such expanded uses on the basis of sound economics as well as technical breakthroughs.

When Congress established the Office of Coal Research in 1960, it recognized the desirability and need for complementing the existing coal research being performed by Government facilities. Contract research as a supplement to "in-house" research achieves the following objectives:

1. Taps the up-to-date knowledge of specialists who, because of their services to numerous industrial clients, have exhaustive scientific knowledge in specialized subjects coupled with practical understanding of the requirements of technical and economic feasibility.
2. Benefits by association with specialists who crossindustry lines and are capable of bringing a "fresh look" to a specific problem.
3. Minimizes the possibility of becoming "inbred" in a particular research area.

The desirability of contract research has been aptly stated by Dr. Horning, the President's Science Advise·, as follows: " 'Out-house' research has flexibility, is short range, and has access to a variety of skills not possessed in 'in-house' laboratories." It can also be pointed out that contract research avoids the necessity of increasing the number of Government employees to perform research of a temporary or short-range nature.

The facts have been accepted by industry as well as Government. National Science Foundation studies for the last 3-year period available for analysis found that total industrial research expenditures increased by 44 percent, while industrial contract research expenditures increased by 75 percent.

The achievements of OCR in 1964, the fourth full year of program operation, are believed to justify the hopes of its congressional and executive branch supporters, as well as industry. These include the development of improved and larger "packaged" boiler-stoker units which produced an increased coal burn of 120,000 tons during the current year and which are expected to produce additional new consumption of one-half million tons cumulative annually.

The Nathan study of coal exports indicated possibilities for doubling the export market by 1970, thus adding up to $900 million of yearly foreign exchange earnings. As a direct result of the report, improved coordination was almost immediately instituted between governmental and private coal and transportation executives. In consequence, the Secretary of the Interior was able to announce, in a June 11, 1964, press release, "The energetic efforts of American coal companies in seeking long-term contracts for coal exports is a commendable effort in our national poverty programs and an increase of nearly 5 million tons annually since September 1963 can be attributed to the stimulus provided by the Office of Coal Research."

During work under its OCR contract, West Virginia University has developed a method for making high-quality brick and construction materials from flyash, the waste product from burning coal in a pulverized form. These bricks surpass all required standards, and present a market for a waste product whose disposal has been a major and costly problem for the coal-burning electric utilities. Exploitation of this waste-product market may represent an additional credit to the cost of coal which in many cases may be the margin necessary to keep coal competitive with atomic energy. Other desirable potential new markets are expected from additional work being performed under the MVU contract.

Six boiler-stoker "packaged" units of the design developed by Pope, Evans & Robbins under an OCR contract have been built and placed in operation since the designs were released to the public in the spring of 1964. Two more are being constructed. The units have proven to be reliable, efficient, and trouble free. Plants known to be under serious consideration, and embodying these OCR designs, will represent an increased coal burn of one-half million tons annually, and it is expected that this will increase cumulatively in future years.

Another signal OCR success is represented by a contract with Virginia Polytechnic Institute to reduce mining cost through use of computer techniques to determine most efficient mining systems. Field tests have indicated that reduction of mining costs of up to 40 cents per ton may be achieved as a result of use

of the VPI computer programs. Available only since July, the programs are being used or studied by coal operators accounting for about 30 percent of annual underground coal production. Major manufacturers of mining equipment have also used the programs to evaluate the effect of equipment design changes.

These illustrations serve to demonstrate that OCR has had considerable success in its contract research efforts and, equally important, in achieving rapid commercial exploitation of its developments. This, it is felt, results from the confidence of the coal industry in the OCR program as well as thorough documentation and the industrial orientation of the project reports released to the public.

Proposals for desirable research are continuing to come into the Office of Coal Research from a broad spectrum of outstanding research organizations throughout the Nation. At present time (year-end 1964) 343 proposals have been received by this Office. Ten new contracts for research were signed in this past year. Four contracts have been signed thus far in the present fiscal year and 10 more contracts have been drafted and are in varying stages of negotiation at the present time. Five contracts were completed in the past year and the final reports have been received.

OCR is making broader use of its Technical Advisory Committee as well as individual technical advisers, on a more frequent basis than ever in a continuing effort to hold down manpower requirements in compliance with the President's program. Reimbursable arrangements have been entered into with the Bureau of Mines to utilize portions of their staff and facilities to assist us on various technical evaluation matters. A high degree of cooperation and coordination of effort exists between this Office and the Bureau of Mines.

Research proposals submitted for consideration are carefully evaluated prior to contract, and thereafter, to avoid any possibility of duplication with work previously performed in Government or industry, or currently being performed in such areas.

Also, OCR seeks to maintain a close and continuing review of its ongoing programs to determine whether support should be continued or withdrawn, and contracts are worded in such a manner as to make this readily possible if necessary. The meetings which OCR has with its General Technical Advisory Committee seek the advice and guidance of the committee toward assisting in the development of research priorities with OCR determining the level of support based on the contractor's proposal and any subsequent negotiated contract.

OCR endeavors to keep constantly in mind the objective of Congress as spelled out in the Coal Research Act—"to encourage and stimulate the production and conservation of coal in the United States through research and development * * *," and to "* * * develop through research, new and more efficient methods of mining, preparing, and utilizing coal."

Itemization of estimate

		Actual, 1964	Estimate, 1965	Estimate, 1965	Increase (+) or decrease (−)
Program and financing:					
Total obligations		$6,804,726	$6,392,202	$7,445,000	+$1,052,798
Unobligated balance brought forward		1,785,928	−56,202	−500,000	−443,798
Unobligated balance carried forward		56,202	500,000		+500,000
Appropriation		5,075,000	6,836,000	6,945,000	+109,000
Object classification:					
11	Personnel compensation	218,788	272,000	277,000	+5,000
12	Personnel benefits	15,743	18,000	18,000	
21	Travel and transportation of persons	17,913	21,000	24,000	+3,000
22	Transportation of things	586	2,000	2,000	
23	Rent, communications, and utilities	3,630	5,000	5,000	
24	Printing and reproduction	6,652	7,000	8,000	+1,000
25.1	Other services	6,508,372	6,044,202	7,089,000	+1,044,798
25.2	Services of other agencies	28,701	13,000	14,000	+1,000
26	Supplies and materials	2,202	5,000	4,000	−1,000
31	Equipment	2,139	5,000	4,000	−1,000
	Total obligation	6,804,726	6,392,202	7,445,000	+1,052,798

Senator BIBLE. We will also include your statement in the record, and you may highlight it in your own way.

(The justification and statement referred to follow:)

Office of Coal Research

Statement of George Fumich, Jr., Director of Coal Research, Department of the Interior

Mr. Chairman, we welcome the opportunity to appear before this committee once again on behalf of the program of the Office of Coal Research. It is almost exactly 4 years since the Office of Coal Research was established, and approximately 3½ years since we signed our first contract. Since that time we have executed a total of 28 contracts (compared to 18 a year ago). Ten of these have been completed. The final reports on the completed contracts have been made available to the public.

The total request for fiscal year 1966 is $6,945,000 which is an increase of only $109,000 over the fiscal year 1965 appropriation of $6,836,000. Of the total request for fiscal year 1966, $356,000 is for administration and supervision of the program, leaving $6,589,000 for the contract research program.

There are 18 contracts underway at the present time, as contrasted with only 12 a year ago. In fiscal year 1964 the Office of Coal Research executed nine new contracts. This is the greatest number executed in any single year to date.

In fiscal year 1965, to date, we have executed four contracts. Ten more have been drafted and are in varying stages of negotiation prior to signature by the parties. We also plan to draft, negotiate, and execute possibly three more based on proposals currently in hand which represent desirable work.

During this past year, 67 proposals for contract research work have been received by OCR. These proposals have come from some of the outstanding research-oriented business organizations and educational institutions throughout the land. Some of these have been rejected for a variety of reasons, and some are still under consideration. It is important to note, however, that the problem—fortunately a very desirable problem—which the Office of Coal Research has had since its inception still prevails. Significantly, we continue to have in hand a greater number of desirable projects for potential future research than we have funds in hand that would enable us to undertake these contracts. We believe this is a favorable situation because it forces the Office of Coal Research to use the utmost care and discretion in screening projects prior to undertaking a research effort. We have no doubt that additional proposals will be received during the remainder of this fiscal year which will warrant contract consideration. This may mean a shifting of priorities, and that some proposals currently planned for contract during the year will fall by the wayside and be supplanted by new, and better ideas for research. Thus, the OCR program, like any good research program seeks to maintain flexibility. We try to avoid becoming so wedded to any program or concept that we cannot change for something, which after careful evaluation and assessment, appears to better serve the needs of the program and the coal industry.

As a result of work performed in the past year, five patent applications have been (or will be) filed by the Government. Under the provisions of the Coal Research Act and the requirements of each OCR contract, patents that may issue as a result of such work are in the public domain and available to the public on a royalty-free basis.

The OCR staff continues to be a very small one. We shall continue to do our best to run the program as carefully and prudently as possible.

The funds requested for administration and supervision of the program in fiscal year 1966 ($356,000) represent only 5.1 percent of the total request. Four years ago (fiscal year 1961) these same funds represented 20 percent of the total appropriation. It is also worthy of mention that the request for a staff of 23 members is less than the staff of 25 authorized by the Congress during fiscal year 1963 and fiscal year 1964.

The General Technical Advisory Committee of OCR (Office of Coal Research) has met three times in the past year, and individual members, as well as groups have met on call by OCR on a more frequent basis. These Committee members, as well as other members of OCR's panels of technical consultants, representing a wide range of technical and scientific know-how, enable the Office to achieve a sound evaluation and assessment of individual projects, as well as the overall program, for a minimum expenditure of funds which could not be achieved in any other way.

It shall be the continuing endeavor of the Office of Coal Research to act favorably and expeditiously upon those projects which offer the greatest potential for genuine benefits to the largest segment of the coal industry and to our Nation at the earliest practicable date.

As indicated in other parts of our OCR presentation, we believe that the achievements of the program justify the original hopes and intent of the congressional and executive branches as well as the coal industry. We have highlighted these accomplishments in our budget justification which you have before you.

If there are questions or clarifications that I or members of my staff can assist on, we shall do our best to provide such information.

REPORT TO THE PRESIDENT

Senator BIBLE. In addition there will be included in the record the Report to the President of February 15, 1965, on the activities of the Office of Coal Research.

(The report referred to follows:)

PRODUCTION AND CONSERVATION OF COAL

Public Law 86-599, passed by the 86th Congress on July 7, 1960, created the Office of Coal Research within the Department of the Interior. The prime intent of the Congress in creating the new Office was to encourage and stimulate the production and conservation of coal in the United States through a contract research and development program directed toward increasing the utilization of coal as rapidly as possible and to the greatest degree feasible in our competitive enterprise system.

The achievements of the Office of Coal Research (OCR) in 1964, the fourth full year of program operation, are believed to justify the original hopes of the coal industry and its congressional and executive branch supporters. Achievements to date include the development of improved coal-burning equipment, the identification of potential expanded markets abroad for American coal, the reduction of coal production costs to enable coal to compete more effectively in competitive markets, and the development of a method (on which a patent application has been filed) for making high-quality bricks and other construction materials from coal flyash.

The initial successes of the OCR program are considered to have put miners to work, created additional employment in the transportation and service industries, and paid dividends to Federal and State Governments in the form of increased tax income and decreased unemployment and welfare expenditures. The benefits should continue to be cumulative.

It is noteworthy that in the recent past coal production areas have required extensive and continued Government assistance programs. While many complex, physical, geographic, and sociological problems remain, the successful results of the Office of Coal Research program should make appreciable contributions to the solution of problems in Appalachia, along with the war on poverty program, and the work of the Area Redevelopment Administration.

MAJOR OCR PROGRAM ACHIEVEMENTS THROUGH 1964

The Office of Coal Research has had marked success in achieving the commercial exploitation of its successful projects almost immediatey after accomplishment. This, it is felt, is a result of the kinds of research performed by contracting organizations, the confidence that the coal industry has in the OCR program, and the careful documentation and industrial orientation of the contract project reports which are released to the public.

EXPORT MARKET STUDY

In September 1963, Robert R. Nathan Associates, Inc., completed a modestly priced ($86,000) contract covering: (*a*) estimates of U.S. coal export potential, (*b*) obstacles to achievement of that potentital, and (*c*) recommendations for action by Government and industry to increase the export of U.S. coal. This study predicted a potential export market of from 73 to 125 million metric tons by 1970, as opposed to the then current export market of about 35 million metric tons in 1963. These projections represented a potential additional $350 million to $900 million of annual foreign exchange earnings. The recommendations of the contractor received immediate and serious consideration by both Government and coal industry agencies and representatives.

As a direct result of the report, improved coordination for coal exports was instituted almost immediately between the Federal Government and private

coal and transportation executives. Based upon a direct request of the President on October 11, 1963, that the Secretary of the Interior "take the lead within the Federal Government in developing, in conjunction with the affected industries, a program to stimulate our coal exports," an interagency committee was established.

The Nathan report, coupled with the prompt and direct action of the Government and the coal industry, was extremely valuable in convincing the coal-importing nations that the United States was interested in long-term coal exports, that it had the reserves and desire to honor long-term commitments, and that every effort would be made to reduce the delivered cost of the export coal.

Thus, the Secretary of the Interior announced, in a press release issued June 11, 1964, "The energetic efforts of American coal companies in seeking long-term contracts for coal exports is a commendable effort in our national poverty programs and that an increase of nearly 5 million tons annually since last September can be attributed to the stimulus provided by the Office of Coal Research."

"The significance of our Nation's increasing coal exports lies not in trade balances, not in tonnages of coal, and not in rail and ship miles, but in the effect such trade has on impoverished areas of Appalachia—the principal source of exported coal."

BRICKS AND OTHER BYPRODUCTS FROM COAL AND COAL WASTES

In a $139,140 contract with West Virginia University for determining potential markets for coal-associated rocks and minerals, a method has been developed for making high-strength bricks and other construction material from fly ash. The Government has filed a patent application for the process.

At present the major portion of fly ash is dumped in a slurry in storage areas. Some coal-burning power plants must pay as much as $2 per ton to have it hauled away. Over 12 million tons of fly ash were produced in 1962, and it is estimated that annual production by 1980 will exceed 28 million tons.

Commercial uses for fly ash today include applications in soil stabilization, as a filler in asphalt paving mixes, as a lightweight aggregate and as an admixture in concrete. These markets presently utilize only about 10 percent of annual production.

By using a mix of fly ash, sand, and sodium silicate in combination with modest forming pressures and firing temperatures, it is possible to produce lightweight, durable, and attractive building material. Tests indicate that the bricks produced can withstand severe environmental conditions and have compressive breaking strengths which range from 5,000 to 9,000 pounds per square inch. The fly ash material weighs from 95 to 100 pounds per cubic foot against 140 to 150 pounds per cubic foot for common clay brick.

The new process produces a building material that is stronger and lighter than the clay brick. This may mean a saving of up to 30 percent in transportation costs. Sample bricks have been tested in accordance with the American Society of Testing & Materials (ASTM). In every instance, the bricks met or surpassed standards established for clay bricks.

Tests of the new type brick are continuing. But, from all indications, the use of fly ash for the manufacture of building brick is economically feasible, technically possible and highly desirable. However, work to date has been on a bench and batch scale only. Additional work is required to develop a continuous production process.

COAL-FIRED PACKAGED BOILERS DRAW WIDE INTEREST

Industry acceptance of the designs of a "packaged" coal-fired steamplant developed under a $164,185 contract with Pope, Evans & Robbins has been highly gratifying. Since January of 1964, when the designs were made available to the public, six of the boiler-stoker units embodying these designs have been privately built and placed in operation. Two more are presently under construction. Plants now in operation will consume approximately 120,000 tons of new coal per year. Despite the radical design features of the new plants, and the extremely high heat release rates employed, the units in operation have proven remarkably reliable, efficient and trouble free.

More than 20 additional plants are under serious consideration. Should these be erected, they will represent an additional consumption of about one-half million tons of coal per year. The broad interest shown in the new designs is evidenced by the nature of the potential users investigating purchase of the plants such as paper mills, chemical plants, dairy product manufacturers, meatpackers,

sugar mills, general manufacturers, railroads, colleges, hospitals, and military installations.

Plants of the OCR design are under consideration or in operation in the following Applachian States: Kentucky, Pennsylvania, Tennessee, West Virginia, and Georgia. At least one of the plants being considered will use anthracite as the fuel. Other States where installations are under consideration include Colorado, Delaware, Illinois, Indiana, Michigan, New York, Utah, and Wisconsin.

MINING COAL WITH COMPUTERS

Another signal success for the OCR contract research program results from a $147,000 contract with Virginia Polytechnic Institute. Four computer programs were developed for evaluating those factors which contribute to the cost of mining in the immediate production area. The programs can be used to evaluate numerous production problems found in the diverse variety of continuous and conventional mining systems which prevail throughout the coal industry. The programs vary in scope and have been tested and proven applicable in a broad range of mining systems. Field work has indicated that application of the program to specific mining problems may reduce coal production costs by up to 40 cents per ton.

The computer programs are available to the coal industry, at cost, and the technical staff and computer facilities are available at VPI to mining companies who wish to employ these programs in their operations but do not have computer facilities. Thus, coal operators, large and small alike, can apply these newly developed techniques in reducing the cost of mining.

Since the VPI report was released to the public in October 1964 OCR has learned that the computer programs are in actual use at three major companies whose underground output was 20.4 million tons in 1963, or 6.9 percent of total underground bituminous and lignite production for that year. Five producers, accounting for 36.1 million tons annually of underground production, are planning to utilize the programs.

Another five companies, producing 22.6 million tons per year, are studying the application of the programs to their mining problems. Taken together, the operators interested to date account for 30 percent of annual underground production.

In addition, the computer programs are being utilized by a major anthracite producer. Their application to equipment needs and designs is being studied by three of the major manufacturers of underground mining machinery.

PATENT APPLICATIONS PENDING

As a result of work performed on OCR projects in the past year, contracting organizations have reported (as required by the terms of their contracts) any inventions first conceived or reduced to practice. Based on these reports the Department of the Interior has determined to file (or have filed on its behalf) patent applications on five of these inventions, with title in the U.S. Government, and to be made available to the public. The five were developed by Consolidation Coal Co.; Pope, Evans & Robbins; Westinghouse Electric Co. (two); and West Virginia University.

The Contract Program

While the various projects may be placed in separate categories as a matter of convenience, such methods of classification do not tell the whole story. In some degree or other each project overlaps and is complementary to many of the other projects. Projects in the field of coal mining and preparation, and in the areas of marketing and transportation not only support each other but those specifically directed toward new uses for coal.

Basically, the essential goal is to develop and bring to reality improved overall energy systems based on coal, together with whatever supplementary byproduct systems for the production of chemicals, water, and other useful products appear logical and viable.

Many of the OCR projects are planned to develop competitive methods of producing liquid and gaseous fuels in large commercially constructed and owned mine-mouth installations.

OCR hopes to undertake the development of new and improved methods of converting coal energy into electrical engery. Central station electric powerplants are presently the largest consumers of coal and most predictions indicate

this situation will continue, with coal consumption rising as the population increases, for at least the next half century.

There appears to be a need for defensive action to support the development of improved coal-based systems if coal is to compete for its predicted share of this major market.

WESTERN COAL MARKETS

Promising and substantial markets for coal are developing in the Western States. Recent announcements disclose plans for utilities in the West to use coal and lignite either at mine-mouth sites or closer to consumption.

The Federal Power Commission's national power survey suggests that coal in the West has real opportunity in certain areas to generate substantial amounts of the additional demand, including power transmitted by new interties to supply distant consumers. The coal industry believes that coal can be delivered to dual-purpose plants in the Southwest to produce electricity and desalinated water at a fuel cost competitive with nuclear or other fossil fuels.

After an internal review of the fast-moving energy situation in the West, a contract was awarded to the economic consulting firm of Robert R. Nathan Associates to make a study of opportunities for marketing coals and lignite produced in the States west of the Mississippi River, including Alaska, to the year 1980 by major producing area, by major market area, and end uses. Its report is expected to recommend a group of actions that may increase the share of coal and lignite in the rising western energy and nonenergy markets by the year 1970, as well as actions that may have impact after 1970.

In order to fully develop the study, the Nathan firm will do the following:

(1) Analyze the available information on the sources of supply of western coals and lignite, including size and location of reserves, effects of changes in the level of production on productivity and costs, and the relation of such sources of supply to the relevant energy market areas, to alternate transportation methods, and to costs of competitive sources of energy.

(2) Analyze the delivered cost that western coal and lignite and products of coal and lignite will need to achieve in order to compete in the relevant energy markets.

(3) Analyze the demand for fuels and energy in the relevant energy markets for end uses which may be served (including power), the consumption trends, and changes in population and industry location.

(4) Analyze the significant elements affecting the competitive position of western coal and lignite, including comparative delivered prices in related energy markets, comparative costs of production and transportation, efficiency of production and mechanization, investment per employee and availability of capital, effect of Government policies, and technological and other factors affecting the choice of fuels.

(5) Make projections for 1980 as a benchmark date, taking account of changing technologies in production and utilization of coal and lignite, and changing technologies in transportation.

(6) Analyze possibilities whereby future markets for western coal and lignite may be increased through opportunities disclosed by the investigation.

COAL FOR SEWAGE TREATMENT

Among the new and novel approaches being explored by OCR to find new uses for coal is a $164,000 contract with Rand Development Corp. This work is directed toward finding methods by which coal can be used as a low-cost additive in plants treating sewage or industrial wastes. In addition to developing a new market for coal, it is hoped that this work will be useful in conserving another valuable natural resource—water.

Bench-scale work to date has developed data indicating potential technical and economic feasibility, but a practical and continuous process has yet to be demonstrated. OCR hopes that this can be accomplished during the coming year.

CONVERSION OF COAL TO LIQUIDS

The present consumption of liquid petroleum products as fuel—about 50 percent gasoline—is about 11 million barrels per day in the United States. It has been estimated that this will increase to about 17 million barrels by 1980. Gasoline and other liquid fuels can be made from coal. This has been amply demonstrated; the reason that this is not done commercially in the United States is one of process cost.

OCR has a comprehensive development program underway which it is hoped may result in commercial processes which can successfully compete in the market. If, by 1980, 10 percent of the U.S. consumption of gasoline were produced from coal it would result in a new coal consumption of 175 million tons per year. At the same time, the consumption of petroleum-derived gasoline would be 40 percent greater than it is now.

OCR has several conversion projects underway which, according to preliminary analysis, are capable of meeting the required objectives of cost and practicality. Most of them, in addition to producing a refinery feed stock will also produce a solid residue in the form of char or coke. The ratio of these products varies with each process. The solid residue, depending on its quantity, may be used as a boiler fuel in the plant, as raw material in hydrogen production, or as an export fuel.

PROJECT COED

The first liquid-fuel project to be supported by OCR was Project COED (char-oil-energy-device) of the FMC Corp.—May 16, 1962, $1,121,000. It is scheduled for completion late in 1965. If the results of the pending work meet expectations the next step necessary to prove a commercial design would be to design, construct, and operate a pilot plant. This latter step would require an extension beyond the present contract.

The objective is to break coal down to liquid and solid fractions. The liquid may be used as a transport fluid to move the solid fraction, or char, from the mine-mouth plant to market by pipeline. The liquid would be separated at destination and used as a refinery feed stock to produce gasoline and other liquid fuels. The separated char would be used as a boiler fuel. Thus this project has the combined objective of producing liquid fuel from coal and of reducing the transportation cost of coal, in the form of the solid char, from mine to distant market.

After a series of bench-scale experiments, culminating in the simulating of a multiple fluidized-bed pyrolisis process (using a single fluidized-bed unit), FMC has devised a process which offers promise of achieving the original objectives.

Estimates were made of the capital and operating costs for a number of assumed conditions. Total plant investment for the various assumptions would range between $17 and $25 million and the return on investment would be attractive.

After careful evaluation of the data and estimates, the contractor, early in 1964, was authorized to proceed with the design, construction, and operation, of a four-stage fluidized-bed continuous process development unit with a design capacity of 100-pound-per-hour coal feed.

Operation of this unit, together with work planned on catalytic vis-breaking of the oil product and work on char handling, will simulate all operations of the projected full-scale commercial system. During most of 1964 the work of the contractor was largely concentrated on the design and construction of the process development unit. Operations and evaluation of results will be carried out through most of 1965. Definitive answers as to overall feasibility are expected by the end of the year.

PROJECT GASOLINE

The largest OCR contract now in effect is Project Gasoline (Consolidation Coal Co., August 30, 1963, $9,993,000). The original development of this process was done privately by the Consolidation Coal Co. and others. However, under the terms of the OCR contract all "background patents" (these originating from the privately financed development work) will become available to the general public at reasonable royalty rates, while all additional developments and patents resulting from work under the contract will be in the public domain.

A detailed engineering study of capital and engineering costs of a full-scale commercial plant was made under a contract with Ralph M. Parsons Co. before the contract with Consolidation was executed. The Parson's study indicated a gasoline cost less than one-half of any other previous coal-to-gasoline process in the United States. Recent developments indicate further potential reductions in cost.

During the course of this work a new catalyst has been found with indications that its use may reduce the original projected price of gasoline appreciably. In addition several lower cost hydrogen producing processes under development by OCR carry the promise, if successful, of an additional reduction in the gasoline price.

Action has been taken to proceed with the design of a pilot plant with a designed capacity of 20 tons of coal feed a day.

The Nofsinger Co. was engaged by subcontract to prepare the detailed design of the pilot plant. Meanwhile, the Ralph M. Parsons Co. under the terms of their original contract is assisting OCR in monitoring the work and will continue to do so throughout the course of the project.

Construction of the pilot plant should start during 1965. The plant is expected to start operation using Pittsburgh seam coal, and later coals from other geographic locations will be tested to adapt the process for use in all possible coal mining areas.

In this process, coal is dissolved in a coal-derived solvent, the ash is filtered out, the solvent recovered and recycled, and the remaining material is hydrogenated to provide a refinery feed stock which is converted by conventional processes to gasoline and other products. Various byproducts also are expected to be produced and sold. Successful completion of this project will result in detailed designs of a commercial-sized plant for the process, which will be made available to the public.

PROJECT SEACOKE

During the summer of 1964, OCR executed a contract for the development of a process to adapt the well-known oil refinery fluidized-coking process to coal (Atlantic Refining Co., August 10, 1964, $918,000). The successful development and application of this process could substantially increase coal usage in metropolitan areas where large oil refineries are located in reasonable proximity to large central station powerplants. This situation exists near Philadelphia, New York, and Chicago.

The process consists of feeding a residual fuel oil and coal mixture into a standard fluidized coking unit. The volatiles from the mixture are "topped" off, removed and hydrogenated to produce a refinery feed stock. The solid coke or char would be removed and fed by pipeline or conveyor to an electric utility plant to be used as boiler fuel. Essentially the concept is based on diverting the regular coal feed to a powerplant through an adjacent oil refinery on its way to the boilers.

The coal is largely converted into liquid fuel, this process, when the other potential locations are considered, has the potential of converting many million tons of coal a year into gasoline and other liquid fuels with a relatively small new capital investment and practically no new distribution and marketing facilities.

GASIFICATION PROGRAM

The Office of Coal Research is supporting a substantial program to develop processes for manufacturing pipeline-quality gas from coal at a price competitive with the natural product. Success in this effort should not only open a substantial new market for coal but should benefit the economy as a whole through better use and conservation of natural resources.

The first OCR gasification project (Bituminous Coal Research, Inc., December 20, 1963, $975,000) started with an overall survey and engineering evaluation of all known modern coal-gasification processes including those in Europe. The work includes the study of processes for producing pipeline quality gas as well as lower B.t.u. industrial-heating gases and transport gas which might be used to move coal pneumatically in a pipeline.

Following the evaluation study, which is nearing completion, the contractor will proceed with the bench-scale development of processes and equipment selected or evolved as a result of the preliminary work study. Several processes are expected to be chosen for this development program. Among them are: direct production of methane by catalytic reactions of coal; and multiple-stage gasification. In addition the contractor will perform work on the feeding of pulverized coal and gas mixtures by pipe to boiler furnaces.

The "molten salt process" (M. W. Kellogg Co., June 11, 1964, $1,708,000) is a method of producing a nitrogen-free gas without the use of oxygen. Coal is gasified by mixing it and steam with a molten salt which in turn is heated by the combustion of coal. Temperatures and pressures can be varied to produce a high methane gas for conversion to pipeline gas, or a high hydrogen gas a as hydrogen source for other OCR contract processes.

Laboratory investigations are underway to determine the melting point, viscosity, and solubility data of ash-salt mixtures, reaction data of coal-salt mixtures and corrosion characteristics of various construction materials for practical equipment. Process flowsheets and preliminary cost estimates of full-scale commercial production plants have been prepared.

While only a small amount of experimental data are available, results are encouraging, and gas production cost estimates are within the objective.

One gasification project is designed specifically to develop a process using lignite (Consolidation Coal Co., June 11, 1964, $384,000). Work under the present contract is limited to bench-scale experimental work performed in the contractor's existing laboratory. This is planned to lead to the design of a pilot plant.

The method being investigated is the "CO_2 acceptor process." This method is expected to permit the production of a nitrogen-free synthesis gas for conversion to pipeline gas without the use of oxygen. Dolomite rock is heated, or "burned" by combustion with residual char. The hot burned dolomite serves as a heat carrier to the gasification stages where it absorbs CO_2 gas in reaction which, in itself, provides additional heat for gasification. It is then recirculated to the "burning" step.

Initial laboratory work is proceeding on the study of lignite reactivity, the reactions of lignite-dolomite mixtures, and the fluidizing and handling characteristics of mixtures of particles of lignite, char, ash, and dolomite. Simultaneously the contractor, at no additional expense to the Government, is preparing a full-scale commercial plant flowsheet and cost estimate together with estimates of potential pipeline gas markets.

Work has not proceeded to the point where definitive results are available. Lignite has proved to be much more reactive than originally expected thus increasing the likelihood of technical feasibility and making possible a slight reduction in total cost of gas.

The "hydrogasification" process (Institute of Gas Technology, July 24, 1964, $1,711,860) is being supported on an equal monetary basis by the American Gas Association and the Office of Coal Research. This process has been under development at IGT, supported by AGA, for a number of years. OCR believes its support will accelerate the development program and result in commercial application 5 to 10 years earlier than would otherwise be possible.

The process involves direct hydrogenation of coal, hydrogen being produced from the residual char with steam and oxygen. The hydrogasification process has one of the highest possible theoretical thermal efficiencies, and in a large-scale plant carries the promise of producing competitive pipeline gas.

Work is underway to enlarge and improve the existing equipment and to increase the scope of the continuing program. The contractor was well equipped with substantial apparatus before OCR support became available.

Under the present contract terms, work will be completed with the preparation of the preliminary design of a substantial pilot plant. At that time it is hoped that the outlook will be so favorable that joint support can be obtained for a pilot-plant program costing several million dollars.

Several of the coal gasification process cost estimates indicate that it may be possible to supply hydrogen from coal at a cost considerably below present costs. Since the liquids-from-coal programs being supported by OCR require hydrogen, the manufacture of cheap hydrogen from coal would result in further cost reduction in these processes.

OTHER PROJECTS

Project Low-Ash Coal (Spencer Chemical Co., division of Gulf Oil Corp., August 22, 1962, $1,240,000) was carried through the process development unit stage in 1964. Several tons of the low-ash product were produced and burned successfully in both liquid and solid form in the laboratories of the Babcock & Wilcox Co. and combustion engineering.

Pending evaluation of survey data concerning the potential market for the product, the process development unit has been shut down. A decision as to whether this project should proceed is to be forthcoming.

Project Western Coal (University of Utah, August 24, 1962, $275,397) is continuing as a laboratory investigation of characteristics of western coals. The State of Utah's cosponsored portion of the total funding is $105, 397. This project is intended to furnish data concerning western coal characteristics which would permit the adaption of other OCR processes to the West.

During 1964, a high-pressure hydrogenation system was ordered and has been installed. Other laboratory work has continued, and a substantial quantity of data has been accumulated.

Project Fuel Cell (Westinghouse Electric Corp., December 1962, $1 million) is the first OCR energy conversion project. Technical feasibility has been demonstrated. While the active fuel in the fuel cell proper is a gas, the energy conversion arrangement is wholly integrated with an interchange of heat between the fuel cell and the coal. This makes the system a true coal to direct-current electricity

energy converter. The maximum theoretical efficiency of the system is 100 percent.

The presently operating system of 100-watt size has proved to be dependable and long lived.

In a larger commercially practical system other materials of construction for the fuel electrode and the oxygen electrode will be required than those presently used. For this reason, the work is now directed toward finding better and cheaper materials for the solid-state cells.

Project Bootstrap (General Electric Co., Mar. 26, 1962, $750,000) was completed in July 1964. This contract sought to develop a process for hydrogenating coal using hydrogen activated by high-voltage electrical corona. The project was concluded without indication of the basis for a successful commercial process. The product yields were not sufficiently high in the most valuable products to justify further development effort. The problems were those of equipment and technique, however, rather than that of the fundamental concept of elcetro-processing.

Program Administration

The prime purpose of the OCR program is to expand the use of coal and in that way to help coal increase its contribution to the national welfare. Projects are sought that will make some measurable contribution to the welfare of the country—projects that may create new industries, create new payrolls, bring coal-produced energy into areas that now await it, and make it cheaper, and more convenient.

OCR expects to see returns commensurate with the number of research hours and research dollars spent. Hopefully these can be measured in terms of coal tonnage, but not necessarily.

The need for early results puts an emphasis on applied research and development. Indeed, the legislation defines the term "research" to include "practical applition." The successful termination or conclusion of some piece of bench-scale research, if allowed to end there, does not cause more coal to be used. It is necessary to show that the research results can have practical application.

"Short-term benefits" to the coal industry is an expression that has been frequently used to describe the objectives of the OCR program. But such an expression must be realistically interpreted. As the former Science Adviser to the President, Dr. Jerome Wiesner, stated in testimony before the House Subcommittee on Mines and Mining, March 26, 1963, "You cannot expect that research and development activities are going to turn an industry around in 2 years or 5 years. I think you have to anticipate that these activities are going to be spread out over a number of years and the impact of what you do today and tomorrow and next year may not be felt for several years."

Among the important elements in considering research proposals for contract are coal tonnage potential, economics of process or product, cost of project, suitability of contractor's personnel and facilities, time schedule for completion of contract work, and the relationship of the work to be undertaken to other elements of the Office of Coal Research's total program.

Proposals for research projects are continuously reviewed to avoid duplication. Contractors are required to document past and current work in order to qualify for proposed projects.

After evaluation by the OCR staff, potential projects are checked with the Department's Bureau of Mines to insure that the work proposed does not duplicate or overlap work done by that agency. Projects are then reviewed by competent industry consultants who are members of the Office of Coal Research's various technical panels.

Proposed projects are ultimately reviewed by the OCR General Technical Advisory Committee comprised of outstanding leaders from both the coal industry and other industries with interests in coal production and utilization. Individual members or "task forces" from this committee having specific knowledge and technical competence in various scientific and professional disciplines may be called upon to review a proposed project.

The Office of Coal Research is under the direct line supervision of the Assistant Secretary—Mineral Resources, who has maintained a continuing and active interest in the development of the program. Potential contracts are reviewed by members of his staff. The Director of Coal Research consults frequently with the Assistant Secretary relative to the program and operations of the Office.

Through this careful and painstaking procedure, OCR selects only those projects offering the greatest opportunity of achieving early and appreciable success The likelihood of any duplication is further lessened, of course, by the fact that OCR has so many more proposals for desirable research than it has funds with

which to undertake such research, therefore helping to assure utmost care in screening desirable projects. A total of 344 proposals has been received. Twenty-eight contracts have been awarded since the inception of the program. At the end of the calendar year 10 contracts have been completed and 18 are currently underway. Copies of the final reports are publicly available in various libraries, and some are available for purchase by the public from the Superintendent of Documents, Office of Technical Services.

Contracts which are or have been underway in this past year, as contrasted with a year ago (Dec. 31, 1963) increased from 16 to 23—an increase of 44 percent. The dollar volume of contracts in force rose from $16,680,722 to $21,379,200—an increase of $4,698,478 or 28.2 percent. The dollar volume of contracts was $1,257,600 per active employee on the rolls at year-end compared with $834,036 a year earlier. This is an increase of $423,564 or 51 percent.

The OCR staff during this past year also has processed 8 contract amendments, 6 subcontracts, evaluated 53 of 65 new research proposals received, and at the present time the OCR staff has drafted (and has in various stages of negotiation) 10 additional contracts and 2 amendments.

Precontract and postcontract audits and cost studies have been conducted with resultant benefits to the Government of more than $100,000 from audits alone.

The permanent employees of the Office of Coal Research on December 31, 1964, were 10 percent fewer than the comparable period 1 year earlier (18 against 20).

Although the administration and supervision funds available in the first year of the program (fiscal year 1961) amounted to 20 percent of the total appropriation, such funds in fiscal year 1965 amount to only 5.3 percent of the program. The reduction in administrative funds in proportion to total funds results from concentrated manpower utilization efforts and a pooling of knowledge, time, and effort within OCR's small staff ceiling of 21 persons. Continuing efforts are being made to improve this ratio further so as to increase the availability of funds for contract research.

SUMMARY

The achievements and plans of OCR in 1964, the fourth full year of program operation, are believed to justify the original hopes of its supporters. These initial successes have put miners to work, created additional employment in the transportation and service industries, and paid dividends to Federal and State governments in the form of increased tax income and decreased unemployment and welfare expenditures. The benefits will continue to be accumulative during the coming years.

THE 1966 BUDGET COMPARED TO 1965

Mr. FUMICH. Sir, as you state, we are asking $109,000 more than we requested last year. For purposes of comparison, the fiscal 1965 budget is $1,761,000 over that of fiscal 1964. The fiscal 1966 budget is practically leveled off with our present budget.

Last year at this time we had 12 projects under contract. This year we have 18, a 50-percent increase. Last year we had 18 contracts underway at sometime during the year. This year we have 31 that are, or have been underway during the year. We have also received 71 new proposals for contract research this past year for a total of 348.

As of the date of my appearance before this committee last year we had 20 people employed in OCR. This past year we had 18 until about a month ago. Now we have 19. Our workload has increased considerably and our manpower has decreased. I believe we are doing a much better job administratively. Everything has increased except manpower.

On the other hand, I also think we have achieved greater momentum in our contract program. Last year—fiscal 1964—we signed nine contracts compared to six that were signed in fiscal year 1963.

We have also signed seven to date in fiscal year 1965 and we hope to sign approximately that many more before the end of the fiscal year, year, so you can see that we have gained momentum.

We think the program is becoming more significant with each passing year of its existence. Without going into any more figures

and statistics I will leave myself open for questions. I know that time is of the essence.

AMOUNT REQUIRED FOR PAY INCREASES

Senator BIBLE. Among other things, I see this increase, and it is my understanding that $8,000 of it is for pay increases. There is also an increase of $101,000 listed to meet the needs for additional funds on coal research projects which are expected to be under contract during the coming fiscal year.

NEW RESEARCH CONTRACTS TO BE SIGNED

Would you please indicate for the committee and for the record what these contracts are?

Mr. FUMICH. We do not have in mind a specific contract to obligate that particular amount. I can give a brief résumé of our entire program which would also involve the new contracts which we are expecting to sign.

On the other hand, if you wish, I could just answer questions on specific contracts.

NEED FOR ADDITIONAL $101,000 IN 1966

Senator BIBLE. Why do you need the $101,000? This is an additional amount.

Mr. FUMICH. It is an additional amount because we have programs that are expanding. We also have certain new contracts for which we are asking funding and, of course, these will need more funding next year.

There is no one contract itself that is scheduled to receive the $101,000 increase. I can give you a brief recital on each one, especially the new ones that we expect to sign.

Senator BIBLE. Why don't you furnish the information for the record? The members interested in this coal research field can examine the record. I know of Senator Byrd's great interest in this field.

(The information referred to follows:)

CONTRACT PROGRAM—PRESENT AND PROPOSED

Office of Coal Research

Contractor	Estimated total cost	Funded prior to fiscal year 1965	Estimated fiscal year 1965 allocation	Estimated fiscal year 1966 allocation	Estimated balance to complete	Brief description of project
Pope, Evans & Robbins	$164,185	$164,185				To design and develop a new, completely integrated, coal-fired industrial heating plant of intermediate-size range requiring minimum attendance and space, and with initial and operating costs considerably more favorable than existing coal-fired equipment.
FMC Corp	1,121,000	1,121,000				To determine the possibility of deriving from coal a synthetic crude oil of a kind that, mixed with the residue (char), can be transported by pipeline.
The Ralph M. Parsons Co	444,000	200,000			$244,000	To analyze the engineering and economic feasibility of a process owned by the Consolidation Coal Co., Pittsburgh, Pa., to convert coal into gasoline and to act as design consultants to OCR during pilot plant construction, operation, and evaluation.
West Virginia University	139,140	139,140				To determine and evaluate the economics of processing marginal byproduct materials closely associated with mineable coal.
Spencer Chemical Division	1,240,000	1,240,000				To produce low-ash and low-sulfur coal through solvation techniques.
University of Utah	170,000	150,000	$20,000			Bench-scale testing of the response of powdered coal in an electric arc, by flash photolysis, and in other reactions, toward recommending a final process for converting western coals into gaseous and liquid fuels. Cosponsored. Total cost: Government, $170,000; State of Utah, $105,397; total, $275,397.
Westinghouse Electric Corp	1,000,000	700,000	300,000			To develop a fuel cell burning pulverized coal, a gas derived from coal, or a combination. End result will be construction and operation of a 100-kilowatt prototype cell system operated in conjunction with a connected direct current load to provide engineering data required for the design of a commercial plant.
Consolidation Coal Co. (gasoline)	9,993,000	3,300,000	1,500,000	$1,500,000	3,693,000	Under this contract, a pilot plant will be designed to convert approximately 24 tons of coal per day into gasoline. The plant will be operated to determine the process and equipment alternatives which could enable a full-scale plant to be designed and built as a commercial venture by a private enterprise. The contract involves bench-scale research, design, and construction of pilot plant facilities and operation and evaluation of the pilot plant.
Rand Development Corp	164,000	164,000				This contract will explore methods for utilizing coal in the treatment of sewage and industrial wastes. An attempt will be made to develop integrated processes utilizing fine-size coal. The use of coal as an adsorbent, settling agent, flocculent, and filter aid will be explored for the purpose of facilitating removal of sewage and industrial wastes from water and subsequent use of the heating values of the coal in treatment and removal of solids for incineration heat or steam generation.

Bituminous Coal Research, Inc. (gasification).	975,000	250,000	----------	250,000	475,000	The overall objective of the contract is to develop equipment to produce gases suitable for process heat, as a source of hydrogen, or to mix with pulverized coal for pipeline transportation. It is anticipated that equipment can be developed ranging in size from small-scale use to very large-scale applications, opening new markets to small, medium, and large coal producers.
Virginia Polytechnic Institute	286,500	186,500	----------	100,000	----------	To develop the most favorable integrated power, drainage, ventilation, and haulage systems that are applicable to a given mining situation. Also similar scientific analyses of long-wall mining production systems. The contractor will conduct mining engineering, industrial engineering, and operations research to develop formulas, programs, and mathematical models which can be quickly solved by computer techniques, including development and field proving of the formulas and programs.
Consolidation Coa Co. (lignite gasification).	384,300	384,300	----------	500,000	----------	For the development of a "CO_2 acceptor process" for the production of pipeline quality gas from western lignite coals, based on a method of mixing hot, calcined dolomite (a form of limestone) with lignite to gasify the lignite. Carbon dioxide gas formed in the process combines with the calcinate to form a carbonate and is removed in solid form from the fuel gas. The residual char is burned in another vessel to recalcine the carbonate which is then recycled back to the gasifier. A nitrogen-free gas is produced without the use of oxygen. It is estimated that if this project goes on to the pilot plant stage the construction and operation will require an estimated $6,000,000.
M. W. Kellogg Co	1,708,860	200,000	200,000	500,000	808,860	For further development of a new coal-gasification process originated by Kellogg and based on a method of injecting steam and coal into a molten salt under pressure to produce a synthesis gas. By controlling the conditions of the reaction, gas can be "tailor made" for further processing into useful products. Major objectives are to produce pipeline gas (essentially methane) and hydrogen at competitive prices. A cost-saving feature of the process is that oxygen is not required.
Institute of Gas Technology	855,930	----------	600,000	255,930	----------	Funds in an equal amount supplied by OCR and the contractor. The objective is to develop a competitive process of manufacturing a high-B.t.u. gas from coal which will supplement the Nation's natural gas reserves. The process includes charring and hydrogenation of coal plus methanation of the resulting gas. The period of the contract is 3 years. Experimental work will be performed at ITG's laboratories in Chicago. Cosponsored. Total cost: Government, $855,930; IGT, $855,930; total, $1,711,860. If project proceeds to larger stage, additional cosponsored cost is estimated at $5,500,000.
Atlantic Refining Co	918,000	----------	500,000	300,000	118,000	A new process based on a method of feeding bituminous coal, together with crude oil residuum, into a fluid coking operation is now underway. The coal is "topped" and volatiles are removed for further processing into gasoline and other liquid fuels. If successful, there could be a substantial increase in coal usage in the many locations where oil refinery and coal-fired electric-generating plants are located in relatively close proximity to one another.

Office of Coal Research—Continued

Contractor	Estimated total cost	Funded prior to fiscal year 1965	Estimated fiscal year 1965 allocation	Estimated fiscal year 1966 allocation	Estimated balance to complete	Brief description of project
Robert R. Nathan Associates	169,028		169,028			To make a study appraising intensively the potential markets for U.S. coal, including lignite, produced in the States west of the Mississippi River, including Alaska, and the constructive steps that may be taken toward achieving that potential. Analyze and project the potential market for western coals, including lignite, to the year 1980 by major producing area, by major market area, and end uses. A report for the Far Western States in 13 months, and a report for the Midcontinent States and Alaska 9 months thereafter will be rendered.
Battelle Memorial Institute	59,000		59,000			To survey the current and future cost and market potential for low-B.t.u. industrial fuel gas and for hydrogen. The contractor's report will include information regarding the number, size, and fuel requirements of industrial plants potentially able to use a low-B.t.u. gas. The hydrogen cost and market study will cover the several available major processes based on coal, gas, and liquids.
Westinghouse Electric Corp. (MHD power).	113,000		113,000			This is a preliminary study of the feasibility of magnetohydrodynamic (MHD) power generation using coal as fuel. One factor to be investigated is the possibility of fixing nitrogen, for fertilizer and other uses in the high temperature MHD duct. The program will seek to define problems of high temperature coal combustion, and other MHD requirements, and outline a rational program for their solution. It will culminate in the conceptual design of a 20-megawatt pilot plant which would be the first step in a more extensive development program to bring coal-fired MHD power to the point of commercial application.
Hydrocarbon Research, Inc.	2,063,750		500,000	450,000	1,113,750	The contractor will seek to develop a process for converting various coals to liquid products ranging from heavy fuel oils to high-octane gasoline, with minimum production of byproducts. The work will investigate the application to coal-processing technology of improved methods for hydrogenation, gasification, and the manufacture of oxygen. The work will be performed using existing pilot plant equipment of about 30 barrels per day capacity in the contractor's laboratory at Trenton, N.J. The program will conclude with the process design for a full-scale commercial plant which would be constructed with private funds.
Total	21,968,693	8,199,125	3,961,028	4,155,930	6,502,610	

W. B. Saunders & Co	92,000		92,000			Contract is to determine present and alternative services in the transportation and distribution techniques for the export of bituminous and anthracite coal. Recommend action to be taken by Government, coal producers, carriers, and receivers that will reduce delivered cost of coals in export markets. Also, identify those areas in transportation and distribution systems affecting export coal which would benefit most from improved practices and technology.
Bituminous Coal Research, Inc. (GAM)						To desive continuous transportation systems from mine to factory, and to design and operate boilers to burn superfine coal in continuous sequence with transportation systems.
Franklin Institute						Contractor shall direct his efforts toward development, through the process, demonstration, unit stage, of the Szikla-Rozinek combustion system as a coal gasifier, and an evaluation of the product gas or gases for use as synthesis gas or fuel gas.
Avco						A promising electrocoal processing scheme to feed coal into an electric arc as a consumable electrode. Theoretical studies indicate the possibility of producing useful and more valuable liquids, gases, and chemicals by this method. The work is planned with an initial feasibility demonstration before proceeding to detailed development of process and equipment.
Bituminous Coal Research, Inc., (ebbulating bed reactor).						This project has potential application in reduction of air pollution because use of a fluid bed for gasification and/or combustion causes the ash and other impurities to remain behind.
Combustion Engineering, Inc						Corrosion of external surfaces of high temperature electric utility boilers fired with coal or residual oil has become an expensive problem. It is believed that there may be materials in certain clays and shales physically associated with the coal seams that act as natural corrosion inhibitors. These are presently removed by the coal-cleaning operation. This project will investigate the causes of corrosion and determine methods of codifying the coal and to prevent it.
Iowa State University						This project will investigate the processing of coal in fluidized beds through which an electric current is passed. A laboratory-scale and bench-scale investigation is planned. As with other electroprocessing methods there is a potential for the generation of a wide spectrum of useful and more valuable products from coal.
Melpar, Inc						A laboratory investigation of a process for producing acetylene from anthracite via sodium carbide using fluidized beds. It has the promise of producing low-cost acetylene which would be the basis for the establishment of a chemical-processing industry in the anthracite region.
Pope, Evans & Robbins	531,000		100,000	200,000	231,000	As a result of experience gained in the performance of a previous contract with OCR, further research on a coal-fired, packaged boiler using radically improved firing methods may be developed. The contractor will seek to design a unit with a capacity of 100,000 pounds of steam per hour or better. It is expected that such coal-fired boilers would be competitive with oil- and gas-fired units in many areas of the country in cost and automatic operation, and would permit coal to compete with greater effectiveness in the expanding industrial energy market.

Office of Coal Research—Continued

Contractor	Estimated total cost	Funded prior to fiscal year 1965	Estimated fiscal year 1965 allocation	Estimated fiscal year 1966 allocation	Estimated balance to complete	Brief description of project
Stanford Research Institute						This work is to experimentally develop methods of processing coal by electric induction heating in a fluidized bed. It has the possibility of producing useful and more valuable liquids, gases, and chemicals, and is part of OCR's broad investigation of electroprocessing of coal. When coupled with an extremely cheap source of coal-generated power, such as MHD generation, one or all of the various electroprocessing methods has the potential of being the basis for new processing industries located in the coal-producing areas.
Union Carbide Corp. (HPH)						A unique process employing controlled agglomeration in a fluid bed to produce useful gases from coal at low cost. This is to develop a process to manufacture high-pressure hydrogen needed by other projects we have under development. Use of Carbide's process will make the production of liquids and gases from coal independent of natural gas as a source of hydrogen and may potentially affect the price of the product by as much as 10 percent.
Coal blending (EGFA)						This project is the logical technical followup of a successful earlier export study conducted for OCR. The project would develop technical data to permit the optimum blending of U.S. coals with European coals. This in turn would lead to increased European use of American coals, and aid in the balance-of-payments program.
Speer Carbon Co						This project is directed toward production of carbon and graphite from coal. Coal extracts or coal tar pitch would be used and evaluated on a process development scale. Use of coal in producing carbon needed for electric furnaces, aluminum potlines, and similar uses will be explored.
Transportation projects						Transportation cost is often a significant percentage of coal's delivered price. Any reduction in rates made possible through improved practices or equipment will enhance coal's competitive position versus the other fossil fuels or nuclear energy. Current thinking is directed toward a survey of equipment and terminal economics.
Moisture control and soil treatment						Coal's color causes it to absorb the heat of the sun. Spreading thin layers of fine-size coal on snow or ice speeds the melting process. It may be that coal can be used in many instances where salt or calcium chloride cannot be applied. For example, it could permit the wheat farmers of the Northwest to get their crops in earlier and avoid the blight. It could be used to open the Great Lakes to traffic much earlier in the spring. The proposed work seeks to determine the applications that are feasible, develop the methods of properly applying the coal, and demonstrate the effectiveness of this simple use for coal.

Consolidated Controls Corp						A thermionic device, exposed to the radiant heat of a pulverized coal flame in a boiler furnace will convert part of the heat energy to electrical energy directly. Because of the nature of radiation from a coal flame, coal is the preferred fuel. Such devices in central station generating plants may increase overall plant efficiency by a factor of 12 percent or more. Small-sized units could generate useful power in packaged coal-fired boilers. Project is to develop such units from "breadboard" devices through bench-scale units in pulverized coal test furnaces, culminating in testing in operating central station boilers.
Blast furnace fuel-injection economics						A coal-injection system could represent an opportunity to protect or retain 50 percent of the potential coke replacement. Research will look at investment and operating factors, also the business aspects, and develop a report which may disclose coal's advantages in this application.
Pennsylvania State University (anthracite grinding)						This project is to combine several related small subprojects into 1, devoted to improve utilization of anthracite. The objective will be to develop improved methods of grinding, coupled with beneficiation, so that an integrated combustion method can be developed for generation or electricity at an economic cost. It will likewise be the intention of the work to reduce or work aside the accumulated culm banks from earlier anthracite operations. Waste from the plant could be used to refill old mined-out areas.
Industrial coal market analysis						Industrial users represent coal's second largest market. A depth analysis is needed to develop a realistic and effective future course of action. This study will be to indicate whether coal can realize its optimum potential and what realistic steps the industry should take to bring it about. The survey will seek to enhance profitable sales volume and provide a cushion against possible losses in other coal markets.
Total	$12,645,000		$1,209,000	$2,889,000	$8,547,000	

Contracts completed	Estimated total cost	Funded prior to fiscal year 1965	Estimated fiscal year 1965 allocation	Estimated fiscal year 1966 allocation	Estimated balance to complete	Brief description of project
Booz-Allen & Hamilton, Inc	$139,600	$139,600				To identify new products, which are economically and technically marketable, that would expand present coal markets and generate new ones.
Bituminous Coal Research, Inc	170,000	170,000				To study the preparation, transportation, and utilization of superfine pulverized coal. Specific objective is to develop systems for preparing pulverized coal with the removal of sulfur and ash content.
General Electric Co	750,000	750,000				To study the conversion of coal to gas liquid fuels and chemicals using electrical corona as the catalyst.
Virginia Polytechnic Institute	147,000	147,000				To develop scientific engineering methods and formulas for determining the most favorable combination of various elements in underground mining which can be controlled by the mine operator to insure lowest cost production under the physical conditions existing in his coal-producing sections or face areas.
Georgia Tech Research Institute	24,000	24,000				To study the reactions which occur between pulverized coal and various gases at high temperatures, and to identify the products or compounds formed.
Montana State College	26,000	26,000				To determine the yield and composition of liquid and gaseous products from bituminous coals.
Robert R. Nathan Associates	86,000	86,000				To study the coal export potential, identify the impediments to the full achievement of that potential, and recommend actions by Government and industry for expanding coal exports.
Babcock & Wilcox Co	8,500	8,500				The contractor performed a variety of tests to ascertain combustion characteristics of low-ash coal under a variety of burning conditions.
Combustion Engineering, Inc	5,180	5,180				Do.
Battelle Memorial Institute	24,750	24,750				Market survey for low-ash coal.
Total	1,381,030	1,381,030				
Grand total	35,994,723	9,580,155	$5,170,028	[1] $7,044,930	$15,049,610	

[1] Deduct $500,000 carryover from fiscal year 1965 for Consolidation Coal Co.'s lignite gasification project, equals $6,544,930; plus rounding of figures on Institute of Gas Technology project in budget estimates: +$44,070, equals $6,589,000.

CONSOL LIGNITE GASIFICATION PROJECT

Senator BIBLE. Last year Congress provided an unbudgeted $500,000 to you to be used only for additional contracting in connection with the conversion of lignite to gas. Would you please inform the committee of the progress which you have made with this $500,000?

Mr. FUMICH. I will have to let another member of my staff field that particular question because I used to be the attorney for the subsidiary of the company doing the research work on that project, so, Mr. Larson, would you reply to that?

Senator BIBLE. Mr. Larson, would you respond to my question? You understand the question?

Mr. LARSON. Yes, sir. Senator, the $500,000 is for the contract that we signed with the Consolidation Coal Co. We refer to it as the Consol lignite gasification project. The contract when it was signed used funds that had been appropriated by the Congress in fiscal year 1964 in the amount of $375,000.

We actually signed a contract for $384,300. This money we feel will carry us through the research aspects of the contract and the start of the design aspects of the contract in fiscal year 1965. It does not now look like we will be at the point where we could utilize that $500,000 in fiscal 1965. Therefore, it will carry over. It will still be used for the precise same purpose that Congress intended in fiscal year 1966 for this project.

Senator BIBLE. Senator Mundt?

Senator MUNDT. Yes. I was very pleased to get your letter of December 21 and the schedule that you attached and I note that the schedule shows your total requirement in fiscal 1966 of about $600,000.

Will it be necessary to fund the money for this project in 1966 in addition to the $875,000 which we have made available prior to this time?

Mr. LARSON. Senator, we believe that the portion of the contract in that second full year will utilize the $500,000, and coupled with the $375,000 that we already have, of course, would give us $875,000.

We had originally anticipated about $900,000 for this portion of the effort, so specifically the answer to your question is "Yes," this will take care of that portion of the work.

COMMERCIAL POTENTIAL

Senator MUNDT. I was also gratified to receive the phase 1 report on your existing contract with the Consolidation Coal Co., showing that gasification of lignite has potential commercial application. That certainly comes into the heading of good news and we discussed that a bit with Secretary Udall when he was before the committee.

For the record, I would appreciate a technical statement describing the current status of the project and your plans for the coming year.

Mr. LARSON. Senator, I think Mr. Cochran, who is the Chief of our Utilization Division and is responsible for the technical aspects of the contract, can respond to the question very favorably.

Mr. COCHRAN. Senator, we have had our experimental work underway for about 7 months and although we are only working on small-scale laboratory equipment I feel that all the results we have had so far are encouraging. We have currently authorized the contractor

to proceed in the next larger scale of operation and he has built a plastic model of the equipment he will use and expects to place this in operation very shortly.

DESIGN OF PILOT PLANT

We have requested and are currently processing an amendment to the contract to provide for beginning the design of a pilot plant early next fiscal year.

All the results have been good so far.

Senator MUNDT. The authorization of this pilot plant for South Dakota is one of the few, if not the only, pilot plants we have had in our area and has, of course, created a lot of interest in that region. Mr. Chairman, I would like to put in the record a copy of a letter I got from Mr. Larson dated February 12, which points out the feasibility and the progress being made, together with the news release of February 17 of the Department of the Interior entitled "Report on Feasibility of Producing Pipeline Gas From Lignite Now Available."

Senator BIBLE. Without objection, both documents will be made a part of the record at this point.

(The letter and press release referred to follow:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF COAL RESEARCH,
Washington, D.C., February 12, 1965.

Hon. KARL E. MUNDT,
U.S. Senate, Washington, D.C.

DEAR SENATOR MUNDT: We are pleased to enclose a copy of the phase I report prepared by the Consolidation Coal Co. in connection with the work they are doing to develop the lignite gasification process. This report is a feasibility study covering the expected delivery costs, expected prices, and expected demands of pipeline gas, for 1975 in the area which could be served by the lignite fields of the Dakotas.

The projections developed in the feasibility study estimate that pipeline gas from lignite could be delivered for about 2 cents per million B.t.u.'s less than competitive natural gas if the project is brought to a successful conclusion and then applied commercially.

Knowing of your early and continuing interest in this project, and the activities of the Office of Coal Research, we felt you would wish to have this information as soon as possible.

Sincerely yours,

G. EDWARD LARSON,
Chief, Division of Contracts and Administration.

[From the Department of the Interior, Office of Coal Research, Feb. 17, 1965]

REPORT ON FEASIBILITY OF PRODUCING PIPELINE GAS FROM LIGNITE NOW AVAILABLE

Copies of a technical report, "Pipeline Gas From Lignite Gasification—A Feasibility Study," prepared by the Research Division of the Consolidation Coal Co., Pittsburgh, Pa., have been deposited in key libraries for reference use, the Department of the Interior reported today.

The economic projections brought out in the feasibility report would represent a significant breakthrough in the cost of producing and marketing a pipeline-quality gas from lignite.

This report, prepared as phase I of a program to develop the "CO_2 acceptor process" under a contract with the Office of Coal Research, includes estimates of "as mined" cost of lignite, cost of converting the lignite to pipeline-quality gas at a mine-mouth plant in the Dakotas, the cost of pipeline transport of the gas to major load centers, and the competitive cost of natural gas. The estimate is, for the year 1975, that lignite can be delivered to the gas plant for $1.50 per ton or 10.74 cents per million British thermal units, and that the resulting pipeline-

quality gas will cost 39.7 cents per million British thermal units, including cost of lignite, plant operations, and capital charges. This is based on the CO_2 acceptor process, an actual 200-million-ton reserve of lignite, and a realistic evaluation of the cost of the necessary commercial-size plant facilities and utilities—particularly cooling water. Maximum pipeline transmission costs to the consuming city gate are estimated to be 8.6 cents per million British thermal units—making the total delivered cost to city gate to be 48.3 cents. It is also estimated that consumption of pipeline natural gas (in the primary consuming area for a Dakota lignite gas plant) will increase from 620 billion cubic feet in 1963 to 980 billion cubic feet in 1975 and that the city gate price according to the contractors estimate will increase from the present average of 40.7 cents per million British thermal units to 50 cents per million British thermal units. Thus, the contractor estimates the lignite-produced gas should be able to compete readily.

The report concludes that a 250 million cubic-foot-per-day lignite gasification plant, representing a commercial investment of $74 million and consuming about 9 million tons of lignite a year, is feasible. One such plant would produce only about 9 percent of the projected 1975 total demand for pipeline gas in the area. Because the investment would be comparable to that of a pipeline of the same capacity from major natural gas fields, the problems of peaking, interruptible sales, etc., would be similar and should present no special problems to the lignite gasifier.

Work on phase II of the contract—laboratory and bench-scale development of the CO_2 acceptor process—is continuing and will lead to the design of a pilot plant which, it is planned, will be built in South Dakota.

The report is in two volumes—volume 2 comprising the appendix with detailed computations.

In the Washington, D.C., area the report is now available for inspection at the Department of the Interior Library, the Library of Congress, and the National Coal Association.

Spencer Chemical Co., Low Ash Project

Senator Mundt. Senator Young asked me to ask a couple of questions for him.

What progress has been made in the past year with respect to the further development of the low-ash coal project of Spencer Chemical?

Mr. Fumich. Sir, I can answer that question. We had an evaluation on that project about 3 months ago. At that time we knew that we had achieved technical success, but were doubtful about the economics on the project, so we had a survey team go out to the project site to take a look at the actual work that had been done. They recommended that we have an independent survey conducted, in other words, that OCR sign a contract with an independent research organization to check and see what the market potential might be for the process. We knew that the next order of expenditure would require between $4 to $5 million for a pilot plant. We wanted to make sure that we were being objective, and also wanted to make sure that our cost-benefit ratio and the economics of the process were such that we would have good reason to go into a pilot-plant stage.

The survey of market potentials was made by Battelle Memorial Institute and finished a few months ago. The actual report which came out was on the pessimistic side. Based on the report and the negative opinion of an ad hoc committee which studied the report, we have now given the Spencer Chemical Co. additional time to come in with further evidence on market potential to at least give us a basis for a decision. We will then know whether we should go into a pilot-plant stage; whether we can go into some area in between; or whether we should accept the project as completed on the date of its expiration, which was yesterday.

The original contract was for $1,240,000. The contractor has spent almost that much with the exception of about $130,000. Because we had the expenditure of that large a sum of money we wanted to have good reason for either letting the project expire or going on into an advanced stage.

Senator MUNDT. I think you answered his second question, but I will ask it for the record. He says do you have funds in this year's budget to continue this project or to expand it to a pilot-plant operation.

FUND AVAILABILITY

I think you have answered the last part of it, but not the first part. Do you have funds in the budget to continue the project so as to arrive at this final answer?

Mr. FUMICH. Sir, we have obligated funds totalling $1,240,000 for the present project up through its expiration date, Feb. 22, 1965. This includes the $130,000 that we haven't spent, but as of this date we have not included funds for any pilot plant design or construction for this particular project in our budget request for fiscal 1966.

Senator MUNDT. Are you requesting any funds for this project at this time?

Mr. FUMICH. No.

Senator MUNDT. You feel you have sufficient funds to arrive at this terminal decision?

Mr. FUMICH. Sir, if we decide to go ahead with this particular project it would be my personal opinion that we would require more money. Our present program is a well-balanced one within the President's directives and the funding that we have requested will cover the itemized projects that we have included in our justification and budgetary statement, but does not include any research work outside the scope of those particular activities.

Senator MUNDT. Thank you.

Senator BIBLE. Are there further questions? Senator McGee.

RESEARCH PROGRAM

Senator MCGEE. As I understand, the Office of Coal Research does not have any facilities for conducting its own studies or experiments, but that its activities are limited in this area to awarding contracts to private firms. Is this correct?

Mr. FUMICH. That is correct, Senator. Our contracts are with public and private research organizations.

Senator MCGEE. Will you explain just how these research contracts are awarded? Is there any element of competition? Are there any definite criteria or standards by which proposals are judged or evaluated?

Mr. FUMICH. The contracts are awarded on the basis of a careful evaluation of a prospective contractor's research proposal by the Office of Coal Research, OCR's outside consultants, and frequently a review by the Bureau of Mines to check against a possible duplication on any research which is currently being conducted in that Bureau or which has been conducted by that Bureau. Obviously, an additional criteria is the matter of funding. It has been our

experience in the Office of Coal Research that over the years we have had many more proposals for worthwhile research than we had funds available for which to contract for that research.

With regard to your question on any possible competition, we wish to point out, of course, that our research contracts are all negotiated contracts, rather than bid contracts. Thus, the element of competition that is normally present in a bid contract is not present here. It is presently difficult to try to adapt research work into a purely competitive basis because we are not dealing with a product, nor a normal service, but rather with ideas. When a proposing organization submits a research problem to the Office of Coal Research, it would be highly unethical for the Office of Coal Research to use the ideas contained in the proposal submitted as a basis for a competitive bid by others, since to do so would be encroaching upon the proposer's proprietary interest. It is not proper, we believe, to seek competitive bids utilizing someone else's idea to do a piece of research on the cheapest basis. The talents, abilities, know-how, research background, and facilities of each proposing organization are all important in the decision made by the Office of Coal Research to negotiate a contract with such organization.

All of these things enter into the judgment and evaluation of each proposal. Obviously, when the Office of Coal Research sits down to actually conduct the negotiations with the proposed contractor, we have made an internal estimate of what we think the requirements of such research are. Based on this, we then attempt to negotiate the very best contract we can in the interest of the Government and the public.

However, in some instances the Office of Coal Research itself initiates a research project; for example, a market survey. In such instances proposals are solicited from a number of firms which are competent in this area and the competitive approach is followed.

Coal Conversion Projects

Senator McGee. With reference to projects under the Office of Coal Research for conversion of coal to gasoline, would you give us the status of any such projects at this time?

Mr. Fumich. We have underway four projects primarily concerned with producing liquid fuels from coal. They are Consolidation Coal Co., Inc., FMC Corp., Atlantic Refining Co., and Hydrocarbon Research, Inc.

The record will show our detailed answers with respect to the Consolidation project.

At FMC we are just now shaking down a process development plant designed to handle about 100 pounds of coal per hour. We expect to operate this plant for about 9 to 12 months.

The other two projects are so recent that we really have nothing significant to report. Preliminary runs on the Atlantic project have been encouraging, but we would hesitate to make any claim at this time. The Hydrocarbon contract is less than a month old.

Senator McGee. Do results or indications to date justify an expansion or acceleration of these activities? If so, what plans are underway to enlarge the capacity of the test plants?

Mr. FUMICH. Yes, Senator, we believe that the present results, if continued, would justify expansion in certain cases in the intermediate future.

With respect to your question on any plans underway to enlarge the capacity of the test plants, I assume you are referring to the pilot plant on the Consolidation Coal Co. project. If so, I will ask Mr. Larson to respond.

Mr. LARSON. Senator, there are no plans at the present time to expand the pilot plant on the Consolidation Coal Co. project beyond the level which we have planned on right along—namely, a pilot plant with a capacity of approximately 1-ton-per-hour of coal throughput.

WESTERN COAL PROJECTS

Senator MCGEE. Last year, as I recall, there was discussed before this committee projects undertaken by the University of Utah and Montana State College studying various aspects of western coals. The Montana project had been concluded at that time and the Utah project is scheduled for completion some time this year.

Are you aware of any similar studies by other western universities in cooperation with the Office of Coal Research?

Mr. FUMICH. No, Senator, we are not aware of any other similar studies being conducted by any other western universities. At the present time the University of Utah is the only western university in our program. We are right now in the process of amending the University of Utah contract to provide for additional performance of work for 2 more years beyond the expiration date of the existing contract and for funding by the Government of approximately $100,000 to be matched with State funds of approximately $68,000.

COLLEGES AND UNIVERSITIES IN THE PROGRAM

Senator MCGEE. Does the Office of Coal Research encourage the universities to undertake such projects?

Mr. FUMICH. Yes, Senator, the Office of Coal Research does encourage universities and colleges to undertake such projects, either on their own initiative or as a part of a contract relationship with the Office of Coal Research. You may recall that the enabling legislation which brought the Office of Coal Research into existence specifically provides for the Office of Coal Research to "contract for, sponsor, cosponsor, and promote the coordination of, research with recognized interested groups, including but not limited to, coal trade associations, coal research associations, educational institutions, and agencies of States and political subdivisions of States."

We would certainly welcome submission of stimulating ideas from the University of Wyoming just as we do from other universities. We must stress that we do contract work and do not make grants, and that we are able to look most favorably at proposals which have a practical application to the coal industry.

Senator MCGEE. How does a university interested in participating go about applying? I ask this question since I feel that many institutions such as the University of Wyoming have both the physical facilities and the personnel to contribute, and I think we might be

missing a good bet if we are not activley encouraging them to participate in these studies.

Mr. FUMICH. Sir, I do not believe it is precisely a question of a college or university applying for research. Rather, the University of Wyoming or any college or university with the necessary personnel, facilities, and research know-how can submit a proposal for research to the Office of Coal Research. I happen to know that we have not received any proposals for research from the University of Wyoming.

COAL TRANSPORTATION STUDIES

Senator MCGEE. Recently, an executive of one of the leading coal companies in the United States discussed the fact that transportation is and always has been a significant element in the cost of coal at point of consumption. Since this is particularly true in reference to Wyoming-produced coal due to the fact that we are some distance from major consuming points, I was wondering what projects, if any, under the Office of Coal Research are directed to the transportation factor?

Mr. FUMICH. The Office of Coal Research has a current contract with the Robert R. Nathan Associates dealing with the very subject of transportation economics of western coals. Based upon the excellent results that emerged from an earlier study performed by this same organization on export coals, we trust that this current effort will be as fruitful. We have appointed a Transportation Task Force from our General Technical Advisory Committee for the purpose of going into all aspects of the transportation problem to point out areas of possible research effort.

Senator MCGEE. Are there further activities which would be beneficially pursued in this area if additional funds were made available?

Mr. FUMICH. At the moment, Senator, we do not have any proposals in hand for any further contract activities in this area. We hope that our Task Force will be coming up with some suggestions in this area.

Senator MCGEE. What recent developments have taken place in regard to mine-mouth generating plants and transportation of high-voltage electricity?

Mr. FUMICH. If your question relates to what developments have taken place in the Office of Coal Research contract program, Senator, our answer must be nothing. However, Senator, there have been extensive developments going on in the electric power industry. Many organizations are currently considering and building mine-mouth generating plants. The Department is interested in long-distance transmission of direct current, and we believe that these developments, coupled with improved power generation methods, is the look of the future.

Senator MCGEE. What recent developments have taken place in regard to the unit train concept?

Mr. FUMICH. Again, sir, the Office of Coal Research does not have any contracts dealing with unit trains primarily because the private sector of our Nation's economy concerned with rail transportation has moved very rapidly on the unit train and integral train concept in the last couple of years. In many cases the railroads have designed and built special equipment for this purpose. In other cases coal

companies or electric utilities have ordered such special rolling stock. The railroads have also established special timetables and handling procedures, including loading, rail movement, and turnaround of such equipment. Also, they have, in many cases, instituted special rates to accommodate unit-train or integral train movements of coal.

Senator McGEE. What recent developments have taken place in regard to coal pipelines?

Mr. FUMICH. We have touched on coal pipelines above insofar as our program is concerned. Detailed information on coal slurry pipelines is available from the Consolidation Coal Co.

RESEARCH PROPOSALS

Senator McGEE. Approximately what percentage of proposals presented to the Office of Coal Research resulted in granting of an award by the Office in the past year?

Mr. FUMICH. The Office of Coal Research has received a total of 348 proposals since its inception. We have signed a total of 31 contracts to date. Thus, the percentage ratio is less than 1 in 10. In the past year we received 67 proposals. We awarded 10 contracts in calendar year 1964. However, some of the contracts awarded were based on proposals which were received much earlier than last year. As I indicated earlier, we have always been in the rather fortunate position of having on hand at any given period of time a greater number of proposals for worthwhile research contracts that we have funds available with which to undertake such contracts. On this basis, Senator, we have tried to be very selective, and we believe that we have been able to sign very good contracts utilizing some of the best research brains in the country.

Senator McGEE. Is this figure increasing, decreasing, or remaining more or less static?

Mr. FUMICH. The number of proposals is constantly increasing, and if I were to venture a prediction, I would have to estimate that as the program continues to grow, and as worthwhile research results emerge from it, there will be an increasing interest which will stimulate a still greater number of proposals for worthwhile research in the future.

SUCCESS OF PROJECTS

Senator BIBLE. Senator Byrd.

Senator BYRD. Mr. Fumich, we know that research projects require considerable time to carry through to completion. We also recognize the fact that your office has been in operation only about 3½ years, as you have already indicated.

With these things in view as I have indicated them what projects in your estimation can you say have been successful to date?

Mr. FUMICH. Sir, as you state, we have been in operation 3½ years. I am proud to say that we have had some modest successes to date. Usually a research program such as ours, or any research program, will require much more time before any of the projects reach maturity and before industry can assimilate the knowledge or utilize the research results. We have had some projects that in my opinion should have a major impact on the coal industry.

OVERSEA EXPORT COAL PROJECT

The first one that I would like to mention is the Nathan Associates contract which was signed for $86,000. It has been completed. It was a study of overseas coal exports.

The project was designed to see how much of a potential market we had overseas, what some of the problems were that had to be resolved in order to achieve the market potential, and how we should go about resolving those particular problems.

As a result of that study there were indications that foreign importers thought that the U.S. coal industry wasn't forward looking and they were not thinking about signing long-term contracts.

U.S. RESERVES TO BACK UP LONG-TERM CONTRACTS

Also, there was some skepticism in the oversea sector that the United States did not have sufficient reserves to back up long-term contracts, but based on the way the coal industry and Government moved on the recommendations of the report and really went out and asserted themselves, the Secretary of the Interior issued a press release stating that based on this study, based on the recommendations made, and based on the eagerness and the agressiveness of certain segments of the coal industry and the Department of the Interior, coal companies and coal exporters had signed contracts for about 5 million tons of additional coal annually over a period of years.

VPI Computer Study

The second contract that we are pleased to report on this afternoon is the VPI computer study. At the time the contract was signed several segments of the industry thought it was a long-haired study and they were a little on the skeptical side. However, based on the results of the study and the way that VPI went about conducting the study it was decided that they would go into the various factors contributing to costs in the immediate production areas. Based on their results and findings the coal industry again has shown their interest in the work we have been doing, and companies responsible for 30 percent of the industry's tonnage have either taken an active interest in the results and findings of the survey, or they are now ascertaining what they can do to implement the recommendations. We think that the potential is for a possible saving of approximately 40 cents a ton in production costs. This would be almost 2 cents per million British thermal units and you can just imagine the desirable impact this can have on coal sales to the electric utility market.

INTEGRATED BOILER PROJECT

Another contract we are pleased to discuss in the success field is the Pope, Evans & Robbins contract signed for $164,000. Here the mission was to try to find an integrated boiler that would get away from being manually operated and all of the other inconveniences inherent in coal-fired boilers. We were seeking a unit that would develop up to 50,000 pounds of steam per hour.

One of the reasons we went into that particular contract was because the Booz, Allen & Hamilton report indicated a market potential of up to 70 million tons for industrial boilers.

So far, six companies have installed these boilers. The tonnage increase to date is approximately 120,000 tons per year. Two other companies are intensely interested and we think that they are going to install boilers incorporating the designs developed under this contract.

We also have had a series of inquiries from other companies and if they go into the actual installation of the boilers there will be a tonnage potential of 500,000 tons annually. We also believe that if this interest continues over a period of 5 years that there is the potential for another 5 to 10 million tons. We believe that this contract can have a real impact in the coal industry.

RECOVERY OF COAL, SECONDARY MINERALS, AND MATERIALS

The last one I would like to mention at this time is one which, although it hasn't made an impact at this particular time, the implications for it are tremendous. This is a contract we signed with West Virginia University for a total of $139,000. The purpose of the contract was to see if we could recover some of the secondary values of minerals and materials associated with coal, thereby lowering the cost of coal by utilizing some of the byproducts or some of the minerals in these secondary areas.

WEST VIRGINIA UNIVERSITY DEVELOPS NEW TYPE BRICK

As a byproduct of that contract, West Virginia University has developed a new type of brick. It is 30 percent lighter than regular clay brick, and it is also stronger in all types of tests.

In 1962, the utility industry in burning coal for power generation, had about 12 million tons of fly ash. Only 10 percent of that ash is used in some type of market.

It actually costs about $2 a ton to get rid of it. By 1980 about 28 million tons of this fly ash will be available annually. If we utilize the fly ash in this type of brick or other construction-type material, and if this brick process is carried to the next stage of development and proves successful we believe it will have a tremendous impact on the coal industry, and as a bare minimum make a differential of about 2 cents per million British thermal units as a saving to the electric utility industry, coal's biggest market.

We also have others that appear successful but they are in an intermediate stage and will take a bit more time. We are not going to be too boastful because I think it is always best to be cautious.

We do think that in future years we will have other contracts that will make an impact.

Dr. Wiesner, former science adviser to the President, said:

> You cannot expect that research and development activities are going to turn an industry around in 2 years or 5 years. I think you have to anticipate that these activities are going to be spread out over a number of years and the impact of what you do today and tomorrow and next year may not be felt for several years.

The results of the research we do today, tomorrow, or maybe next year will take time before U.S. industry can really assimilate them, put in the capital expenditures and everything else necessary, and then have the final results show up as improvements in the condition of the coal industry.

I am sorry it took me so long to answer your question.

INDUSTRY ACCEPTANCE

Senator BYRD. On the basis of your statement apparently the coal industry has sought to take considerable advantage of the export study that was conducted by Nathan Associates, Inc.

In your judgment, do you feel that the coal industry has indicated it will take advantage of the results of the other studies and projects that you have enumerated here?

Mr. FUMICH. Yes, sir; I believe that we could say that. One of the real tests of a research program is whether industry itself is willing to take over where you leave off, then you know that you are coordinating your work with industry's needs.

I think it is exemplified by the Nathan contract, by the VPI contract, and also by the Pope, Evans & Robbins contract, that our work is the type of work that the industry believes we should have gone into. We think that the contracts we have just mentioned show the merit of that particular type of work, sir.

FOR PROGRESS IN PAST 3½ YEARS

Senator MUNDT. If the Senator will yield, I think that Mr. Fumich should be congratulated by our subcommittee on the progress which has been made in 3½ short years. We usually think of research over a sweep of many years. In view of these benefits accruing to the industry I would say this particular budget should be listed as an investment rather than an expense to the Government.

Senator BYRD. I think he has given a very impressive report of the activities of the agency thus far and apparently they are going to prove to be very fruitful.

Do you believe that the coal industry has followed through with the placing of orders incorporating some of the designs that have been developed under these contracts?

COAL INDUSTRY PROGRESSIVENESS QUALIFIED

Mr. FUMICH. Yes, sir. I have a mixed reaction on that question. I think they have, and yet I think they could do still better. I think it is a feeling that we should have.

I think that we can do better. In other words, the coal industry is taking a limited step forward, but I think traditionally the coal industry has been a little backward in research. I think they realize it. I do think they have taken a good step with this particular program and I know they realize how important research work is today, and in fact we have been working hand in hand with the coal industry in our particular program and I am very happy to say it.

Senator BYRD. I imagine the coal industry has found it impossible to go forward with research financed by the coal industry simply

because the coal industry has had a very difficult time more often than not in keeping its head above the water and coming out in the black rather than in the red.

Mr. FUMICH. Sir, I think you answered your own question very well.

COAL INDUSTRY CONFIDENCE IN OCR PROGRAM

Senator BYRD. Do you feel that the coal industry has indicated confidence in your program?

Mr. FUMICH. Sir, as I said about the four projects already mentioned which have had modest success to date, the industry has been very interested.

They have taken up almost immediately that which has been made available to them and I think they are willing to do that again on some other projects.

Senator BYRD. In other words, they appear to be pretty enthusiastic about your activities?

Mr. FUMICH. Yes, sir.

Senator BYRD. Does this go for the United Mine Workers too and the other labor groups?

Mr. FUMICH. Sir, from all indications that we have seen they are, and I have tried to keep a good line of communications open not only with the coal industry, but also with the United Mine Workers because I know they are very interested in our program. They not only are interested but also cooperate with us in every way.

ADDITIONAL POPE, EVANS & ROBBINS BOILER PROJECT

Senator BYRD. You are requesting $200,000 in fiscal year 1966 for another Pope, Evans & Robbins boiler project. Will you explain that request?

Mr. FUMICH. Yes, sir. As I indicated in explaining our current contract with Pope, Evans & Robbins, the potential in that particular market is considered to be around 70 million tons as reported to OCR by Booz, Allen & Hamilton in their contract study. As we understand it, the greatest part of this potential is in the market of boiler units with a capacity of about 100,000 pounds of steam per hour, and so we are going to direct our attention to that area.

Based on our experience with the contractor, and based on their experience with the work included in the initial contract, and the fact that we think there are some new breakthroughs that are either imminent or possible in the combustion area, we decided to go after this larger increment of the boiler market with another contract.

WEST VIRGINIA UNIVERSITY PROJECT CONTRACT

Senator BYRD. You referred a little earlier to the West Virginia University contract and you indicated that there had been some success to date. Do you feel that additional research by the University of West Virginia is desirable?

Mr. FUMICH. Yes, sir.

Senator BYRD. So do you plan to go ahead with it?

Mr. FUMICH. Yes, sir. We think that the work that has been accomplished to date should be scaled up. We also believe that we should expand upon that and go into other construction materials resulting from that process; in other words, other building-type materials that would expand that market.

Senator BYRD. In other words, the additional work would relate the process not only to bricks on a larger scale, but also to additional construction material; is that right?

Mr. FUMICH. Yes, sir.

GENERAL ELECTRIC CO.—PROJECT BOOTSTRAP

Senator BYRD. Last year we went into the matter involving Project Bootstrap quite at length. What is the present status of Project Bootstrap?

Mr. FUMICH. Sir, all experimental work on Project Bootstrap was concluded last July when the contract expired. The final report was published later in the year, and has been made available publicly now.

Senator BYRD. I believe that last year and the year before last the Office of Coal Research indicated considerable optimism with regard to success of Bootstrap.

Could you tell us what happened?

Mr. FUMICH. Sir, in research work one has to be an optimist generally in order to push a program ahead, but in that particular project we had specific reasons to be optimists. All of the runs were good prior to the date that we testified.

For the research work that was done in the year before that, the results were also encouraging, and the runs in January and February last year, immediately preceding our appearance here before the committee were favorable. After that, however, the contractor had some test runs, and based on the power requirements that were indicated we concluded at that time that the project would not be economic.

WORK ON PROJECT JUSTIFIED

Senator BYRD. Do you feel, Mr. Fumich, that this constituted a total loss insofar as the moneys expended were concerned, or do you feel that there were some successes that were had with the project.

Mr. FUMICH. No, sir; we do not consider it a total loss. In fact, we think the work on the project not only was justified, but there was a considerable amount of fallout from that project which will be included, and which will help us in our other projects.

The contractor did succeed in hydrogenerating coal. We think that the knowledge that was gained will help us tremendously in some of our other big projects.

Senator BYRD. How much has the office spent on Project Bootstrap thus far?

Mr. FUMICH. Sir, that contract was signed for $750,000 and to date we have expended just about all of it.

Senator BYRD. So there will be no more money expended beyond that on this project?

Mr. FUMICH. No, sir.

Senator BYRD. You do feel, however, that the research conducted in connection with Project Bootstrap will prove to be beneficial with

regard to other projects which are presently being worked on or which may be contemplated at some future time?

Mr. FUMICH. Yes, sir; I do. I think that the knowledge gained in that particular project might save us at least that much money possibly in the total accumulation of projects that we have and that we are going to use that knowledge.

I don't think that it was a failure at all. Of course, it was a judgment factor that we had to make. We realize that all of our projects are not going to come to a completely successful conclusion.

That was one that we could not pursue further in good conscience, sir, so we let it expire.

Senator BYRD. Of course, I have been disappointed, as I know you have been, in your decision that you cannot go foward with the project; but I think that I would certainly share your views, Mr. Fumich, and I am sure that the committee would feel as I do in this respect, that you could not afford to proceed further with the project if it has proven to be uneconomical.

Mr. FUMICH. Thank you, sir.

Senator BYRD. I don't think you can be scored on that point at all. I think that you proceeded to the stage where you determined that it would not be economical and that being the case you did precisely what was required, I should think, so I feel that you are to be complimented really in proceeding to that point, making that determination, and then, even though it is a disappointing one, sticking by your decision.

I am pleased, however, to find that out of this research has come some beneficial knowledge which can be utilized to the benefit of the coal industry at some future date.

COAL GASIFICATION PROJECTS

What about your so-called gasification package? I believe the committee went into this subject last year and quite at length the year before last. Are these projects on schedule?

Mr. FUMICH. Yes, sir; we are very pleased with the present progress of our gasification projects. You realize they are all integrated and I think they are getting along exceptionally well, sir.

Senator BYRD. You would say they are on schedule.

Mr. FUMICH. Yes, sir.

Senator BYRD. What firms are involved in the gasification projects?

Mr. FUMICH. Sir, as you realize, it is a three-pronged package. One, the Kellogg Co. is doing experimental work using a molten salt-type reactor.

No. 2, is the IGT contract. They are doing work using a hydrogasification process, and in the BCR contract the contractor is seeking to develop some better types of gasification equipment.

Senator BYRD. The gasification projects being interrelated, it might be well for us to have an understanding as to what may be the difference between them.

Mr. FUMICH. I would like to say that just as in cancer research, you have different avenues of approach to a common objective and even though work is proceeding in the same field the route is by a different process.

The molten salt process at Kellogg is one approach. The hydrogasification process is another, and trying to find better equipment is complementary to both of the others, sir.

Senator BYRD. Do you think that you are justified in spending money on all three approaches?

Mr. FUMICH. Yes, sir. I think that in the end it will mean an expenditure of a lesser amount because with concurrent work the results will advance, and I think there will be practical results in each situation.

FUNDING OF PROJECTS

Senator BYRD. How much money is in the budget for this project this year if any?

Mr. FUMICH. We have asked for $500,000 for Kellogg, $300,000 for IGT, and $250,000 for BCR.

Senator BYRD. Do you think this is sufficient to fund your full capability?

Mr. FUMICH. I think the contractors are going about as fast as we can expect with these types of processes. The people doing the work are pleased with their approach and progress, and I think that the funding is just about right, sir.

INSTITUTE OF GAS TECHNOLOGY PROJECT

Senator BYRD. I understand that a portion of the costs of the IGT project are being sponsored by the American Gas Association. Is this correct?

Mr. FUMICH. Yes, sir. The contract, as you know, is cosponsored and includes $856,000 Government funding and an equal amount by the American Gas Association. We are very pleased about this because it shows that even competitive forms of energy are thinking about progress in this particular area and are willing to enter such a cosponsored contractual arrangement.

Senator BYRD. Has there been any indication from the gas industry as to its intention with respect to commercial applications if you are successful?

Mr. FUMICH. Sir, we have no commitments as such, but I do know that we have expressions of interest. I think the American Gas Association's financial participation is one positive evidence of such interest. If the end results of the research are good I think the commercial gas industry will jump right in with both feet. We are confident that other companies will do the same thing.

Senator BYRD. How much coal tonnage would a large gasification plant consume annually?

Mr. FUMICH. Sir, most of the commercial gas plants, whether in these particular projects or others, are based on a standard size of about 250 million cubic feet per day of gas and would require generally anywhere from 4 to 10 million tons of coal a year, depending on the heat value of the coal and efficiency of the process.

UNION CARBIDE CORP. PROJECT

Senator BYRD. Would you explain the Union Carbide high-pressure hydrogen project for which you are asking a $400,000 funding?

Mr. FUMICH. That is a project that we expect to sign in fiscal 1966 or sooner than that if we can do it. So far in all of our gasification

processes, we have to depend on other forms of energy for our hydrogen. With this project we would have an independent source of hydrogen. We think that this is desirable in our program.

It would be cheaper and it would be made from coal and would represent a saving. It is a process employing controlled agglomeration in a fluid bed.

Senator BYRD. Heretofore you used other sources of energy in connection with your gasification process?

Mr. FUMICH. Yes, sir; unless this process or some other one designed to accomplish this purpose is successful, our projects will have to depend on other forms.

BITUMINOUS COAL RESEARCH, INC., PROJECT

Senator BYRD. You are asking for another $100,000 for another Bituminous Coal Research project which I believe will be a fluidized bed reactor. Would you explain this?

Mr. FUMICH. Yes. This is another project which I think has great potential. We all realize the hazards of air pollution. What the contractor proposes to do in this contract is eliminate the pollutants in the fluidized combustion bed. If they can do that we think this will help resolve a problem that is bad now and which can become much worse in the future.

BITUMINOUS COAL RESEARCH

Senator BYRD. It is evident that you have been working closely with Bituminous Coal Research. I feel that this is an excellent partnership for many reasons. It shows you both see eye to eye on the type of research that should be done to benefit the coal industry and it proves to me that a good line of communication has been established between you and this is very important.

It also shows that the coal industry through its research agency is advancing research. Would you like to comment on this?

Mr. FUMICH. Yes, sir. We are pleased to state that we have been cooperating with the people from the coal industry, with BCR, and we are pleased to say that they have been cooperating with us.

As you have said, we have established a good line of communications. I think we and BCR both believe that our respective programs are programs that are important for the coal industry and it is exemplified by the fact that we not only have the program that we have been talking about, but we hope to have a total of three programs running with BCR in the near future.

The gasification program that we already have, the ebullating or fluidized bed reactor project which you mentioned, and also a continuation of the fine grinding process. We think it is very important that we seek and continue to work together.

BENEFITS TO THE NATION'S ECONOMY

Senator BYRD. I saw somewhere recently figures relative to the estimated number of miners required to produce one million tons of coal, their total salaries, and some of the concomitant benefits that accrue to other portions of a local economy.

Do you happen to know what these figures may be?

Mr. FUMICH. Sir, I think you are talking about figures published and jointly released by National Coal Association, National Coal Policy Conference and the United Mine Workers.

Senator BYRD. You are normally good at carrying them around in your hat.

Mr. FUMICH. I think the figures originated with the Bureau of Mines. The published figures said that it would take 400 underground miners to produce about a million tons of coal. Also it would require about 200 transportation workers, such as barge workers, truckers, and railroad workers to transport it. The report includes figures from the U.S. Chamber of Commerce to the effect that any hundred new jobs in the community would mean another 65 jobs.

It would also mean about $710,000 per year of personal income. Also, it would mean three more retail outlets. I think also they said it would mean $331,000 in retail sales, 97 cars registered, and $229,000 more of bank deposits. I think this would be for each increment of 100 people in the community being employed.

Senator BYRD. So the chain reaction is something that is very beneficial to the community and to the economy of the area and contributes at least to some extent to the improvement of the overall economy of the country, doesn't it?

Mr. FUMICH. Yes, sir.

COAL GASIFICATION PROJECTS

Senator BYRD. With regard to the gasification projects again, Mr. Fumich, it was indicated I believe last year and the year before last, that pilot plant work could be envisioned in the not too far distant future and that possibly pilot plants working on the three interrelated projects could perhaps be located at one site.

Does the Office still feel that these things are true?

Mr. FUMICH. That is still our belief, sir.

Senator BYRD. What, in your opinion, could one state as being a target date for pilot plant operation?

Mr. FUMICH. Sir, our estimates are that on the IGT project, the pilot plant date would be July 1969. The Kellogg pilot plant date will be January 1966. The BCR pilot plant will be July 1967, and the FMC pilot plant also will be July of 1967, sir, so you can see that one will be a year from this date. These are only approximations and based on the assumption that the present work on each project continues to go well.

Senator BYRD. Are you still of the opinion that the three might be coordinated in one locale?

Mr. FUMICH. Yes, sir; we are.

Senator BYRD. Did I understand you to say that you would not be able to utilize additional funds over and above the budget estimate for the gasification work?

Mr. FUMICH. No, sir; not at this time. Our planned work, we are pleased to say, is on schedule and additional funding right now would not mean a shrinking of the projected dates.

CHECKS TO AVOID DUPLICATION WITH BUREAU OF MINES

Senator BYRD. In your judgment is there any overlapping of work in the gasification field between the Bureau of Mines and your Office?

Mr. FUMICH. No, sir. I think it was stated here this morning, and we can concur in that judgment, when we receive a proposal for desirable research we send it to the Bureau of Mines for consideration of duplication and in some cases also for evaluation. At least in the last year, and I am confident in the years before that, there was also a checking, but it was just last year that we instituted this early-type procedure. I am positive that there has been no duplication, either in the gasification field or any other field in which we are or have been working.

Senator BYRD. I suppose this is a two-way street in which the Bureau also checks with your office before it proceeds to develop some of its projects?

Mr. FUMICH. It hasn't been a complete two-way street to date, sir, because so far the Bureau has established traditional fields of research and any research work that we have been getting into almost naturally would follow, you might think, work that they might have been doing. As of this date we have been checking with them but I would envision that possibly some time in the future it could be advantageous that we check with each other.

I have been checking at the request and under the direction of the Assistant Secretary's office with the Bureau people on all their budget projections and in that way we check even now the Bureau's projected work of the future. So even today we can say that it is a two-way street as far as duplication checking is concerned, sir.

PROJECT GASOLINE—CONSOLIDATION COAL CO.

Senator BYRD. Now we will turn to Project Gasoline. I have a feeling that your report with regard to this project will be considerably better than the one with regard to Project Bootstrap. What is the current schedule with respect to the completion of Project Gasoline?

Mr. FUMICH. I am going to have to call on one of my division chiefs to field that question for the reason I stated before.

Mr. LARSON. Senator, you asked for the date of completion of the project. As you recall, we signed the contract in August 1963. It is a 6-year contract. We think that the contractor is on schedule and we hope that the work will be concluded on time, which of course will be August 1969.

Senator BYRD. And the name of the contractor.

Mr. LARSON. The Consolidation Coal Co.

COMPLETION OF PILOT PLANT ENGINEERING

Senator BYRD. When will your pilot plant engineering be completed?

Mr. LARSON. The pilot plant engineering should be completed in May of this year and we have already asked our contractor, Consolidation Coal Co., to begin work on their drafting of a potential subcontract, which of course would be awarded on a bid basis to a construction firm to build the pilot plant.

Senator BYRD. When would you anticipate Consolidation Coal Co.'s issuance of the contract draft?

Mr. LARSON. My estimate, sir, is that they will put out a call for bids in June of this year and I would hope, allowing a little over a month's time to evaluate the bids received and hold any necessary discussions with the potential recipient of that subcontract, that possibly early in the new fiscal year, let's say July or at the latest August, that the construction subcontract will be awarded.

FUNDING FOR PILOT PLANT ENGINEERING

Senator BYRD. What is the funding that is currently provided for this?

Mr. LARSON. We awarded the contract initially in 1963 and funded the entire amount that Congress had appropriated for it up to that time, which was $3 million. We have obligated an additional $1.5 million in fiscal year 1965 so that there is a total of $4.8 million on the project as of this date.

The laboratory work that has been going on as well as the architectural and design subcontract which is currently going on have used up something over $1 million of this money up to the present time. By the time we actually award the construction subcontract in the middle of this year my guess is that we will have actually expended about $1.5 million of the $4.8 million or slightly more, so we would have approximately $3.3 million available for construction money. I do not estimate that this would be enough to cover the entire cost of construction of the pilot plant.

However, we would have our new appropriation for fiscal year 1966 which, added to the $3.3 million that we are estimating we will carry over, would enable us to fund it entirely as well as to carry on the additional laboratory work that will be going on concurrently in the next year.

FISCAL YEAR 1966 FUNDS FOR CONTRACT

Senator BYRD. How much are you requesting, you say for fiscal year 1966?

Mr. LARSON. $1.5 million, sir.

Senator BYRD. Will this be sufficient in your judgment? Do you have a greater capability than this?

Mr. LARSON. We think that this will do it, sir. The construction costs may run just slightly higher than we are estimating. You may recall our original estimates which were drawn up a couple of years ago, and presented to this committee in our testimony, were in the nature of $3.5 million for this pilot plant. This may be slightly higher. We don't know.

Senator BYRD. Your estimates have not been revised upward at this point?

Mr. LARSON. Just internally in our own thinking, we have discussed this internally and we have discussed it with the contractor.

CONSTRUCTION OF PILOT PLANT

Senator BYRD. The construction phase would require about how long, would you say?

Mr. LARSON. Probably from beginning to end, sir, about 18 months, but my estimate is that the actual shakedown operation of the pilot plant will begin about 12 months after construction is initiated. This is the likelihood.

Senator BYRD. In other words, about what target date can we pinpoint here?

Mr. LARSON. Oh, I would say July 1966. If construction starts in July 1965, then in July 1966 they would begin their shakedown operation.

Senator BYRD. Then construction would likely require about 18 months beyond that?

Mr. LARSON. No, it would require just an additional 6 months before everything would be completed.

Senator BYRD. So about January of 1967.

Mr. LARSON. The pilot plant would be in full-scale operation in January 1967.

PROJECT GASOLINE PROSPECTS

Senator BYRD. What results have you obtained thus far?

Mr. LARSON. Sir, the projections are considerably better than when we had our initial feasibility study conducted by an outside engineering firm before we ever signed the contract. Progress has been made on a revised catalyst system.

I think I will have Neal Cochran address himself to those aspects of the contract, if I may, sir.

Senator BYRD. Yes. Mr. Cochran.

Mr. COCHRAN. Senator, since the beginning of the project with respect to all the estimates which were made for the department by the Parsons Co. we have improved them so that any estimate made today would be better than it was when we undertook the project. We feel that possibly for the first time we can forecast a competitive, commercial, coal-to-gasoline process.

In terms of specifics, we would have a coal system using the revised catalyst scheme that the contractor developed in this contract and an improved method of generating hydrogen from the char which was previously rejected.

GASOLINE COST AND RETURN ON INVESTMENT

This divorces the plant from the need to purchase natural gas, and we would forecast today that a commercial 10,000-ton-a-day coal plant erected by private industry would produce about 10 million barrels of gasoline a year to sell at a cost of about 11 cents per gallon, and would return about 8.4 percent on the total investment including the working capital for the plant.

Senator BYRD. This would be 100-octane gasoline.

Mr. COCHRAN. That is correct, sir.

Senator BYRD. And the cost would be about 11 cents per gallon.

Mr. COCHRAN. That is the estimated cost and those figures which I have given would be the selling price at the refinery rack of 11 cents a gallon and purchasing coal at current competitive prices.

Senator BYRD. At the time earlier estimates were given to the committee what cost per gallon was then foreseen; do you know?

Mr. COCHRAN. Parsons reported 13.6 cents per gallon. We feel this improvement is in fact a return on research investment.

Senator BYRD. I thought it was in the neighborhood of 13 cents. Is it possible that once you have the pilot plant constructed and operating you might find that the product can be had for even less than 11 cents per gallon?

Mr. COCHRAN. We would certainly hope that this is the case.

Senator BYRD. Certainly if there is any difference it would be by way of a further reduction, wouldn't it? It would not be above 11 cents per gallon, would it?

Mr. COCHRAN. No, it would be an improvement in my judgment, sir. The estimates are conservative.

UNION CARBIDE HYDROGEN PROJECT IMPACT ON PROJECT GASOLINE

Mr. LARSON. Senator, if I may interject with a thought at this point, Mr. Fumich mentioned a little while ago the desirable aspects that may emerge from some of our other research projects, among them, for instance, this Union Carbide high-pressure hydrogen project. If this project turns out to be economically feasible and we get a low-cost hydrogen that emerges from it this could have a tremendous impact again on the cost factor of this Project Gasoline because right now part of the hydrogen requirements would have to come from natural gas which would have to be purchased. If, on the other hand, they can meet their hydrogen requirements by hydrogen produced from coal all within this same plant this has the net effect of further reducing costs, in addition, of course, providing consumption for a greater quantity of coal.

PILOT PLANT DAILY CONSUMPTION OF COAL

Senator BYRD. How much coal would actually be used per day in the pilot plant operation, would you say, Mr. Cochran?

Mr. COCHRAN. The actual pilot plant will require about 20 tons of coal a day. This is the designed rate for the plant.

PILOT PLANT PERSONNEL

Senator BYRD. How many persons would be involved in research in the pilot plant, would you envision?

Mr. COCHRAN. It would be on the order of a hundred, sir.

Senator BYRD. And over a period of how long would you say that it would be necessary to keep this pilot plant in operation?

Mr. COCHRAN. We are currently projecting about 3 years.

Senator BYRD. Then would you anticipate the plant being taken over by the industry for further operation? There would be some further use of the plant, wouldn't there?

Mr. COCHRAN. It would be a very usable facility, of course, and we potentially might have other processes to pilot at the same location or it could be sold to commercial concerns interested in building a commercial plant. This is probably the greatest likelihood.

POTENTIAL COAL MARKET

Senator BYRD. Do you foresee this project as possibly being one of the best, if not the best, insofar as a potential coal market increase is concerned?

Mr. COCHRAN. I would certainly think so. The area of consumption of liquid fuel, of course, is potentially very large. This process is quite well advanced. It appears, based on current estimates, that the process will have immediate commercial potential if our results continue to be successful, and it will certainly mean a great deal, we feel, to the coal-producing regions of the eastern and midcontinental United States.

OTHER LIQUID FUEL PROJECTS

Senator BYRD. You made some reference a moment ago to the FMC contract. Do you have any other work underway in the liquid fuel area?

Mr. FUMICH. The HRI project executed in the last week or so is another project in the liquid fuel area. We believe that this particular work would also supplement the work that has just been discussed by Mr. Larson and by Mr. Cochran, and also in our other conversion projects.

Senator BYRD. So again these are not overlapping projects.

Mr. FUMICH. No, sir; each approaches the liquids-from-coal problem from a different angle.

Senator BYRD. They are interrelated and you might draw different strengths and benefits from certain ones which could be utilized in connection with completing others.

Mr. FUMICH. That is right, sir. If I may supplement just a little bit. Every 5 or 6 months Mr. Cochran has a contractors' meeting. He invites the different contractors in who are doing work in the same general area. Through these discussions we believe that we get fallout benefits from particular projects that can be immediately utilized on other projects on which we are working in the same general area of research.

In fact, you just had a meeting about a month or so ago, didn't you?

Mr. COCHRAN. Yes, sir.

Mr. FUMICH. The Atlantic Refining Co. project is another project that falls in the general area of liquid products from coal. We signed that last summer for $918,000.

Senator BYRD. So you have the FMC, you have the Atlantic Refining Co., and you have the HRI. I believe this is the summation of the group.

Mr. FUMICH. Yes, sir.

PILOT PLANT FACILITIES

Senator BYRD. Is it possible for your research to lead to a combination plant, that is, one producing both liquids and gases?

Mr. FUMICH. Yes, sir. That is one of the objectives we have. We believe that if we can do that we can bring down the price of the end product so that by utilizing every one of these discoveries from our processes it would make a very good combination.

BUDGET REQUIREMENTS SUFFICIENT

Senator BYRD. As I understand you then, Mr. Fumich, you are saying that the moneys in the budget for gasification projects and for Project Gasoline are sufficient?

Mr. FUMICH. Sir, I should like to answer that question this way. Based on all the reports and comments and opinions within our own staff and from the contractors' people who are actually working on these projects they are happy with their present progress, and we have checked, and I think that I can say in all honesty in no case would additional money mean a shrinkage in the time element from the present work to projected future work.

Senator BYRD. As you know, I have been very interested in the Office of Coal Research. I was interested in its creation in the beginning and I have been desirous of helping wherever I could in this committee to get additional moneys for the Office as and where needed, and it is for this reason that I want to be sure that in your good judgment you do not feel that additional funding at this time would be advisable.

Mr. FUMICH. Sir, let me make a supplement to that. We also concur in the fact that you have been interested in the program and we appreciate it very much, sir.

Senator BYRD. Then is it clear that the programs would not suffer timewise or qualitywise, for the need of additional moneys over and above the budget estimate?

Mr. FUMICH. I think as far as our gasification projects are concerned, sir, that we have a balance there and that additional money in that field would not help us at this time.

Senator BYRD. And the same is true with regard to Project Gasoline?

Mr. FUMICH. Yes, sir.

COMMENDATION OF OFFICE OF COAL RESEARCH

Senator BYRD. Mr. Fumich, I want to compliment you on the excellent work that is being done by the Office of Coal Research. I share the view expressed earlier by Senator Mundt. I think that for an Office which has been in operation only 3½ years, and in view of the showing that has been made this far, even though you have had one or two projects which have not proved to be feasible, this certainly indicates the wisdom of the Congress in creating the Office and I think it indicates competence and excellent vision on the part of the people who are in the agency, and certainly it indicates competence on the part of those companies which have been selected to fulfill the contracts that have been let thus far.

I recognize the fact that you have not been in your present position during the 3½ years, but I think that you certainly indicate a very impressive mastery of the workings of the Office and the needs of the Office, and monetary expenditures, and so forth and I commend you highly.

I shall continue to watch with interest your progress and I certainly want to do what I can as we go along to improve the prospects of

success in the various programs which you have already activated and hope to activate in the future.

ADJOURNMENT OF SUBCOMMITTEE

Tomorrow this subcommittee will hear the budget request of the Indian Claims Commission and the Bureau of Indian Affairs. The committee will stand adjourned until 10 o'clock, Wednesday, February 24.

(Whereupon, at 1:30 p.m., Tuesday, February 23, 1965, the subcommittee adjourned until 10 a.m., Wednesday, February 24, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

WEDNESDAY, FEBRUARY 24, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Senators Hayden, Bible, Bartlett, Proxmire, Mundt, and Young.

INDIAN CLAIMS COMMISSION

STATEMENTS OF ARTHUR V. WATKINS, CHIEF COMMISSIONER; ACCOMPANIED BY JEAN R. HANNA ADMINISTRATIVE OFFICER

SALARIES AND EXPENSES

Chairman HAYDEN. The subcommittee will be in order.

The Indian Claims Commission proposes a budget of $347,000 for fiscal year 1966. This is $37,000 more than was appropriated to this Commission in fiscal year 1965. The justification for this request will be printed in the record.

(The justification referred to follows:)

INDIAN CLAIMS COMMISSION

PURPOSE STATEMENT

The Indian Claims Commission was organized on April 10, 1947, under the act approved August 13, 1946 (25 U.S.C. 70).

The duties of the Commission are to hear and determine all causes arising under section 2 of the act, up to and including August 13, 1946, on behalf of any Indian tribe, band, or other identifiable group of American Indians residing within the territorial limits of the United States. The act provides that the claims may be heard notwithstanding any statute of limitations or laches, but all other defenses shall be available to the United States.

Salaries and expenses

Appropriation 1964	$297,000
Appropriation 1965	310,000
Supplemental appropriation (proposed)	25,000
Total	335,000

SUMMARY OF INCREASE AND DECREASES, 1966

Personal services	+7,000
Personal benefits	+1,000
Travel	+1,000
Printing and reproduction	+1,000
Supplies and materials	+1,000
Equipment	+1,000
Total	+12,000
Budget estimate, 1966	347,000

Analysis by activities

Activities	Amount available 1964	Amount available 1965	Estimate 1966	Increase (+) or decrease (−)
Hearing and adjudication of Indian claims	$287,000	$310,000	$347,000	+$12,000
Supplemental appropriation (proposed)		25,000		
Unobligated balance no longer available	10,000			
Total	297,000	335,000	347,000	+12,000

REQUIREMENTS FOR FISCAL YEAR 1966

The estimate for funds needed to operate the Indian Claims Commission in fiscal year 1966 is $347,000.

JUSTIFICATION FOR PERSONAL SERVICES

The following summary table presents the essential facts with respect to this item.

	1965 estimate	1966 estimate	Estimated change in 1966 from 1965
1. Number of positions	22	22	0
2. Annual salary cost of permanent positions	$299,000	$306,000	+$7,000
Total personal services	299,000	306,000	+7,000

Increase in personal services and related benefits due to full-time financing of all positions at increased rate (Public Law 88–426).

DETAILED STATEMENT

12. Personal benefits.—Section 4(a) of the Civil Service Retirement Amendments of 1956 (70 Stat. (747)) requires agencies to match the 6½ percent contribution of employees. This also covers FICA, employees' group life insurance, and employees' group health contributions. This is a $1,000 increase due to salary increases (Public Law 88–426).

21. *Travel expense.*—The principal provision of the Indian Claims Commission Act requiring expenditures for travel by the Commission and members of its staff are contained in 25 U.S.C. 70p 709. The amount requested for travel is $6,000.

23. *Communications.*—$3,000 is requested to cover the cost of telephone facilities, long-distance calls, and postage.

24. *Printing and reproduction.*—The estimate for printing and reproduction for 1965 is $2,000, and is to cover the printing of stationery and envelopes, miscellaneous forms, and binding repairs to old books in use by the Commission and reproduction of the opinions rendered by the Commission.

25. *Other services.*—The amount of $2,000 is to cover the cost of maintenance of office machines, premiums on surety bond for certifying officers, and miscellaneous services by other agencies, including the Commission's pro rata share for emergency service in the Health Unit in the building in which we are located.

26. *Supplies and materials.*—$3,000 is requested and is to cover the cost of blank paper, jackets, folders, stencils, carbons, and miscellaneous office supplies.

31. *Equipment.*—The estimate for this year is $2,000 and is to cover the cost of additional file cases, incidental equipment as needed, and repairs to furniture.

INDIAN CLAIMS COMMISSION

Object classification

		1964 actual	1965 estimate	Estimated change in 1965 from 1964	1966 estimate	Estimated change in 1966 from 1965
11	Personnel compensations: Permanent positions	$258,000	$299,000	+$41,000	$306,000	+$7,000
12	Personal benefits	19,000	22,000	+3,000	+23,000	+1,000
21	Travel and transportation of persons	3,000	5,000	+2,000	+6,000	+1,000
23	Rent, communications, and utilities	2,000	3,000	+1,000	3,000	
24	Printing and reproduction		1,000	+1,000	2,000	+1,000
25	Other services	1,000	2,000	+1,000	2,000	
26	Supplies and materials	2,000	2,000		3,000	+1,000
31	Equipment	2,000	1,000	−1,000	2,000	+1,000
	Total obligations	287,000	335,000		347,000	
	Increase			+48,000		+12,000

STATEMENT OF COMMISSIONER WATKINS

Chairman HAYDEN. Mr. Commissioner, you may file your statement for the record or read it, as you prefer.

Commissioner WATKINS. I would prefer to read it.

Mr. Chairman and members of the committee, the Indian Claims Commission is satisfied with a proposed appropriation of $347,000 which was allowed by the Bureau of the Budget. While we have an approved ceiling of 22 employees, we do not have that many employees at the present time. We have been planning a heavy increase of activities by reason of the revolving loan fund which Congress authorized in 1963 but which was not activated with an appropriation until July 7, 1964. The committee will undoubtedly remember that this fund was authorized by Congress for the purpose of aiding impecunious Indian tribes in securing expert witnesses to help them prepare their cases and also to testify in their behalf. The processing of the loans by the Bureau of Indian Affairs has been rather difficult. The conditions laid down by the Loan Act made it necessary for the Indian Bureau to follow through with these same conditions in making the loans.

For instance, if the Indian tribes have funds on deposit with the United States or any other funds available to them, they must use their own money for their cases and are not eligible for a loan. It appears that in the past some Indian tribes have had money of their own but have refused to put up that money for expert witness fees. As you know, of course, the attorneys are on a strictly contingent fee basis.

I am sure the committee would like to know just what has been accomplished under the loan fund program up to this time. I submit herewith a copy of a statement furnished me by the Indian Bureau which shows in some detail how the loan processing is proceeding. I ask that this tabulation be inserted in the record at this point.

Chairman HAYDEN. That will be done.

(The tabulation referred to follows:)

STATUS OF LOANS FOR EXPERT ASSISTANCE

Pursuant to your request of February 16, the following information is submitted:

	Amount requested	Date of application	Date submitted	Status
I. Approved or disapproved:				
Tribe:				
Ottawa and Chippewa Indians of Michigan.	$28,500	Sept. 25, 1964	Oct. 1, 1964	Disapproved Dec. 12, 1964.
Sisseton and Wahpeton Sioux Tribe of North Dakota.	10,000	Oct. 19, 1964	Nov. 6, 1964	$3,500 approved Dec. 31, 1964.
Santee Sioux Tribe of Nebraska.	10,000	Nov. 5, 1964	Nov. 13, 1964	Do.
Chippewa Cree Tribe, Rocky Boy's Reservation, Montana.	15,000	Nov. 4, 1964	Nov. 30, 1964	$15,000 approved Feb. 8, 1965.
II. Pending:				
Standing Rock Sioux	39,609	Oct. 16, 1964	Nov. 17, 1964	Will be disapproved.
Yankton Sioux Tribe	105,000	Oct. 22, 1964	Nov. 13, 1964	Cleared for final action Feb. 1, 1965.
Santee Sioux Tribe of Nebraska.	8,505	Nov. 5, 1964	Nov. 17, 1964	
Washoe Tribe of the States of Nevada and California.	58,900	Nov. 6, 1964	do	Will be disapproved.
Papago Tribe	80,000	do	Nov. 25, 1964	Additional information requested. Received Jan. 11, 1965.
Lower Brule Sioux Tribe.	5,832	Oct. 28, 1964	Dec. 4, 1964	Will be disapproved.
Oglala Sioux Tribe	78,003	Nov. 18, 1964	Dec. 15, 1964	Received for final action Feb. 3, 1965.
Rosebud Sioux Tribe	58,563	Oct. 30, 1964	do	Received for final action Feb. 11, 1965.
Turtle Mountain Band of Chippewa Indians.	50,000	Nov. 23, 1964	Jan. 12, 1965	Referred to tribal operations Jan. 19, 1965.
Three Affiliated Tribes of Fort Berthold.	25,000	Dec. 28, 1964	Jan. 11, 1965	Received for final action Feb. 12, 1965.
Havasupai Tribe	60,000	Nov. 14, 1964	Feb. 9, 1965	Received in branch Feb. 11, 1965.
Sisseton and Wahpeton Sioux Tribe of South Dakota.	10,000	Feb. 5, 1965	Feb. 8, 1965	Received in branch Feb. 16, 1965.

E. E. WOOD,
Assistant Chief, Branch of Credit and Financing.

COMMISSION PROGRESS

Commissioner WATKINS. Another thing I am sure the committee is interested in is the progress, or lack of progress, which the Commission has made during the past few years. For purposes of showing what has been accomplished, I point out that as of August 15, 1959, the time that I became a member of the Commission, awards had been made to Indian tribes in the sum of $17,085,586.39. During the year following that, awards increased to $37,318,101.13. The Commission held its first meeting in April 1947, that is, after it had organized, so there was a period of some 11½ years that it had been in existence when I took over as Chief Commissioner on July 1, 1960. In the last 4½ years additional awards have been made in the sum of $117,883,472.29. I think that this shows that considerable progress has been made. Also, some claims have been dismissed during that same period, which would increase the total number of docket numbers that have been actually disposed of.

At this point I think it is only proper and fair to state that one of the reasons we have been able to make such an increase is our policy of encouraging compromise settlements, which was inaugurated shortly after I became a member of the Commission. For instance, during the past 12 months we have had 18 cases compromised.

One of the most important, and by far the largest, awards the Commission has entered to date was in the compromise settlement of the *California* case involving some 64 million acres of land set forth in 8 docket numbers. The compromise settlement was for $29,100,000. This case was reported to Congress during the past session and the money has been appropriated and is now on deposit in the Treasury of the United States to the credit of the California Indians.

We held a series of hearings with the Indians in California so that they would have an opportunity to express their views with respect to the settlement. A small minority appeared and objected to the settlement but by and large it was approved by the more than 40,000 Indians involved.

May I say I note the Indian Bureau is represented this morning, and I want to say that we had the finest cooperation from the Indian Bureau in the California hearings. The Indians were completely disorganized in that area. They had no one who could actually call meetings for the consideration of the compromise settlements.

Chairman HAYDEN. It was a very confused situation.

Commissioner WATKINS. It was. It was on appeal in the Court of Claims on the original issues and really not much progress had been made on the case. We were very happy that it could be settled on terms equitable to the Indians and fair to the United States.

Recently I was advised by counsel representing some of the Indian tribes and the Department of Justice which defends the United States in these law suits, that there was a fair possibility that more than half of the remaining cases pending before the Commission could be settled by compromise settlement. So with this prospect before us, we begin to see the possibility of ending the activities of the Commission within a reasonable length of time.

APPELLATE JURISDICTION OF COURT OF CLAIMS

We are not prepared at the moment to define what is reasonable. That will depend on the Court of Claims which reviews our cases on appeal and there are a lot of other matters that enter into a case of this kind.

Chairman HAYDEN: Have the courts sustained your actions?

Commissioner WATKINS. For the most part, yes. I think our batting average has been fairly good, but every now and then they reverse themselves or us and we have to start over again.

Chairman HAYDEN: Have they reduced the amount in any instances?

Commissioner WATKINS: No, I don't believe they have cut the amount. I think they have sent some cases back to us to add to them. I am not sure of that because I have not canvassed all the cases.

BUDGET INCREASES

The increase in the budget is largely justified on the basis that we had to take care of the increases of salaries for our employees.

Chairman HAYDEN: That was the justification solely?

Commissioner WATKINS: That and a few other items that came into the picture. Not very many. We run around about the same amount of money each year.

Chairman HAYDEN: We thank you for your appearance.

Commissioner WATKINS: Thank you.

WEDNESDAY, FEBRUARY 24, 1965.

BUREAU OF INDIAN AFFAIRS

STATEMENTS OF PHILLEO NASH, COMMISSIONER; JOHN O. CROW, DEPUTY COMMISSIONER; JAMES E. OFFICER, ASSOCIATE COMMISSIONER; FRED H. MASSEY, ASSISTANT COMMISSIONER, ADMINISTRATION; SELENE GIFFORD (MISS.), ASSISTANT COMMISSIONER, COMMUNITY SERVICES; E. REESEMAN FRYER, ASSISTANT COMMISSIONER, ECONOMIC DEVELOPMENT; A. O. ALLEN, ENGINEERING ADVISER; HILDEGARD THOMPSON (MRS.), CHIEF BRANCH OF EDUCATION; ROBERT J. TRIER, CHIEF, BRANCH OF ROADS; DONALD G. KETHRO, GENERAL ENGINEER; E. A. BLOUT, BUREAU OF RECLAMATION; FRANCIS M. WILES, CHIEF, BRANCH OF BUDGET; AND SIDNEY D. LARSON, DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR.

1966 BUDGET ESTIMATE

Chairman HAYDEN: We will now hear from the Bureau of Indian Affairs.

There will be placed in the record a comparative statement of fiscal year 1965 appropriations and the budget estimate for fiscal year 1966 for the Bureau of Indian Affairs. The Bureau estimates its needs in fiscal year 1966 at $240,290,000, an increase of $17,574,583 over the amount appropriated last fiscal year.

(The statement referred to follows:)

Comparative statement of 1965 appropriations and 1966 budget estimate

Appropriation and activity	Fiscal year 1965			Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
	Total appropriation	Pay cost supplemental	Amount available		
Education and welfare services:					
1. Educational assistance, facilities, and services	$68,882,000	$1,217,000	$70,099,000	$76,300,000	+$6,201,000
2. Welfare and guidance services	12,214,500	94,000	12,308,500	13,434,000	+1,125,500
3. Relocation and adult vocational training	12,092,000	113,000	12,205,000	14,426,000	+2,221,000
4. Maintaining law and order	2,680,000	73,000	2,753,000	2,735,000	−18,000
Total	95,868,500	1,497,000	97,365,500	106,895,000	+9,529,500
Resources management:					
1. Forest and range lands	5,124,200	125,000	5,249,200	5,178,000	−71,200
2. Fire suppression	140,000	----------	140,000	140,000	----------
3. Agricultural and industrial assistance	6,325,500	149,300	6,474,800	7,248,000	+773,200
4. Soil and moisture conservation	5,408,000	131,000	5,539,000	5,487,000	−52,000
5. Maintenance of roads	3,595,600	17,000	3,612,600	3,799,000	+186,400
6. Development of Indian arts and crafts	318,000	7,600	325,600	365,000	+39,400
7. Management of Indian trust property	6,468,000	189,600	6,657,600	6,661,000	+3,400
8. Repair and maintenance of buildings and utilities	11,696,700	102,600	11,799,300	12,765,000	+965,700
9. Operation, repair, and maintenance of Indian irrigation systems	1,314,000	1,900	1,315,900	1,313,000	−2,900
Total	40,390,000	724,000	41,114,000	42,956,000	+1,842,000
Construction:					
1. Buildings and utilities	40,513,000	----------	40,513,000	58,822,000	+18,309,000
2. Irrigation systems	11,496,000	----------	11,496,000	10,153,000	−1,343,000
Total	52,009,000	----------	52,009,000	68,975,000	+16,966,000
Road construction (liquidation of contract authorization):					
1. Federal-aid highway roads	17,000,000	----------	17,000,000	16,900,000	−100,000
General administrative expenses:					
1. Departmental office	1,258,000	62,000	1,320,000	1,320,000	----------
2. Field offices	3,073,000	127,000	3,200,000	3,200,000	----------
Total	4,331,000	189,000	4,520,000	4,520,000	----------
Revolving fund for loans	900,000	----------	900,000	----------	−900,000
Menominee educational grants	88,000	----------	88,000	44,000	−44,000
Payment to the Seneca Nation	12,128,917	----------	12,128,917	----------	−12,128,917
Grand total	222,715,417	2,410,000	225,125,417	240,290,000	+15,164,583

STATEMENT OF COMMISSIONER NASH

Chairman HAYDEN. Mr. Commissioner, you may file your written statement for the record if you care to do so, and summarize it for the committee.

Commissioner NASH. Yes, Mr. Chairman. I will do it that way. The prepared statement I will not attempt to read. I would like to comment very briefly about it.

(The statement referred to follows:)

BUDGET REQUEST, 1966

Mr. Chairman, and members of the committee, I appreciate the opportunity of again appearing before this committee to present the request of the Bureau of Indian Affairs for appropriations for fiscal year 1966.

First, Mr. Chairman, if I may, I should like to present a brief summary about the work of the Bureau of Indian Affairs.

We are a modern service bureau, serving about 380,000 Indian persons and Alaska natives who live on or near reservations in 25 States. The services we perform are basically of three types:

(1) We provide the essential services of local government where local governments do not provide them and the tribal governments cannot afford to provide them. In such areas we may operate schools, build roads, provide for the needy, and preserve law and order.

(2) The United States is the trustee for 50 million acres of tribal and individual land, and the Bureau is the executor of this trust. As trustees, we strive to help the Indian owners manage their property in such a way as to provide maximum income, employment, and training for Indian people. Our economic development program includes forestry, irrigation, farming and ranching, mining, power, real estate management, industrial development, commercial recreation, credit and financing, and may other forms of economic activity.

(3) The American people have a strong conscience about the first Americans. In an effort to right the wrongs of the past century, the Congress has authorized many programs of social and economic development intended to raise the standard of living of American Indians and bring them into the mainstream of American society. Many of these programs are of recent origin and it is these programs that are particularly popular with the Indian people and on which we are concentrating at the present time.

Within the framework of congressional directives, the basic administrative guideline of the Bureau of Indian Affairs is to be found in the report of the task force assembled by Secretary of the Interior Udall in 1961. The goals stated in that report are:

(1) Maximum Indian economic self-sufficiency.

(2) Full participation in American life.

(3) Equal citizenship privileges and responsibilities for Indians.

To reach these objectives we emphasize developmental programs above the purely custodial functions of trusteeship. Our overall purpose is to educate Indians to perform skilled jobs, and at the same time to stimulate the creation of jobs to be found. The increasing Indian population and the educational gap between Indians and the general population are factors strongly affecting Bureau programs. Every program in the Bureau is to some degree oriented around education as a means of economic and social advance.

The Bureau also recognizes that some Indians, like some non-Indians, wish to work close to home, while others are attracted by the greater opportunities of city life. Our programs, therefore, are designed to help the individual seek and find his opportunity wherever it may be.

Some Indian areas and lands are rich in resources, but are underdeveloped. Others are among the most poverty-ridden, distressed areas in the country with diminishing local opportunity and much unemployment.

Generally, our approach to problems in the Indian areas is to look first to State, local, and tribal governments for the services of which each is capable; and, to fill in with Bureau services where local or tribal government is unable to meet essential needs.

And now, Mr. Chairman, I should like to speak about the Bureau of Indian Affairs request for appropriations for fiscal year 1966.

Our request for fiscal year 1966 totals $240,290,000, an increase of $15,164,583 over the appropriation for fiscal year 1965 of $225,125,417. A large portion of the increases we are requesting are to provide for expanding education programs and constructing school facilities.

For the appropriation item "Education and welfare services," the estimate is $106,895,000, a program increase of $9,529,500. Increases are included for additional costs to public schools educating Indian children under Johnson-O'Malley plans; increased enrollment in Federal facilities; increased general assistance and child welfare caseloads, notably in Indian communities located in economically depressed areas; and to provide for an increase in the number of Indian adults receiving vocational training.

For the "Resources management" appropriation item, we are requesting $42,956,000, a program increase of $1,842,000. Increases are included for improving forest stands and increasing timber sales, expanding the reindeer industry in Alaska; broadening State extension contracts, providing increased credit services to individual Indians and tribes, preparing tribal rolls and assisting tribes in making use of judgment funds, providing aid to the increasing number of tribal housing authorities, upgrading maintenance on 300 miles of schoolbus routes, increasing assistance to Indians in managing real property, and the operation and maintenance of newly constructed Federal facilities.

The request for "Construction" is $68,975,000 as compared with $52,009,000 for fiscal year 1965. Of the $58,822,000 being requested for the construction of

buildings and utilities, $38,767,000 is needed to provide school facilities for the rapidly expanding Indian high school population. The balance of the building and utility funds are needed primarily to replace inadequate and obsolete educational facilities. This appropriation item also includes $6,500,000 for continuing construction of the Navajo Indian irrigation project, and $3,653,000 for the continuation of work on other Indian irrigation projects.

The estimate for "Road Construction" is $16,900,000. These funds will be used to liquidate obligations incurred under the Federal-Aid Highway Act.

We are requesting $4,520,000 for "General Administrative Expenses," this amount will finance the program at the same level as fiscal year 1965.

The estimates also include $44,000 for payment to the State of Wisconsin for joint school district costs for the county of Menominee. These funds are requested to lessen the impact of the termination of Federal services to the Menominee Tribe. Congress provided in 1962 that a total of $660,000 be paid to the State over a 5-year period, on a downward-escalating scale. The fiscal 1966 payment as proposed will be the last.

There is one other item, Mr. Chairman. In its report last year this committee requested the Bureau to make a study of our Bordertown dormitory program. This study was made and we have submitted the report to this committee.

That concludes my statement, Mr. Chairman. I shall be happy to discuss our programs in detail with the Committee and to answer any questions the committee may have.

Education, Training, and Economic Development

Commissioner Nash. We are asking for increases, but only those that are essential to the carrying on of our functions of education, of training, and of economic development. There are many more things, Mr. Chairman, that we would like to be able to do and which we think are very essential to the fulfillment of our mission, and the rise in the standard of living on the reservations, which are not included in this budget.

I would also like to say that this I think is either the third or the fourth time that I have appeared before this committee and, on behalf of the Bureau and the effort that we are trying to make for the economic development of the Indian people, I want to say that we are appreciative of the work and the recommendations of this committee and the very generous treatment that the programs of the Bureau have had at the hands of this committee.

We are asking for fiscal year 1966 a totalof $240,290,000, an increase of $15,164,583 over the fiscal year 1965 appropriation. Under "Education and Welfare Services" our estimate is $106,895,000, a program increase of 9,529,500. Under the "Resources management" appropriation item we are requesting $42,956,000, a program increase of $1,842,000. The request for construction, Mr. Chairman, is $68,975,000, as compared with $52,009,000 for fiscal year 1965.

Construction

The principal item in this activity is $58,822,000 for the construction of buildings. Of this, $38,767,000 is needed to provide school facilities principally for the rapidly expanding Indian high school population. We are now, Mr. Chairman, receiving the benefits of the intensive elementary school building program of the past few years and we must anticipate the entry of large numbers of Indian elementary school graduates into high school and prepare for it so we will not again be caught with a shortage of facilities as we were a decade ago.

There is also included in this item $6.5 million for continuing construction of the Navajo Indian irrigation project and $3.6 million for continuation of work on other Indian irrigation projects.

The estimate for road construction, Mr. Chairman, is $16.9 million. These funds will be used to liquidate the obligations incurred under the Federal-Aid Highway Act. We have also requested $4.5 million for "General administrative expenses." This amount will finance that program at the same level as fiscal year 1965.

Joint School District Costs

We also include $44,000 for payment to the State of Wisconsin for joint school district costs for the county of Menominee. These funds are requested to lessen the impact of the termination of Federal services to the Menominee Tribe. The Congress provided in 1962 a total of $660,000 be paid to the State over a 5-year period on a downward escalating scale. This payment as appropriated will be the last payment under this program.

Improved Manpower Utilization and Program Adjustments

I have two other items I would like to mention, Mr. Chairman. Throughout the justifications the chairman will note a statement under each activity which says that there is a reduction of x dollars due to improved manpower utilization and program adjustments. If I could, Mr. Chairman, I would like to explain at this point so that perhaps we won't have to repeat each time. Pursuant to the President's desires for more efficient manpower utilization, we have committed ourselves to a reduction over 2 fiscal years of 450 intermediate supervisory positions. We have agreed to do a part of this in the balance of this fiscal year, so this July 1965, $1 million will be taken off our base and 1 fiscal year later $2 million more, so that the total savings to the Government over the 2-year period will be $3 million and 450 positions. We have proportioned this equally among the various activities, but in order to accomplish this manpower reduction without hurting our program we would like to ask for a maximum of flexibility in apportioning the savings and the necessary manpower cuts across activities within appropriation lines. And that is why I am making this statement for the record at this time. We hope that the committee will be generous in giving us the flexibility that is necessary to reduce 450 positions without cutting programs.

Bordertown Dormitory Program Study

This Committee, 1 year ago Mr. Chairman, asked us to report on the Bordertown dormitory program. We have complied with the committee's request and have prepared such a report and have submitted copies to the committee in advance of this meeting. This is all I have to say at this time, sir.

Chairman Hayden. I have copies of the report. You may, if you will, summarize it for the committee at this time.

Commissioner Nash. Yes, sir. In general the report finds that the Bordertown program is an effective one for those selected students who are especially capable of taking advantage of it. We recommend the continuation of the program because we are committed to the

public school districts by 20-year agreements and because the investigation showed that there was a considerable element of success in the program.

But this study also revealed some defects in the program from the standpoint of mass education of Navajo youth. We felt we should limit this study to the Navajo Bordertown program because it was about as much as we could study in depth in the time that we had. I personally am very glad that the committee asked us to make this study because it has been a valuable experience for me and the information gathered is proving most helpful in the Bureau.

NEGATIVE ELEMENTS DISCLOSED BY STUDY

Now, the negative elements that were disclosed are these: The participation by Navajo high school youngsters in the Bordertown community schools, the public schools, is not as extensive as one might think. We started out with the assumption that if you throw people together they will associate freely and will speak English freely and will get interested in school activities. We found in our study a good deal of huddling and Navajo speaking and self-separation within the school framework.

Chairman HAYDEN. In other words, they talked among themselves; they didn't talk with the other children.

Commissioner NASH. Yes, sir; that is what we found. On the playground and in the classroom and in school activities, in athletics, student governments, and that sort of thing, we found much less participation than we think is desirable and I believe the public schools think is desirable.

In addition to that, it is clear that there is a special educational need of Navajo young people of high school age. The fact that they do not speak English in the home means that they come with very much reduced language skills. We did not find that the public schools in the Bordertowns were devoting either the time or the money or the teaching skill to the provision of special programs in view of these special needs. We think this ought to be done and I hope that the way is open for us to work with the public schools in improving this side of their program.

Chairman HAYDEN. You will direct their immediate attention to this matter.

Commissioner NASH. Yes, sir. We received very good cooperation from the public schools in making the study. They opened their classrooms and records to us and we are very appreciative of that. We also found some failings on our own side, of course. Our dormitories in the Bordertown program are very inadequate as to size and staff, and the facilities are primitive to say the least. They were built during a crash era and they are not serving their purpose today.

In addition to that, the separation of the domitory and after-hour activities from the classroom and school activities is not a good thing, and the amount of cooperation and understanding between the dormitory superintendents and the school principals and staff is considerably less than the investigating team thought was desirable.

COST RELATED TO ACCOMPLISHMENTS

As to costs, these were analyzed rather carefully. Generally speaking the costs of a boarding school program and a Bordertown program are about the same. Actually they are within 1 percent of each other. But for the amount of money that the Bordertown program is costing, we think there ought to be a higher quality of education more carefully attuned to the special needs of the Navajo young people.

ANTICIPATION OF LARGE INCREASE IN NAVAJO HIGH SCHOOL STUDENTS

Now in addition to this, Mr. Chairman, you have a very big problem coming up which we do not think either the Bordertown schools or the public high schools on the reservation are going to be able to meet because of the scope of it. We anticipate a need for 7,000 Navajo high school seats by 1970. Now this is a good many times the number of children that are in any one high school segment.

Whether you are talking about the public high schools with the associated dormitories, the on-reservation high schools, the religious schools, or whatever, we don't think there is any one of these entities which is capable of expanding 7,000 places within the next few years. Yet we are satisfied that that is going to be the very desirable by-product of our elementary education program that has been developed over the past decade.

Accordingly, we have put in this justification and recommend also in the Bordertown study that while all phases of the Navajo high school program should be advanced and improved, that there will still be a need for Federal boarding high school facilities of a substantial size and therefore we propose the construction of 4,000 seats for a net gain of 3,000 in this fiscal year and 1,000 in each fiscal year thereafter through 1970, which is as far as we think our projections are reliable.

DISPARITY IN ACADEMIC ATTAINMENT IN FEDERAL HIGH SCHOOLS IN COMPARISON WITH PUBLIC SCHOOLS

Chairman HAYDEN. Appendix VIII or your report indicates that Navajo pupils in the Federal high schools are academically behind the Navajos in public schools. This may be explained by the fact that the best students are sent to public schools. But the question still remains, in which system of education do they learn the most?

Would you have a study made showing the gain in academic achievement of the Indian during his public high school years compared to what Indians learn in the same span of time in Federal schools?

Commissioner NASH. Yes, sir. We will make such a study. I might comment and say that we would have done that in this study except that you, of course, cannot do it in 1 year. We came as close to it as we could by scoring 9th graders and 12th graders in the same school. Of course this is in the same year so you are dealing with two different sets of people. We will initiate the study that the chairman asks for beginning with ninth graders who have been tested and continuing through to their graduation or whatever happens to them in the course of the next few years.

ECONOMIC OPPORTUNITY ACT

Chairman HAYDEN. Would you explain briefly the activities of the Bureau of Indian Affairs under the Economic Opportunity Act?

Commissioner NASH. Yes, sir. We have been very strong supporters of the Economic Opportunity Act and of the Office of Economic Opportunity which is administering the act. We participated in the development of the legislation in the planning stages and we have maintained very close liaison with the Office of Economic Opportunity. Under every title, we have people, who are specialists in our Bureau, who have close liaison with opposite numbers in the Office of Economic Opportunity.

I have designated the Deputy Assistant Commissioner for Community Services, Mr. Finale, as the head of our task force on economic opportunity. He has two assistants who are specializing in various aspects of the program. This is in addition to the departmental support of the program from the Secretary's Office. Our principal concern has been to make certain that Indian people, in the Indian reservation areas, would be represented in the conservation camps. The first one to be opened in the West is at Winslow, Ariz., just off the Navajo Reservation. It has been activated. I went out there the first weekend and looked it over and had dinner with the first 10 enrollees which was a very interesting experience.

We are very hopeful that this program will result in additional work and training opportunities for Indian young men and women under the Bureau's part of the program and that there will be benefits to the resource development of the reservations. It has been slow in coming along and we are dealing right now with what we think is a very difficult problem and that is the decision of the Office of Economic Opportunity that Indian preference will not be given in conservation camps on Indian reservations. We think this is a wrong and unfortunate decision and we are appealing it.

Under the community action programs, we have helped the leaders of the Indian communities to develop and submit programs directly to the Office of Economic Opportunity. Thirty-one have been submitted and three have been approved. My latest information is that none of the three had been funded but that they will be very shortly.

EFFECT ON BUREAU ACTIVITIES OF AVAILABILITY OF ECONOMIC OPPORTUNITY FUNDS

Chairman HAYDEN. I presume that the funds available to you for operations under this act are contained in a separate budget submission. However, would you please outline for the committee the effect that availability of these funds and the necessity to perform operations under the Economic Opportunity Act has had on the regularly scheduled activities of the Bureau of Indian Affairs?

Commissioner NASH. Yes, sir; we will submit that for the record. I would like to say, while we are making the oral record here, that the benefits that flow to Indian people from the Economic Opportunity Act are very different from those that come about as the direct result of the Bureau of Indian Affairs activities. Thus public school children—Indian children—will receive benefits and young people perhaps will be reached and will have a chance to get into neighborhood youth corps and things of that kind that we do not.

The activities of the conservation camps will probably cost us money. So that I do not think that there will be much overlap, but the benefits are so important to the Indian people that we think we should make our contribution to it.

(The information referred to follows:)

Indian communities are submitting programs to the various Federal agencies operating programs under the titles of the Economic Opportunity Act. If these programs are approved, the funding will be from funds appropriated under that act.

None of these programs will replace or duplicate programs presently operated by the Bureau of Indian Affairs, or for which funds have been appropriated to the BIA. These programs will be supplemental to BIA programs, and will offer additional services, but will not be substituted for existing programs.

DUPLICATION OF WORK UNDER THE ECONOMIC OPPORTUNITY ACT

Chairman HAYDEN. Will any of the work done by the Job Corps Centers displace work which you otherwise would have accomplished in your regularly planned program?

Commissioner NASH. No, sir; I do not believe so. If there is anything, it would be an adjunct rather than a duplication.

EDUCATION AND WELFARE SERVICES

Chairman HAYDEN. There will be placed in the record your justifications for a request of $106,895,000 in fiscal year 1966 for "Education and welfare services." This is $11,026,500 more than was appropriated in fiscal year 1965.

(The justification referred to follows:)

EDUCATION AND WELFARE SERVICES

EDUCATION, WELFARE, RELOCATION, AND LAW AND ORDER

The Bureau provides services and assists the States in furnishing services to Indians in the United States including the natives of Alaska in the fields of education, welfare, relocation, and law and order. Progress in education is basic to successful achievement of overall Bureau programs.

Education provides the base of understanding and skills that facilitates Indian acceptance of ideas and programs leading them to full assumption of citizenship responsibilities. In the last few years the education program has been broadened to include adults as well as children of school age. Indian children attend public, Federal, private, and mission schools. In 1964 there were 132,654 Indian pupils, age 6 to 18 inclusive, enrolled in school, an increase of 9 percent over the year before. In addition, 9,927 Indian pupils, under 6 and over 18, were enrolled in school. Funds are requested for fiscal year 1966 to provide educational services for 4,335 additional pupils in boarding schools, approximately 180 additional pupils in 6 additional day school units, and for the Federal Government's share of the increased costs and increased pupil load in public schools enrolling Indian children.

Wherever facilities are available to meet their needs Indians are enrolled in local public schools. The Bureau assists in financing some districts enrolling Indian pupils eligible for payment under the Johnson-O'Malley Act. When school districts educating Indian children are eligible for Federal aid under Public Law 874, 81st Congress (64 Stat. 1100), as amended, supplemental aid under the Johnson-O'Malley program is limited to meeting educational problems under extraordinary or exceptional circumstances.

When public school opportunities are not available, the Bureau operates schools for Indian children. In 1964 the Bureau operated 263 schools, enrolling 46,142 pupils and 19 dormitories housing 4,147 pupils attending public schools. The primary objective of the schools operated for Indian children is to prepare them for successful living. In Federal schools the children develop basic academic

skills, acquire an understanding of the social and economic world, learn improved standards of living, follow practices which assure optimum health, acquire vocational training to qualify for gainful employment, and obtain sufficient education to enter special schools and institutions of higher learning. The schools provided by the Federal Government for Indian children meet the instructional standards required by the States in which they operate and all secondary schools are accredited so that graduates may enter college on the same basis as public school graduates. In addition to the operation of Federal schools for eligible Indian children, the Bureau conducts a limited educational program for adult reservation Indians. In 1964, 183 communities were served by this program. Courses are planned to meet specific needs of individuals and community groups and range from the most elementary reading and writing to community problems, business skills, and citizenship training.

The Bureau's welfare program provides general assistance, child welfare, and other necessary social services to Indians for whom such assistance and services are not available through State or county welfare programs. An average monthly caseload of 19,500 persons is anticipated for 1966, an increase of 800 over 1965; and child welfare care for 2,800 children, an increase of 100 over 1965.

The relocation program assists Indians from reservations to settle and secure permanent employment in non-Indian communities, and assists in a program of industrial development on or near reservations to provide local job opportunities.

The act of August 3, 1956 (70 Stat. 986) as amended, authorizes a program of adult vocational training and education in the amount of $12 million annually. This program was initiated in 1958 on a limited basis. For 1966, we are requesting $11,429,000 which will provide for approximately 3,421 institutional trainees and 2,000 on-the-job trainees.

Police services and tribal court operations are financed on Indian reservations, and special officers direct enforcement of Federal law. Failure or lack of a program to maintain order on the reservations jeopardizes or renders impossible the accomplishment of other Bureau programs.

Appropriation, 1964	$89,235,250
Total appropriation, 1964	89,235,250
Transferred to "Operating expenses, Public Building Service," General Services Administration	−17,574
Total available, 1964	89,217,676
Appropriation, 1965	95,868,500
Pay cost supplemental	1,497,000
Total appropriation, 1965	97,365,500
Total available, 1965	97,365,500

SUMMARY OF INCREASES AND DECREASES, 1966

Educational assistance, facilities, and services:	
Assistance to pupils in non-Federal schools	1,000,000
Operation of additional Federal school facilities	5,480,000
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−240,000
Transferred to "Resources management" appropriation, Bureau of Indian Affairs	−39,000
Total	6,201,000
Welfare and guidance services:	
Direct welfare assistance	750,000
Social services	239,000
Welfare housing	500,000
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−43,000
Nonrecurring item due to Blackfeet flood disaster	−320,500
Total	1,125,500

Relocation and adult vocational training:	
To provide for additional trainees in relocation and adult vocational training	2,290,000
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−69,000
Total	2,221,000
Maintaining law and order: Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−18,000
Net increase, 1966	+9,529,500
Budget estimate, 1966	106,895,000

Analysis by activity

Activity	Fiscal year 1964 amount available	Fiscal year 1965		
		Total appropriation	Pay cost supplemental	Amount available
1. Educational assistance, facilities, and services	$66,044,134	$68,882,000	$1,217,000	$70,099,000
2. Welfare and guidance services	11,379,921	12,214,500	94,000	12,308,500
3. Relocation and adult vocational training	9,272,240	12,092,000	113,000	12,205,000
4. Maintaining law and order	2,302,719	2,680,000	73,000	2,753,000
Unobligated balance lapsing	218,662			
Total	89,217,676	95,868,500	1,497,000	97,365,500

Analysis by activity

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Educational assistance, facilities, and services	$66,044,134	$70,099,000	$76,300,000	+$6,201,000
2. Welfare and guidance services	11,379,921	12,308,500	13,434,000	+1,125,500
3. Relocation and adult vocational training	9,272,240	12,205,000	14,426,000	+2,221,000
4. Maintaining law and order	2,302,719	2,753,000	2,735,000	−18,000
Unobligated balance lapsing	218,662			
Total	89,217,676	97,365,500	106,895,000	+9,529,500

1. EDUCATIONAL ASSISTANCE, FACILITIES, AND SERVICES

Analysis by subactivities

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
A. Assistance to pupils in non-Federal schools:	$8,296,802	$9,054,000	$10,054,000	+$1,000,000
1. Public schools:				
(a) Navajo peripheral	1,278,519	1,110,251	1,300,000	+189,749
(b) Other	6,145,157	6,787,749	7,348,000	+560,251
2. Special aids	9,776	6,000	6,000	
3. Higher education	863,350	1,150,000	1,400,000	+250,000
B. Federal facilities:	56,739,043	59,944,379	65,145,379	+5,201,000
1. Boarding schools	41,658,587	44,338,879	49,583,879	+5,245,000
(Number pupils)	(34,026)	(36,745)	(41,080)	+(4,335)
2. Day schools	11,678,275	12,495,307	12,620,307	+125,000
(Number pupils)	(16,263)	(18,030)	(18,210)	+(180)
(Number units)	(576)	(601)	(607)	+(6)
3. Special services:	(2,487,131)	(2,160,193)	(1,991,193)	−(169,000)
(a) Program direction	1,700,781	1,346,193	1,216,193	−130,000
(b) Transportation of boarding school students	746,443	775,000	775,000	
(c) Museum	39,907	39,000		−39,000
4. Summer programs	915,050	950,000	950,000	
C. Adult education	1,008,289	1,100,621	1,100,621	
Total	66,044,134	70,099,000	76,300,000	+6,201,000

The estimate of $76,300,000 is an increase of $6,201,000 consisting of:

(1) A decrease of $240,000 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $6,441,000 for program operation.

A. Assistance to pupils in non-Federal schools

The estimate of $10,054,000 is an increase of $1 million over 1965.

Need for increase.—The increase of $1 million includes $750,000 to cover the Bureau's share under State Johnson-O'Malley plans for the increased enrollment and additional costs in public schools.

Plan of work.—This item covers subactivities as follows:

(1) Public schools: This item provides funds for the Johnson-O'Malley program which permits the Bureau to cooperate with States and local school districts in the education of Indian children. Local public schools are assisted with Johnson-O'Malley funds when the tax-free status of Indian lands within the boundaries of the school district create unmanageable financial problems after all other financial resources to the district have been exhausted. Assistance is provided in accordance with formal State or district plans and at contracting time funds are adjusted to meet the exact amounts needed to finance each plan.

Prior to 1959 local public schools were ineligible for entitlement for Indian pupils under Public Law 874, 81st Congress (64 Stat. 1100) administered by the Health, Education, and Welfare Department. The act of August 12, 1958, amended Public Law 874 so that school districts educating Indian children may now receive payments for Indian children on the same basis as for other federally affected children. Bureau efforts are carefully coordinated with the Office of Education in the Department of Health, Education, and Welfare to insure no duplication of assistance for the same service. Public Law 874 requires a 3-percent impact and a minimum average daily attendance of 10 federally connected children to qualify. Some public schools enrolling Indian children do not qualify because of this provision. Johnson-O'Malley funds are used in these instances. Other public schools located on Indian reservations with little or no local tax resources are not able to operate at acceptable State standards without additonal assistance over and above the funds they receive from State aids and their Public Law 874 entitlements. Johnson-O'Malley assistance is used to supplement these other available funds to permit operation at adequate State

standards. Johnson-O'Malley aids are limited to financing needs under these and other extraordinary and exceptional circumstances, after all other aids to the district have been fully used.

Increased enrollment and increased education costs account for increased need of assistance from the Bureau under the Johnson-O'Malley program. The Bureau must be in a position to meet justifiable assistance to public schools enrolling Indian children to insure their continued enrollment in terms of today's numbers and increasing costs.

The Bureau meets the full per capita costs for the education of Navajo pupils domiciled in Federal dormitories and attending out-of-district public schools.

The following tables list the Johnson-O'Malley education contracts:

(a) *Navajo peripheral*

	1964 amount	1965 amount	1966 amount	Change, amount
Total amount	1,278,519	$1,110,251	$1,300,000	+$189,749
Total number of pupils	(2,406)	(2,355)	(2,355)	
Arizona:				
Flagstaff	154,753	126,900	150,900	+24,000
Number of pupils	(327)	(300)	(300)	
Holbrook	224,014	199,780	233,380	+33,600
Number of pupils	(422)	(420)	(420)	
Snowflake	142,423	105,471	124,671	+19,200
Number of pupils	(210)	(240)	(240)	
Winslow	135,800	120,900	144,900	+24,000
Number of pupils	(299)	(300)	(300)	
New Mexico:				
Albuquerque	184,543	165,680	193,680	+28,000
Number of pupils	(339)	(350)	(350)	
Aztec	72,698	72,153	81,753	+9,600
Number of pupils	(121)	(120)	(120)	
Manuelito Hall	289,008	256,500	297,849	+41,349
Number of pupils	(558)	(500)	(500)	
Utah:				
Richfield	75,280	62,867	72,867	+10,000
Number of pupils	(130)	(125)	(125)	

(b) *Other*

State and district	1964 amount	1965 amount	1966 amount	Change, amount
Total	$6,145,157	$6,787,749	$7,348,000	+$560,251
Aberdeen:				
Nebraska State	169,000	170,000	170,000	
North Dakota State	200,000	200,000	200,000	
South Dakota State	501,000	500,000	510,000	+10,000
Minneapolis:				
Minnesota State	200,000	200,000	200,000	
Wisconsin State	125,000	125,000	125,000	
Iowa district	32,959	32,959	32,959	
Billings:				
Montana State	36,016	100,000	100,000	
Wyoming State	22,045	18,000	18,000	
Gallup:				
New Mexico State	1,111,074	1,225,000	1,225,000	
Colorado district	112,642	110,927	110,927	
Juneau: Alaska State	599,441	610,341	610,341	
Muskogee: Oklahoma State	428,000	460,000	500,000	+40,000
Anadarko: Kansas districts	12,300	10,000	10,000	
Phoenix:				
Arizona State	2,350,680	2,771,522	3,236,522	+465,000
Nevada State	60,000	60,000	80,000	+20,000
Utah district	5,000			
Oshrin Hospital		4,000	4,000	
Portland:				
Idaho State	115,000	115,000	140,251	+25,251
Washington State	65,000	75,000	75,000	

(2) Special aids: This item provides lunches for Seminole children in Florida.

(3) Higher education: An increase of $250,000 is requested for grants to Indian college students. Bureau scholarship funds provide assistance for students who cannot qualify for other types of scholarship aid and supplement partial aids students received from other sources. This item provides grants to 1,400 college students. In 1966, the average grant will be $1,000 per student. The Bureau funds, together with funds provided by private and public organizations, various schools, some States, tribal groups, and Federal and tribal loans, assist Indian young people to attend schools of higher learning who would be unable to attend without assistance. In 1964, 39 tribes provided grants totaling over $800,000, and other non-Federal sources provided $260,000 for scholarships. The number of Indian high school graduates is increasing each year as is the percentage of high school graduates who want to go to college.

B. Federal facilities

The estimate of $65,145,379 is a net increase of $5,201,000 over 1965.

Need for increase.—The increase consists of—

(1) $5,355,000 in boarding schools for increased enrollment of 4,335 pupils.

(2) $125,000 in day schools for increased enrollment in six additional day school units.

(3) These increases are offset by a reduction of $39,000 in program direction resulting from the transfer of the museum subactivity to the resources management appropriation.

Plan of work.—An analysis of the item by subactivity follows:

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(1) Boarding schools	$41,658,587	$44,338,879	$49,583,879	+$5,245,000
Number of pupils	(34,026)	(36,745)	(41,080)	(+4,335)
(2) Day schools	11,678,275	12,495,307	12,620,307	+125,000
Number of pupils	(16,263)	[1] (18,030)	[1] (18,210)	[1] (+180)
(3) Special services	2,487,131	2,160,193	1,991,193	−169,000
(a) Program direction	1,700,781	1,346,193	1,216,193	−130,000
(b) Transportation of boarding school students	746,443	775,000	775,000	
(c) Museums	39,907	39,000		−39,000
(4) Summer programs	915,050	950,000	950,000	
Total	56,739,043	59,944,379	65,145,379	+5,201,000
Total number of pupils	(50,289)	(54,775)	(59,290)	(+4,515)

[1] Represents full enrollment of capacity of added facilities.

(1) Boarding schools: This subactivity is analyzed as follows:

Type of operation	Number of pupils			Increase
	1964	1965	1966	
Boarding schools	29,879	32,759	37,094	4,335
Dormitory only operations	4,147	3,986	3,986	
Total	34,026	36,745	41,080	4,335

	1964		1965		1966, number of units	Increase, number of units
	Number of units	Number of pupils	Number of units	Number of pupils		
(2) Day schools	576	16,263	601	18,030	607	6

(3) Special services:

(*a*) Program direction: This item provides for the salaries and expenses of the education employees rendering field supervisory service as well as the education personnel in the central office. These education specialists plan the overall academic and vocational program for Federal Indian schools and in cooperation with State and local officials develop plans for increased enrollment of Indian pupils in the public school system.

(*b*) Transportation of boarding school students: This item provides for plane, bus, and rail fares and incidental expenses of transporting pupils from their homes to and from boarding schools.

C. Adult education

The estimate of $1,101,451 offers general education instruction to adults where the need is especially acute because the Indians have missed the advantage of education in their youth. It provides a type of training which meets the needs and abilities of the individual Indians as citizens. The program ranges in nature from instruction in basic arithmetic and language skills to continuation of elementary and high school education; instruction and assistance to increase participation in local community organizations; informing Indian parents of their role and responsibilities in the education of their children and strengthening their participation in parent-teacher activities.

STATUS OF PROGRAM

Public school education.—There has been an increase annually in the number of Indian children receiving their education in public schools in the States of their residence. States have been helped to assume this responsibility through the Johnson-O'Malley assistance provided by the Bureau of Indian Affairs, combined more recently with the Public Law 874 (64 Stat. 1100) assistance provided by the Office of Education, Department of Health, Education, and Welfare. Bureau aids compensate State school systems for additional or unusual costs created by the enrollment in their systems of large numbers of Indian children. Through the combined efforts of local, State, and Federal aid programs, including Johnson-O'Malley assistance, 79,000 Indian children were enrolled in public elementary and high schools in 1964.

Federal education programs.—Federal education programs help to bridge a cultural and educational gap, and thus they prepare Indian youth and adults to take advantages of further education and employment opportunities.

1. Federal elementary programs. The instructional program in Federal elementary schools is designed to meet the special English language needs of Indian children, in addition to teaching the basic skill subjects ordinarily taught in elementary grades. The Bureau attempts to provide schooling, especially in the elementary grades, within the home environment to permit the two-way communication between Indian homes and the school, and to preserve the strength of home ties in the overall development of Indian children. To carry out this objective the Bureau operates day schools wherever feasible, and when boarding schools are necessary, they are located as near the homes as reasonably possible. Seventy-two percent of Indian children in Federal schools are enrolled in grades beginners through eighth.

2. Federal high schools. Federal high school programs are also designed to meet the special education and English language needs of Indian pupils. The programs are those of basic education needed for full participation in American life plus emphasis on prevocational programs leading to more advanced technical, vocational, and subprofessional training. Practical arts such as home economics for girls and general shop for boys are required of all students as part of the regular high school course. Federal high school enrollments are made up largely of Indian students who need special remedial or compensatory instruction to overcome educational deficiencies resulting from past neglect.

In 1964, the Bureau offered basic high school instruction in 28 schools, and special curriculums for overage students in 9 schools. All Federal high schools meet the accreditation standards of the States in which the schools are located. Six Federal high schools have achieved higher education standards required by and are now accredited by the North Central Association of Colleges and Secondary Schools and the Northwest Association of Secondary and Higher Schools. To meet the special needs of Indian students, Federal high schools provide, in addition to the above, guidance and counseling programs, programs to increase English language capability, and programs to broaden the experiences of the students.

3. Post-high-school vocational and technical courses are offered at Haskell Institute, Chilocco Indian School, and the Institute of American Indian Arts in modern office work, accounting machines, business practices, electronics, auto mechanics, auto body work, heavy equipment operation, commercial cooking, cosmetology, vocations related to fine and applied arts, and numerous other trades. In addition, high school graduates take advantage of institutional vocational training available under Public Law 959. In 1964, 1,154 students were enrolled in post-high-school technical courses at Haskell, Chilocco, and the Institute of American Indian Arts. This is exclusive of the 3,078 other Indians who were enrolled in approved vocational training institutes under the adult vocational training program.

4. Summer programs: The summer programs carried on by tribal groups, in cooperation with the Bureau and many other interested groups, have been successful in expanding the background experience of Indian youth and reducing the incidence of juvenile delinquency among Indian boys and girls. These programs are locally planned and assisted, where necessary, by the Bureau. In the summer of 1964, 26,075 Indian youths participated in varying degrees in such programs as student work projects (plant maintenance and repair, building improvements, and forestry); academic classes to earn extra credit or make up credit; special instruction in science, mathematics, English, and typing; supervised recreation; educational field trips; preschool preparation; and special English instruction for elementary and high school students. Many tribes participated either by contributing money or personnel to the programs. Local non-Indian citizens and nontribal groups in some communities have cooperated with Indian tribes and the Bureau in summer program activities.

5. Special ungraded program: Because of geographical isolation, language difficulties, cultural differences, extreme poverty of some Indians, and inadequate facilities, some Indian young people reach the age of 12 or more without an opportunity to go to school. For these young people, the Bureau of Indian Affairs began an ungraded program in 1946. As the passage of years has brought many of these young people to high school level, the building program and improvement of elementary school education is also reducing the need for the special ungraded program.

At the present, 6,000 Indian young people are enrolled in ungraded programs. In these programs, each student is encouraged to progress at his individual rate toward high school graduation accompanied or followed by vocational training that will provide him with a marketable skill.

6. Dropouts: The failure of entering students to remain in high school long enough to graduate is a national problem and is present in even more marked degree in the Federal Indian school system. A study, made in 1959, brought concern to the Bureau of Indian Affairs when the national average was determined to be a 40-percent dropout rate and Indians in all schools had a dropout rate of 60 percent, or half again as much.

The Bureau's concern led us to devote additional funds to strengthen guidance instruction and counseling; make special efforts to increase parental interest in education and school affairs through increased adult education activities; initiate and rapidly expand summer programs for Indian children; and seek increased congressional appropriations to improve and expand Federal school facilities. These programs have been successful to the point that, in 1964, the graduation rate of freshmen entering the Federal-boarding high schools had increased from 52.2 to 71.8 percent in 4 years. The later figure is equal to the national average in public-day high schools.

Average daily attendance in Bureau schools has also improved in recent years. In 1964, average daily attendance in all Federal day and boarding schools equaled the national average daily attendance of 89.3 percent.

College education.—The number of students enrolled in college is increasing but more students could and should pursue higher education courses. Also the number who fail to complete their full college course is of concern. The financial struggle resulting from inadequate financial help has prompted too many potential college students to take marginal jobs, or enroll in better financed programs of assistance in trade training. With increased financial help for college-bound students, it is expected that the number of students enrolling in degree courses will increase.

Basic Problems Encountered by the Bureau in Carrying Out Its Education Responsibility

1. Indian school population is increasing at a more rapid rate than the same age children in the general population. This high rate of population increase adds to the nationwide problem of providing adequate school spaces and places an unusually heavy burden on existing Federal facilities. Where public schools are not available, the Bureau must provide additional space in Federal facilities.

2. Geographic and cultural isolation and lack of roads make continued Federal operations necessary. Many of these Federal operations, because of isolation, are boarding schools. As roads and bus routes can be developed, additional numbers of Indian children can attend on a day basis. This is one of the Bureau's educational objectives. A major obstacle, at present, is the lack of development of the road net; consequently, the development and maintenance of additional schoolbus routes is necessary to make day schools possible.

Another serious obstacle for which there is no easy solution is the shortage of potable water in desert and Arctic areas. In the desert region of the Southwest, it has been necessary to build larger boarding facilities in locations where adequate and suitable water can be found. These are not necessarily the places where most of the children are residing. Thus, the problems of hydrology tend to defeat the Bureau's objective of educating Indian children on a day basis.

The fact that the native people of Alaska, whether Aleut, Indian, or Eskimo, customarily reside in villages makes community day schools possible. But, finding and developing fresh water supplies of adequate quantity and quality in the permafrost is not easy. There is, therefore, considerable lag in the development of water facilities to match the Alaska school construction rate.

3. Federal schools must be concerned with developing quality instruction to give Indian youths background and high-level skills so they may take advantage of all employment opportunities including but not limited to the professions, service occupations, and trades.

4. Indian education must face the educational and cultural gap that exists between Indians and non-Indians. The median educational level of the non-Indian population is estimated to be the 11th grade while the educational level of Indian people is estimated to be half that grade level. The median educational level of the younger generation of Indian adults is 50 percent higher than the level of the older generation living in reservation areas.

This represents a measurable gain resulting from efforts to improve both public and Federal Indian education programs for over a generation. The experience of this Bureau, with Indian education, tells us that programs of quality education, with special reference to the cultural differences that are the result of geographical and social isolation, should be accelerated to meet the objectives of equal educational opportunities.

5. How to bring about the rapid changes necessary to bridge the educational gap and, at the same time, avoid creating a disturbing cultural breach between parents and children is a major problem. However, the educational handicap of the Indian people must be overcome quickly if they are to manage their own affairs successfully in a modern world.

2. WELFARE AND GUIDANCE SERVICES

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) General assistance	$5,446,142	$5,665,335	$6,165,335	+$500,000
Caseload	(18,414)	(18,700)	(19,500)	(+800)
(b) Other welfare assistance	2,322,463	2,776,516	2,704,916	−71,600
(1) Child welfare	1,936,317	2,294,916	2,543,816	+248,900
Caseload	(2,554)	(2,700)	(2,800)	(+100)
(2) Miscellaneous assistance	386,146	481,600	161,100	−320,500
(c) Housing	494,316	500,000	1,000,000	+500,000
(d) Social services	2,117,000	3,366,649	3,563,749	+197,100
Total	11,379,921	12,308,500	13,434,000	+1,125,500

The estimate of $13,434,000 is an increase of $1,125,500 consisting of—

(1) A decrease of $43,000 due to program savings resulting from improved manpower utilization and program adjustments;

(2) An increase of $1,168,500 for program operation.

(a) *General assistance*

The estimate of $6,165,335 is an increase of $500,000.

Need for increase.—The increase will provide for an estimated monthly average increase in caseload of approximately 800 needy persons and for anticipated increased living costs of the total caseload in accordance with State public assistance standards. A part of the increased caseload reflects a population increase on reservations and continuing unemployment and underemployment. It also includes some needy persons formerly assisted under tribal programs where it is expected that assistance from Bureau funds will become necessary.

Plan of work.—General assistance will be provided to needy Indians on reservations who are not eligible for public assistance under the Social Security Act (old-age assistance, aid to families with dependent children, aid to the blind, aid to the permanently and totally disabled), and for whom such assistance is not available from established welfare agencies or through tribal resources.

(b) *Other welfare assistance*

The estimate of $2,704,916 is a decrease of $71,600 consisting of—

(1) A decrease of $320,500 nonrecurring item provided in 1965 for Blackfeet flood disaster.

(2) An increase of $248,900 for program operation.

(1) *Child welfare.*—The estimate of $2,543,816 is an increase of $248,900.

Need for increase: The increase will provide for foster home or special institutional care for approximately 100 additional dependent, neglected, handicapped, and retarded children and will meet anticipated increased costs of foster care and institutional care of children already in such facilities.

Plan of work: Necessary foster care and appropriate institutional care will be provided for Indian children on reservations for whom such care is not available through established welfare agencies.

(2) *Miscellaneous assistance.*—The estimate of $161,100 is a decrease of $320,500 which is a nonrecurring item provided in 1965 for the Blackfeet flood disaster.

Plan of work: The estimate of $161,100 will provide for burials for needy Indians and for other costs related to welfare programs, including arrangements with some needy tribes for meeting some of the costs of the surplus food commodities program for needy Indian families.

(c) *Housing*

The estimate of $1 million is an increase of $500,000 over 1965.

Need for increase.—The increase includes funds necessary to provide a total of approximately 128 housing units on 10 reservations. Under this program the Bureau is currently constructing or improving homes for indigent families on the Fort Hall, Mille Lacs, Fort Totten, Miccosukee, Mississippi Choctaw, Papago, and Rocky Boy's Reservations. These reservations were picked to be the first participants in this program because of extreme impoverishment, extreme weather conditions, or natural disasters. Six homes which were destroyed by the August 27, 1964, tornado at San Xavier, Papago Reservation, were replaced under this program. The families assisted under this program are those who are unable by reason of age or other disability to benefit from the loan, low-rent, and mutual-help housing program.

Plan of work.—A simple core-type, panelized structure has been developed for use in the program, which provides the maximum use of unskilled and semi-skilled labor. This is the type of available labor usually found in the poorer regions of the Indian reservations. It is estimated that approximately 112,000 man-hours of employment will be generated by the program requested in fiscal year 1966. Of this, it is estimated that 85 percent or approximately 95,200 man-hours will be local Indian labor.

Under this program the Bureau will conduct surveys as necessary to ascertain (*a*) overall scope and requirement; (*b*) priorities; (*c*) estimates for individual work projects and long-range needs; (*d*) conduct site surveys, prepare plans, specifications, quantity surveys (bills of materials); (*e*) supervise and perform the actual work on individual home projects; and (*f*) obtain assistance from and/or coordinate the work and efforts of other Government agencies wherever possible in furthering program aims, such as Public Health Service participation in providing sanitary facilities under Public Law 86–121; obtaining surplus materials, etc.

(*d*) *Social services*

The estimate of $3,563,749 is an increase of $240,100.

Need for increase.—The increase will provide for a small addition in staff and attendant increased costs to enable more intensive work with families to help them cope with serious social problems emphasizing rehabilitation rather than dependency to get at some of the roots of poverty in family situations, to improve services to neglected, dependent, and handicapped children, and school dropouts, to provide necessary social services for Bureau expanded housng programs, to plan with families to help develop individual family plans for the use of judgment funds which are anticipated, as well as to counsel with Indian families and individual members regarding more constructive use of their funds.

Plan of work.—Casework services will be provided to families and parents in an effort to prevent family breakdown, to rehabilitate family members, to protect minors from harmful influences and to provide opportunities for healthy growth and development. In addition, staff services will be contributed to advance the following projects: housing improvements, antipoverty programs, and family plan programs for use of judgment funds.

3. RELOCATION AND ADULT VOCATIONAL TRAINING

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(*a*) Relocation services	$2,714,266	$2,842,000	$2,997,000	+$155,000
(*b*) Adult vocational training	6,557,974	9,363,000	11,429,000	+2,066,000
Total	9,272,240	12,205,000	14,426,000	+2,221,000

The estimate of $14,426,000 is an increase of $2,221,000 consisting of—

(1) A decrease of $13,000 in relocation services and $56,000 in adult vocational training due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $168,000 in relocation services and $2,122,000 in adult vocational training for program operation.

Need for increase.—The increase will provide the full range of services both through entering employment direct from places of origin on the reservation, and through adult vocational training, including employment following training, for the present backlog of approximately 850 applicants awaiting this service.

Plan of work.—These two programs provide financial assistance to Indians to enable them to become self-sufficient through adequate employment. The relocation services phase of the program provides services and financial assistance to Indians who are prepared to accept immediate employment. The adult vocational training program (Public Law 959) provides training which will lead to self-support.

Relocation services will provide service and financial assistance to 1,800 units (4,320 persons). The funds requested for adult vocational training services will provide services and financial assistance to 3,421 units (7,184 persons) in training. Financial assistance and services will also be available for 2,000 units (6,600 persons) in on-the-job training.

4. MAINTAINING LAW AND ORDER

Activity	1964 amount available	1965 amount available	1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Maintaining law and order	$2,302,719	$2,753,000	$2,735,000	−$18,000

The estimate of $2,735,000 is a decrease of $18,000 due to program savings resulting from improved manpower utilization and program adjustments.

Plan of work.—Maintenance of law and order on Indian reservations is a Federal and tribal responsibility except in those areas where the States have assumed jurisdiction pursuant to congressional authorization.

Tribes have been encouraged to assume financial responsibility for law and order, and some of them are spending more than the Bureau. The resources of other tribes, however, are running low and their inability to carry the financial burden affects directly the quality of their law and order programs. The Bureau will direct and supervise reservation programs where necessary, leaving tribal financial arrangements to be diverted to resource development programs.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$88,999,014	$97,475,817	$106,895,000	+$9,419,183
Transferred to GSA (77 Stat. 436)	17,574			
Contract authorization (48 U.S.C. 50d-1)	−989,683	−1,100,000	−1,100,000	
Applied to contract authorization (48 U.S.C. 50d-1)	+772,038	+989,683	+1,100,000	+110,317
Unobligated balance lapsing	436,307			
Appropriation	89,235,250	95,868,500	106,895,000	+11,026,500
Proposed supplemental due to civilian pay increase (78 Stat. 400)		1,497,000		−1,497,000
Obligations by objects:				
11 Personnel compensation	44,476,528	48,800,470	52,317,838	+3,517,368
12 Personnel benefits	3,077,878	3,556,561	3,791,761	+235,200
21 Travel and transportation of persons	2,439,382	2,879,485	3,082,985	+203,500
22 Transportation of things	1,423,672	1,232,046	1,243,746	+11,700
23 Rent, communications, and utilities	1,932,464	2,004,089	2,156,489	+152,400
24 Printing and reproduction	32,783	29,603	31,603	+2,000
25 Other services	3,711,574	4,095,032	4,654,688	+559,656
Services of other agencies	24,752	21,942	21,942	
26 Supplies and materials	12,336,215	13,296,690	13,500,490	+203,800
31 Equipment	1,675,307	1,485,199	1,818,899	+333,700
41 Grants, subsidies, and contributions	19,238,645	21,491,083	25,690,942	+4,199,859
42 Insurance claims and indemnities	38,823			
Subtotal	90,408,023	98,892,200	108,311,383	+9,419,183
Deduct quarters and subsistence charges	1,409,009	1,416,383	1,416,383	
Total obligations	88,999,014	97,475,817	106,895,000	+9,419,183

REMEDIAL INSTRUCTION FOR FEDERAL HIGH SCHOOL ENROLLEES

Chairman HAYDEN. I note that, in the information supplied about Federal high schools, it is stated that enrollments in these schools are made up largely of Indian students who need special remedial or compensatory instruction to overcome educational deficiencies resulting from past neglect. How many of your students would you say fall into this category?

Commissioner NASH. The criteria for entry into our Federal boarding schools is largely that of being non-English speaking, of being overage or under grade for age, of coming from a neglected situation at home, being in need of remedial instruction, or coming from an isolated area, that is, a roadless area where there is no public school opportunity.

With the exception of those who come from isolated areas, I would say that all the children in our boarding schools are there primarily because of a special need, either educational or social. And when you consider the effects of extreme geographical isolation, I think that

ought to be included as a special need. I think the truthful answer, Mr. Chairman, would be 100 percent.

ENGLISH LANGUAGE AND CULTURAL DEFICIENCIES

Chairman HAYDEN. In what subjects do you find the educational deficiencies most prevalent?

Commissioner NASH. Eighty percent of the children who come to our boarding schools come from non-English-speaking homes. This means that from the very beginning the child must begin to learn in a foreign language. In most of our schools, we have beginners' rooms. Perhaps in the public schools we would call it kindergarten. We call them beginners' rooms.

This is basically a room in which the child learns to go to school and learns enough English to learn in school. We then start him out in his second year to learn to read. We have been making rather careful studies of the English-language capability and potential in our schools, and we characteristically find the Indian children in our schools, Mr. Chairman, are pretty much up to grade for about 4 years.

In the fifth year, you will begin to get a falling away, as compared with children in the public schools across the country, until by the time they reach the high school level, they will be on the average 2 years, and as high as 4 years, behind grade in the standard test. What is the explanation for this? I think very simply, English-language capability.

The first 4 years of the standard public school curriculum and of ours, too, are devoted to giving the child the tools he needs to learn in English. During this period the Indian child on the average performs as well as anybody else. Beginning in the fourth grade and up, these tools are then put to use. At this point the non-Indian child comes in with a wealth of experiences, radio, TV, books in the homes, magazines, conversations, the whole background of our culture that the Indian family is not likely to have.

At this point the special needs begin to come up. So I would say it is in the language skills and the language arts that the Indian child needs special attention. And he needs it not through the first four grades, but as long as he stays with us. We are now revising our curriculum along those lines.

Senator PROXMIRE. Could I interrupt for a minute, Mr. Chairman?

Chairman HAYDEN. Yes.

COMMENDATION OF COMMISSIONER NASH

Senator PROXMIRE. I apologize to the chairman for being late to this meeting. I do want to say, however, that I am very proud to have a chance to be on the committee. This is the first year I have been on it, as you know, and it is the first time I have had a chance to tell Commissioner Philleo Nash, who is an old friend of the committee, and who has been up here before in past years, how proud I am of one from my State of Wisconsin. He was an outstanding Lieutenant Governor in our State and is very, very much admired and respected.

He has had great experience with the Indians in Wisconsin. And I want to say that I am just as pleased as I can be that he is head of the Indian Bureau and very proud of the excellent work he has done. I have described his performance over the years.

Again I apologize to the chairman for interrupting, but I did not want to miss this chance.

BACKGROUND OF FEDERAL HIGH SCHOOL STUDENTS

Chairman HAYDEN. Where have these children gone to school before they reached high school?

Commissioner NASH. Most of the children coming to our Bureau high schools will have been in Bureau boarding schools. But, in round numbers, about 20 percent of the children in our boarding high schools at the present time are coming out of public high school situations. These are, in short, public high school rejects, dropouts, failures of one kind or another.

This is becoming a very serious problem. We have been so zealous in the past decade in helping the Indians get into public school districts, and building schools, and turning them over to public schools that not enough attention has been paid to the special educational needs of the Indian children. Consequently, we are getting a very large number of applications in our boarding high schools from Indian young people who have stayed in the public high schools until they reach the minimum age under State law.

At this point, their parents may persuade them they need more education. They may have a brush with the law. They may be predelinquent or postdelinquent. At the tribe's, at somebody's advice, or even under orders of a tribal court, it may be the decision that the best thing to happen to this young person to keep him from drifting into serious trouble is to get him into one of the Federal boarding schools.

DROPOUT RATE

We have now brought our dropout rate in the Federal boarding high schools up to a par with the high school average across the country for day schools, for everybody. That is, approximately 70 percent of those who enter the ninth grade graduate from the public schools. And we have brought our Indian boarding school figure up to this same percentage.

But, Mr. Chairman, the Indian dropout rate in the public high schools of my own State of Wisconsin, to which Senator Proxmire referred a minute ago, runs as high as 3½ times higher than the non-Indian dropout rate in the same schools. And a certain percentage of these dropouts will find their way back to our boarding schools as long as there is entitlement. It is a very important service to these people which we are prepared to carry on. This is a very important rescue operation.

FEDERAL HIGH SCHOOL OPPORTUNITIES

Chairman HAYDEN. Is it your opinion that, by going to these high schools, they have a full opportunity to become fluent in the English language, and to learn the habits, customs, and practices of the general population of this country among whom they must work and live?

Commissioner NASH. Mr. Chairman, we think the ideal educational situation for an Indian child is the same as that for any other American child; that is, to live at home and go to a nearby day school, and

return home at night, and have the evening and weekends with his family.

But where this is impossible, as, for example, where the road network is not sufficiently developed, where the poverty of the family means that they can really not support that child, or where social disorganization has reached the point where the family is nonexistent, then we are not doing that child a service by compelling him or even encouraging him to stay at home. This is the principal function of the boarding school at this time, to bridge the cultural, social, and economic gap between the Indian and the non-Indian.

SPECIAL UNGRADED PROGRAM

Chairman HAYDEN. With regard to your special ungraded program, what percentage of Indian students are in this program?

Commissioner NASH. We have around 6,000 students in the ungraded program in round numbers. And Mrs. Thompson, what would that percentage be?

Mrs. THOMPSON. That would be 6,000 out of a total of 36,000.

Commissioner NASH. About 15 percent that would be.

Chairman HAYDEN. After they have been developed to high school level, are they kept in reservation schools?

Commissioner NASH. Are you talking about the special Navajo program, Mr. Chairman? No, indeed.

Chairman HAYDEN. The ungraded children.

Commissioner NASH. The ungraded children, Mr. Chairman, have a very outstanding record of going out to work in off-reservation communities. Mr. Madison Coombs, who was chairman of the team who made the Bordertown survey, was the principal architect of the ungraded Navajo program, and he made a study a few years ago as to what was happening to the graduates of this ungraded program.

Now, with reference to the specific question of the chairman, they are not kept in reservation schools at all. They graduate and are provided with functional English literacy and a marketable job skill which is of a modest kind. This program has been outstanding in turning out many thousands of Navajo young people, who would otherwise be doomed to a life of poverty, to a productive life in the larger society.

Now, the program that is gradually evolving is a graded high school program. So that as soon as one of the ungraded Navajo young people scores across the board, let us say, in all subjects in the ninth grade, he is no longer part of the ungraded program, but becomes a member of a class in the high school within the ungraded high school. I have seen this in operation in Chemawa, in Salem, or——

CHILD WELFARE PROGRAM

Chairman HAYDEN. You are requesting $2,543,816 for child welfare and indicate that the $249,000 increase over last year will provide foster home or institutional care for 100 dependents neglected, handicapped, or retarded children. For how many children of this type are you now caring?

Commissioner NASH. The 1965 caseload in child welfare is 2,700. And we are proposing to increase this by only 100 with this program increase that we are asking for. This does not represent the full

need, Mr. Chairman. The program increase for child welfare would be $249,000. Part of this would go into increased costs for foster homes and the institutional care that some of the cases require, blind and deaf, and so on.

Also, we need more case findings so that part of this goes to social services and we need more home finding, because the finding of suitable foster homes for the Indian children whether on or off the reservation, whether Indian or non-Indian parents, is not a simple proposition.

It is relatively easy to find a place for an infant and relatively difficult to find a place for a high school student, even though he may need it as much. We have a cooperative program which is small but effective, and we are extremely proud of it.

Welfare and Guidance Services Housing Program

Chairman Hayden. Please describe briefly your proposed $1 million housing program under the welfare and guidance services activity.

Commissioner Nash. Yes, sir. This is an extension of a program for which we first asked 2 fiscal years ago. We have operated it for 2 years at the $500,000 level. We developed this program, Mr. Chairman, because we discovered by practical experience that the low net public housing programs, and mutual aid programs, the Farmers Home Administration, and other lending programs were unsuitable for a very large number of Indian people on the reservation.

That is, the poverty on the reservations is so great there are many people who cannot pay back a loan, cannot even afford the low rent that goes with subsidized housing, and are perhaps unable to work on a home of their home, which is the mutual aid concept.

Old people, crippled people, mothers with many dependent children, for example, really can't benefit from these other programs. We had thought in the beginning that we would be able to rehabilitate homes by putting a small amount of money in repairs. We picked to start with, Mr. Chairman, four very depressed reservations along the northern tier of States, where the winter climate is most severe and suffering is the greatest because of the cold.

We conducted architectural and engineering surveys on a list of people certified by our housing engineers as the most needy people on the reservation. And we found, Mr. Chairman, that of the first 20 homes, 16 were totally unrepairable. They had mud sills that had rotted. There were no foundations. There was nothing to build upon.

We found approximately the same situation on the other reservations later. Accordingly, with the limited sum available, $500,000 doesn't go very far. We retained it at that level until we could gain some experience as to what could be repaired, what had to be rebuilt or built new, and how much you could get for how little money in this kind of program, because it obviously had to be a free program.

Request for Enlargement of Program

We now have that experience, and we are asking to enlarge the program. We developed a housing design in our own architectural-engineering office, which the architects describe to me as a core house.

By this they mean that we build very, very cheaply the core of the house, consisting of kitchen, bathroom, storage area, and one medium-sized room.

This will be adequate for an elderly couple or for a very young couple. But to this must be added sleeping rooms or sleeping wings for the family who have a large number of children, or as the family grows. But the utilities, the heat and all the expensive portions of the house being present in the core, the wings can be added at a very small cost and can be added as the need develops in case the family grows, as Indian families do.

We are building the core for about $4,500 and the wings, if both are needed, for a maximum of about $7,500. But for $7,500, then, we are providing houses for even the largest families, and with a reasonable measure of privacy and of modern sanitation and so on.

Chairman HAYDEN. That is about half the cost of the ordinary home that is constructed in the Salt River Valley for the workingman.

Commissioner NASH. Just about half. It is not an elaborate house, but it is a very satisfactory house. We were very lucky, Mr. Chairman, in having this design and specifications on hand and approved. And we got some consulting architects in to look it over. We didn't just rely on our own judgment.

We had this ready to go when the Alaskan earthquake struck. And the flood struck the Blackfeet, and a tornado struck another reservation.

With the funds Congress has proposed for Alaskan reconstruction and rehabilitation and to repair flood damage, we have replaced the homes that were destroyed on Kodiak and the Blackfeet, and are in process of restoring the homes in San Xavier. Therefore, in addition to the funds this committee provided for us, we had approximately another $2.5 million disaster housing for which we used the same design.

Chairman HAYDEN. Are the houses to be constructed under this appropriation located on reservations where the Public Health Service has allocated funds for sanitary facilities?

Commissioner NASH. Yes, sir; we coordinate this program with the Division of Indian Health. By and large, we go in at the same time that they go in. When we began the program, there were a few difficulties. Of course, we couldn't pick the points of disaster. But with that exception, we are well coordinated.

INDIAN EDUCATION SURVEY STATUS

Chairman HAYDEN. What is the status of the survey of Indian education which you were performing last year and indicated would continue during the current fiscal year?

Commissioner NASH. Because we have devoted most of our attention to this bordertown survey, we are not a great deal further along in our overall education surveys that we were at this time last year.

Dr. Aberle, who is our survey planner, has continued to work on this, but we turned our attention to this bordertown survey in the middle of the year, and that is what we have been doing primarily.

FEDERAL GOVERNMENT PAYMENT FOR POLICING PROGRAM

Chairman HAYDEN. Would you please place in the record information as to the tribes for which the Federal Government pays the expenses of maintaining law and order, including in that information the amounts expended for this purpose? Please provide the information for both fiscal years 1965 and 1966.

Commissioner NASH. Yes, sir; we will provide that for the record.

(The information referred to follows:)

DISTRIBUTION OF FEDERAL FUNDS

The information below reflects a distribution at this time of Federal funds on an agency or reservation basis for the maintenance of law and order during fiscal year 1965. On the basis of the budget request for law and order on Indian reservations, it is anticipated a similar distribution by agency will be made in fiscal year 1966 with such modification as may be necessary to meet program changes

Agency or reservation	*Federal funds, fiscal year 1965*
Aberdeen area office, Aberdeen, S. Dak.:	
Cheyenne River	$18,814
Crow Creek and Lower Brule	93,393
Fort Berthold	57,447
Pine Ridge	164,814
Rosebud	98,273
Sisseton	27,758
Standing Rock	111,389
Fort Totten and Turtle Mountain	126,256
Billings area office, Billings, Mont.:	
Blackfeet	43,041
Crow	49,285
Flathead	33,263
Fort Belknap	69,803
Fort Peck	60,216
Northern Cheyenne	57,780
Wind River	62,988
Gallup area office, Gallup, N. Mex.:	
Consolidated Ute Agency	31,916
United Pueblos Agency	130,006
Zuni	51,095
Mescalero	23,040
Jicarilla	15,029
Navajo	48,809
Minneapolis area office, Minneapolis, Minn.: Red Lake	$101,284
Phoenix area office, Phoenix, Ariz.:	
Colorado River Agency	41,615
Papago	95,580
Pima	77,945
Salt River	42,130
San Carlos	57,269
Uintah & Ouray	13,931
Hopi	63,768
Fort Apache	31,775
Nevada Agency	76,702
Portland area office, Portland, Oreg.:	
Colville and Spokane	52,300
Fort Hall	64,740
North Idaho Agency	57,754
Warm Springs	29,952
West Washington Agency	67,757
Yakima	40,664
Total	2,289,581

Chairman HAYDEN. I have a telegram from the chairman of the San Carlos Tribal Council, and a letter from that tribe's attorneys, indicating that the economic situation of the tribe is such that it can no longer support its law and order program. These communications will be printed in the record.

(The information and communications referred to follow:)

SAN CARLOS APACHE RESERVATION

SAN CARLOS, ARIZ., *February 17, 1965.*

Senator CARL HAYDEN,
U.S. Senate Office Building, Washington, D.C.:

San Carlos Apache Tribe has been spending between $75,000 and $85,000 per year to finance law and order on this reservation. Situation has become critical,

for this tribe can no longer fund this operation due to sharp decrease in tribal income. This has been brought to the attention of the Bureau of Indian Affairs officials and they have endeavored to assist us by taking over portion of our law-and-order program as rapidly as funds are made available to them. Projected tribal share of law and order of calendar year 1965 approximately $65,000, all of which tribe will be unable to finance. It is our understanding your committee will hear Bureau of Indian Affairs budget for fiscal year 1966 sometime this month, and feel sure the Bureau has not had time to include this in their present budget.

Would greatly appreciate it if you could assist us in obtaining appropriations to cover Bureau's complete takeover of this operation on the San Carlos Indian Reservation.

MARVIN MULL,
Chairman, San Carlos Tribal Council.

LAW OFFICES OF MARKS & MARKS,
Phoenix, Ariz., February 16, 1965.

Hon. CARL HAYDEN,
Senate Office Building, Washington, D.C.

DEAR SENATOR HAYDEN: At the request of the chairman of the San Carlos Apache Tribe, Marvin Mull, we are writing regarding a serious financial problem that has arisen on the San Carlos Apache Reservation.

Due to the decrease in cattle prices last fall and the resulting loss of several hundred thousand dollars of income, both the tribe and individual members of the tribe, the San Carlos Apache Tribal Council finds itself in a precarious financial situation. As a result, the tribal council has had several meetings to try and fit their budget to their income and possible future income and they have had meetings with Bureau of Indian Affairs officials who are endeavoring to assist the tribe in meeting this financial crisis.

Several years ago the San Carlos Apache Tribe was one that took over the financial obligations of law and order on its reservation, with a budgetary demand of over $90,000 per year. This has proven to be too much of a financial load to the tribe due to the loss of income during the past several years, their income from asbestos and cattle having been curtailed. After many budgetary meetings the tribe has found it necessary to cut out law and order from its budget for next year, with the understanding that the Bureau would be able to furnish funds to carry it on.

We now learn that no further funds are authorized or available, and unless additional funds are made available through the Bureau of Indian Affairs for this particular program, there will be no law an order enforcement on the San Carlos Reservation which, as you can well imagine, would be an intolerable situation.

Therefore, the San Carlos Apache Tribe respectfully urges and requests you to make available to the Bureau of Indian Affairs, through a revised budget of the Bureau, the necessary funds for law and order on the San Carlos Apache Reservation.

If any further information is needed on this subject, please feel free to call upon our office or our associate in Washington, D.C., Arthur Lazarus, Jr., or Marvin Mull, chairman of the San Carlos Apache Tribe.

We wish to thank you for your continued interest in the welfare of the Indians in Arizona.

Kindest regards.

Sincerely,

ROYAL D. MARKS.

FUNDING OF POLICE PROGRAM

Chairman HAYDEN. Are you prepared to finance the San Carlos law and order program with your funds?

Commissioner NASH. Mr. Chairman, we have been informed that the Tribal Council San Carlos with its limited and declining funds has taken an adamant position that they will not appropriate tribal funds for law and order beyond June 30, 1965.

The Bureau is now spending $57,000 and the tribe $84,000 for the law and order activity at San Carlos. If the Bureau is either to operate the program or to provide funds under the contract to the tribe—

and either one would be agreeable to us—we estimate a total of $200,000 would be needed, or $143,000 above our present appropriations.

Twenty-two persons are now employed in the reservation program and the majority of them are tribal employees.

Chairman HAYDEN. How much will it cost annually?

Commissioner NASH. The total cost we estimate at $200,000.

Chairman HAYDEN. That will be $60,000 more than you spent this year. Why?

Commissioner NASH. Mr. Chairman, the reason we will have to spend more than the tribe and Bureau are spending together now is that the tribal employees are paid at a lesser scale and have lesser benefits than the Bureau itself. So, if they become Federal employees or we operate under a contract, then we would want them to have the same standards as our own employees.

RESOURCES MANAGEMENT

Chairman HAYDEN. For fiscal year 1966 you request $42,956,000 for resources management, an increase of $2,566,000 over the amount appropriated last year. The justification for this estimate will be printed in the record.

(The justification referred to follows:)

ECONOMIC ADVANCEMENT OF INDIANS

The purpose of this appropriation is to promote the economic advancement of the Indians in the continental United States, including natives of Alaska, through the utilization of their resources.

To carry out this purpose, the Bureau of Indian Affairs is responsible for the management, development, improvement, and protection of resources and appurtenant facilities of Indians under the jurisdiction of the Bureau.

The long-range program objective is to improve the economic and social conditions among Indians to the point where Federal financing will no longer be required to develop and utilize their resources.

During the last fiscal year the Bureau carried out this objective through active management programs which were aimed toward increased Indian participation in the management of Indian-owned resources.

For fiscal year 1966 emphasis is being placed on the development phase of Indian resources while at the same time carrying on the custodial type activities necessary for the protection and preservation of such resources.

Appropriation, 1964	$37,711,000
Supplemental appropriation, 1964	420,000
Total appropriation, 1964	38,131,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	−80,000
Transferred from "Management and investigation of resources," Bureau of Sport Fisheries and Wildlife	+60,000
Total available, 1964	38,111,000
Appropriation, 1965	40,390,000
Pay cost supplemental	724,000
Total appropriation, 1965	41,114,000

SUMMARY OF INCREASES AND DECREASES, 1966

Forest and range lands:		
To provide funds for timber sale program, increased fire protection and timber inventories	$175,000	
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−46,200	
Decrease resulting from an increase in 1965 for the development of wells and related water facilities on the Mescalero Reservation, N. Mex., which will be nonrecurring in 1966	−200,000	−$71,200
Agricultural and industrial assistance:		
To provide funds for extension contracts and Alaska reindeer program	276,000	
To provide funds for increased staff requirements by an enlarged credit program	172,000	
To provide additional staff to handle workload resulting from claims awards and for staff required in the low-rent and mutual-help housing program	472,000	
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−146,800	773,200
Soil and moisture conservation:		
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−52,000	−52,000
Maintenance of roads:		
To provide funds for regular maintenance on 301 miles of additional school bus routes and upgrading of regular maintenance on the heavy traffic roads	200,000	
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−13,600	186,400
Development of Indian arts and crafts: To provide funds to cover operation of the Blackfeet Museum at Browning, Mont. (transferred from the "Education and welfare services" appropriation)		39,400
Management of Indian trust property:		
To provide some strengthening of staff, particularly in the heavily allotted reservations where caseload is the greatest	150,000	
To provide funds to reimburse the employees compensation fund as required in sec. 209 of Public Law 86–767	94,000	
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−240,600	3,400
Repair and maintenance of buildings and utilities:		
To provide funds for routine and recurring repair and maintenance of newly constructed buildings and attendant utilities and services	1,100,000	
Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments	−134,300	965,700
Operation, repair, and maintenance of Indian irrigation systems: Nonrecurring item due to program savings resulting from improved manpower utilization and program adjustments		−2,900
Net increase, 1966		1,482,000
Budget estimate, 1966		42,956,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriated	Pay cost supplement	Transfers	Amount available
1. Forest and range lands	$4,732,844	$5,124,200	$125,000		$5,249,200
2. Fire suppression	902,520	140,000			140,000
3. Agricultural and industrial assistance	5,410,374	6,325,500	149,300		6,474,800
4. Soil and moisture conservation	5,878,888	5,408,000	131,000		5,539,000
5. Road maintenance	3,102,095	3,595,600	17,000		3,612,600
6. Development of Indian arts and crafts	312,308	318,000	7,600		325,600
7. Management of Indian trust property	5,854,650	6,468,000	189,600		6,657,600
8. Repair and maintenance of buildings and utilities	10,457,216	11,696,700	102,600		11,799,300
9. Operation, repair, and maintenance of Indian irrigation systems	1,188,134	1,314,000	1,900		1,315,900
Unobligated balance lapsing	272,474				
Total	38,111,503	40,390,000	724,000		41,114,000

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Forest and range lands	$4,732,844	$5,249,200	$5,178,000	−$71,200
2. Fire suppression	902,520	140,000	140,000	
3. Agricultural and industrial assistance	5,410,374	6,474,800	7,248,000	773,200
4. Soil and moisture conservation	5,878,888	5,539,000	5,487,000	−52,000
5. Road maintenance	3,102,095	3,612,600	3,799,000	186,400
6. Development of Indian arts and crafts	312,308	325,600	365,000	39,400
7. Management of Indian trust property	5,854,650	6,657,600	6,661,000	3,400
8. Repair and maintenance of buildings and utilities	10,457,216	11,799,300	12,765,000	965,700
9. Operation, repair, and maintenance of Indian irrigation systems	1,188,134	1,315,900	1,313,000	−2,900
Unobligated balance lapsing	272,474			
Total	38,111,503	41,114,000	42,956,000	1,842,000

1. FOREST AND RANGE LANDS

Analysis by subactivities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Forestry	$3,108,813	$3,340,300	$3,482,000	+$141,700
(b) Range lands	1,624,031	1,908,900	1,696,000	−212,900
Total	4,732,844	5,249,200	5,178,000	−71,200

(a) *Forestry*

The estimate of $3,482,000 is an increase of $141,700 consisting of:

(1) A decrease of $33,300 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $175,000 which is distributed to the two principal forestry program features as follows: Forest management $65,000 and timber sales $110,000.

Need for increase.—The increase is needed, (*a*) to provide better administration of current timber sales and for a planned increase in sales, (*b*) to cover the cost of increased fire protection, (*c*) to provide timber inventories required for use in land sales or exchanges, and (*d*) to cover the increased cost of materials and supplies.

Forest management (increase $65,000).—The requested increase will allow a small amount to strengthen fire protection efforts. At some reservations, protection is provided through contracts with the U.S. Forest Service, State protection agencies, and others. The requested increase includes $15,000 for this item.

Land valuation activities require data regarding timber volume and quality on the lands being appraised. It is planned to employ four foresters to handle this function, along with their assignments on regular forest inventory and timber cruising projects.

Timber sales (increase $110,000).—The recent trend in timber sales is shown in the following table:

Timber cut under contract and paid permit (exclusive of Klamath and Menominee, for which Federal trusteeship was terminated in 1961)

Fiscal year	Volume cut (thousand feet board measure)	Cash receipts
1958	404,662	$7,707,630
1959	518,537	9,700,804
1960	575,511	11,874,681
1961	474,315	8,140,723
1962	545,513	8,260,379
1963	546,028	8,564,459
1964	742,251	11,478,031
1965 (estimate)	842,000	13,000,000
1966 (estimate)	862,000	13,200,000

During recent years of expanding timber sales, the forestry organization has been strained beyond its capacity to administer the sales properly, and additional personnel are needed to correct this situation.

The budgeted cut of 862 million board feet in fiscal year 1966, will provide a stumpage income of over $13 million. It will also create from 6,000 to 8,000 man-years of employment in the local forest products industries, with wages exceeding the stumpage receipts. Substantial increases will also be generated in employment among the trades and business activities that service the industry employees.

The volume of timber cut under contract and paid permit in fiscal year 1964 was the largest in the Bureau's 53-year history of timber sales. The estimated cut in fiscal years 1965 and 1966, are at about the limit that can be justified unless funds are provided, in the near future, for timber stand improvement and planting, to maintain the forest lands in fully productive condition.

Plan of work.—The work objectives of the timber management program are: (1) Development of the full timber growing potential of the Indian-owned forest lands; (2) protection of the growing stock from destructive agencies, primarily fire, insects, windthrow and trespass; and (3) improvement of the economic status of the Indian owners, and communities on and near the reservations, through full use of the sustained yield allowable cut of all commercial forest products. It is a function of the Bureau to relate these objectives of timber management to other uses of the forest under the multiple-use concept, such as grazing, recreation, and watershed protection.

Importance to the Indian economy.—At some reservations, receipts from timber sales are the principal source of income to the tribes. It is estimated that every million board feet of timber sold creates from 6 to 12 man-years of employment on or near the reservations in the logging operations and manufacture of lumber. This employment tends to decrease with the trend toward greater mechanization, but employment can be increased through the establishment of integrated wood product plants and remanufacturing facilities. One objective, therefore, is to plan the timber sales so as to encourage the establishment of fully integrated manufacturing facilities on the reservations.

REPAYMENT OF FOREST MANAGEMENT FUNDS

Under authority of the act of February 14, 1920 (25 U.S.C. 413), as amended, deductions are made to cover, in whole or in part, the cost of forest management. The deductions are deposited in the Treasury, as miscellaneous receipts, or to the appropriate tribal accounts, depending upon the source of expenditures. In fiscal year 1964, the deductions earned for deposit in the Treasury were $951,489. Deductions for deposit in tribal accounts were $154,315.

(b) Rangelands

The estimate of $1,696,000 is a decrease of $212,900 consisting of:

(1) A decrease of $12,900 due to program savings resulting from improved manpower utilization and program adjustments.

(2) A decrease of $200,000 resulting from an increase in 1965 for the development of wells and related water facilities on the Mescalero Reservation, N. Mex., which will be nonrecurring in 1966.

Plan of work.—The range management program provides for proper conservation and use of 40 million acres of Indian grazing land; the development of management plans for the grazing land of each reservation; the development of range water supplies; the granting of grazing privileges looking toward the highest return consistent with undiminished future use; and the encouragement of Indian use of Indian rangeland.

Management plans provide for the division of the range into practical use units, determination of proper stocking and season of use, and for range improvement and betterment programs to obtain full use of the forage balanced with sustained production. Annual range condition and trend studies and utilization checks are made as the basis for adjustments in stocking rates, season of use, unit boundaries, and for the location of range water developments and other facilities. Provision is made for uniform distribution of livestock on the range to insure proper utilization and to prevent its destruction through localized overgrazing. Range water is increased through the development of deep wells, paved catchment basins and pipelines in the arid Southwest in support of the range management program. Most Indian reservations are located in principal watershed areas of the Western United States. Proper use of Indian range is essential in the multiple-use concept of watersheds. Well-managed ranges provide excellent habitat for wildlife, encourage recreation development, and stabilize stream flows. In addition, a material contribution is made to a stabilized livestock industry by furnishing grazing for 471,405 cattle, 39,180 horses, and 696,533 sheep. Range inventories and other technical data indicate an average potential grazing capacity 50 percent greater than the current estimated capacity. This potential can be reached through an understanding and application of the basic principles of range management by range users over a period of time, and after development of necessary physical range improvements. Assistance is furnished to the Indian tribes in the allocation of grazing privileges to their members. Grazing privileges not needed for these allocations are advertised and permitted after competitive bidding.

Importance to the Indian economy.—Indians use 88 percent of the 40 million acres of range with livestock valued at $63,739,244. The annual gross value of the products produced from the range by Indians was $24,545,843 in 1963. In addition, Indian landowners received $3,683,318 in cash from grazing fees. Non-Indians received a gross value of $19,763,983 in 1963 from products produced on the range which represents an area for future Indian expansion.

2. FIRE SUPPRESSION

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Fire suppression	$902,520	$140,000	$140,000	----------

Plan of work.—The estimate for 1966 is $140,000, the same as 1965. Funds under this activity, together with available tribal funds, are used to pay the cost of suppression and emergency prevention of fires on or threatening forest and range lands of Indian reservations.

Status of program

	Calendar years					5-year average
	1959	1960	1961	1962	1963	
Number of fires	1,309	1,467	1,629	1,130	1,405	1,388
Average acres per fire	80	94	76	59	38	70
Area burned (acres):						
Timberlands	22,401	25,577	15,379	23,952	9,758	19,413
Brush and grasslands	82,623	113,033	108,679	42,463	43,936	78,146
Total area burned	105,024	138,610	124,058	66,415	53,694	97,559
Estimated damage	$2,172,803	$552,325	$1,179,050	$329,451	$255,594	$897,845

A reasonable estimate of fiscal year 1966 fire-suppression costs is not possible. The many variables such as weather conditions, tourism and recreation, the effectiveness of hazard reduction programs, and the effectiveness of prevention, presuppression, and suppression programs, have a marked effect on the number, location, and size of fires and the eventual cost of suppression.

Multiple use of the Indian forest has increased at a rapid rate in recent years. Funds have been insufficient to carry out adequate hazard reduction programs with a resultant annual increase in the buildup of flash fuels as well as heavy fuels. The combination of increased forest use and fuel buildup compound the risk of diaster fires.

[In percent]

Causes of fires	Calendar years				
	1959	1960	1961	1962	1963
(a) Man	50	51	38	44	50
(b) Lightning	50	49	62	56	50

The obligations for each of the last 5 fiscal years were:

1960	$432,109
1961	1,221,228
1962	942,574
1963	604,435
1964	902,520

In fiscal year 1960 one serious fire on the Klamath Reservation, Oreg., accounted for about one-fifth of the total expenditures. In fiscal year 1961 the high costs were due largely to serious fires on the Flathead Reservation, Mont. Heavy obligations were incurred in fiscal year 1962 on the Crow and Umatilla Reservations in Montana and Oregon, and on Southern California Indian lands. In fiscal year 1963, even though a relatively easy fire year, a large portion of the costs resulted from large and numerous timber and brushland fires on the Colville Reservation, Wash. In early fiscal year 1964 the Colville Reservation again had numerous fires, several of which attained large proportions. Late in fiscal year 1964 one large fire on the Fort Apache Reservation, Ariz. accounted for more than 10 percent of the total suppression costs for the year.

3. AGRICULTURAL AND INDUSTRIAL ASSISTANCE

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Agricultural extension	$1,390,668	$1,494,900	$1,765,000	+$270,100
(b) Credit operations	1,292,054	1,498,400	1,627,000	+128,600
(c) Economic development	2,727,652	3,481,500	3,856,000	+374,500
Total	5,410,374	6,474,800	7,248,000	+773,200

(a) *Agricultural extension*

The estimate of $1,765,000 is an increase of $270,100 consisting of:

(1) A decrease of $5,900 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $276,000 which provides $143,000 for extension contracts and $133,000 for the Alaska reindeer program. This increase includes funds to bring the extension contracts in 15 States up to equitable salary levels and to furnish some extension-type services to the 18,000 Indians and Eskimos of Alaska and to continue the orderly expansion of the reindeer industry for the benefit of the poverty stricken Eskimos of Alaska.

Need for increase.—To permit the various States (15) to increase the work with 4–H Club youth by the use of local Indian leaders, to help in the communication field by employing Indian aids to translate technical advice and guidance to Indian adults in their own language and to furnish more training to Indians and Eskimos in the potentials of an expanded reindeer industry and other limited resources to hold down the welfare needs of the area and to help raise their economic level.

Plan of work.—State extension contracts: The estimate will allow the continuance of Johnson-O'Malley contracts with 15 State extension organizations of the land-grant colleges. These contracts are under constant review and are renegotiated and executed on an annual basis. In the event the services are found to be unsatisfactory, contracts with the respective State will not be made and the Bureau of Indian Affairs will continue a program to the extent of contract funds.

Extension agents counsel with individual Indians and families, and with organized Indian groups on problems of agriculture (farming and livestock raising), home management, youth training through 4–H Clubs, and community development and improvement.

Approximately 90 professionally trained extension agents are employed by the 15 States to carry on extension programs and services at the reservation level. This reservation level program consists of farm and home visitations, meetings, short courses, tours to demonstration farm and ranch practices and the backup services of the State college specialists in all phases of agriculture and home living.

Through organized educational methods Indians are encouraged to recognize and take advantage of opportunity for social and economic betterment and to take more advantage of the services offered by the State colleges and their attendant institutions.

The following table shows how the funds are programed to the States under contract:

	Actual 1964 contract amount	1965 contract amount	1966 contract amount
Colorado	$19,100	$19,100	$23,000
Florida	24,200	24,200	25,000
Idaho	35,000	35,000	40,000
Minnesota	19,500	19,500	29,000
Montana	102,440	102,440	117,900
Nevada	46,885	46,885	71,080
New Mexico	69,950	69,950	96,050
North Carolina	19,200	19,200	23,000
North Dakota	50,000	50,000	54,800
Oklahoma	133,565	133,565	148,565
Oregon	23,960	23,960	26,960
South Dakota	127,000	127,000	133,145
Utah	18,300	18,300	22,500
Washington	54,000	54,000	71,100
Wyoming	26,000	26,000	30,000
Total State contract	769,100	769,100	912,100

(b) *Credit operations*

The estimate of $1,627,000 is an increase of $128,600 consisting of—

(1) a decrease of $43,400 due to program savings resulting from improved manpower utilization and program adjustments; and

(2) an increase of $172,000 for an increase in staff required by an enlarged credit program.

Need for increase.—The total volume of credit to Indians has increased from $61 million in 1955 to $163 million in 1964, of which private lenders supplied about

63 percent. Indian organizations supplied about 23 percent, and loans through the Bureau accounted for about 14 percent. This increase in financing to Indians is indicative of the untapped credit potential for the development of reservation resources.

The program is increasingly dependent upon lending from established private sources and requires arrangements for private financing of Indian enterprises by investment firms, insurance companies, and banks. The development of sound operating plans is necessary to maximize private financing. Qualified accounting and audits are needed. Credit analyses and investigations are required of firms and individuals with whom tribes may plan to operate enterprises jointly. These needs, along with the increased volume of loans and financing through the Bureau, cannot be met by the present staff.

Plan of work.—Financing is basic in the program for the development and utilization of Indian resources. Operations are patterned to meet the requirements of expanding Indian participation and self-reliance in business ventures. The objective is to utilize Indian resources and enterprises in a manner that will insure maximum Indian employment, income, and training through management participation.

Activation of the Indian economic development program requires that financing be approached in many different ways. Every industrial, commercial, or business development requires planned financing, whether it is to be operated on an individual, tribal, or cooperative basis, or as a joint venture in association with non-Indian interests. Assistance is required (1) to seek and obtain financing from private sources; (2) to determine the economic soundness of new ventures; (3) to insure the most businesslike operations; and (4) to minimize dependence upon Federal financing.

The Bureau's credit program requires Indians to exhaust all possible sources of private financing, and to utilize their own funds to finance developments, before loans by the United States are considered. This is in accordance with the recommendations in the "Report of the Committee on Federal Credit Programs" of February 11, 1963.

STATUS OF PROGRAM

Financing by customary financial institutions.—Financing of Indians by the same sources available to other citizens has continued to make progress. It is estimated that the total was over $103.3 million in the calendar year 1963, compared with about $33.9 million in 1954. Most of this increase has been in connection with the financing of individual Indians. This program needs extension to the financing of tribal and group enterprises and to developments that may be operated in collaboration with non-Indians.

Indian resources.—Indian organizations are using increased amounts of their own funds for credit purposes. The total amount in use has increased from $17.3 million in 1955 to $36.5 million in 1964. Individually owned trust or restricted land also is being utilized, under authority of the act of March 29, 1956 (25 U.S.C. 483a), to obtain financing. Nearly $3 million was owed on outstanding loans at the close of the calendar year 1963, secured by mortgages of trust land executed under this authority.

Financing through Bureau.—The Bureau provides credit when it is not otherwise available.

Financing through the Bureau is by means of the revolving fund for loans, which presently is too small to meet the need for funds to supplement those available from commercial and tribal sources.

Loans totaling $6.7 million were made during the fiscal year ended June 30, 1964. This exceeds the amount loaned through the first 10 years after establishment of the fund by the act of June 18, 1934 (25 U.S.C. 470). At June 30, 1964, applications were either approved (subject to the availability of funds) or pending, in a total amount more than $39.5 million in excess of the available cash balance. S. 1049 before the Congress authorizes an increase of $35 million in the fund. Other legislation is being proposed that would also increase the fund $35 million. Pursuant to the recommendations in the above-mentioned "Report of the Committee on Federal Credit Programs," legislation also is being proposed to authorize the Secretary of the Interior to guarantee repayment of not to exceed 75 percent of the amount of any loan made to an Indian organization or to an Indian of one-quarter or more degree of Indian blood. In lieu of such guarantee, the proposed bill authorizes the Secretary to insure loans under an arrangement whereby the lender will be reimbursed for losses up to 15 percent of the aggregate of insured loans made by it.

(c) *Economic development*

The estimate of $3,856,000 is an increase of $374,500 consisting of—

(1) a decrease of $97,500 due to program savings resulting from improved manpower utilization and program adjustments; and

(2) an increase of $472,000 to provide additional staff to handle workload resulting from claims awards and for staff required in the low-rent and mutual-help housing program.

Need for increase.—The increase of $472,000 will provide additional staff to handle the greatly increased workload resulting from claims awards. Included in this workload are the development of special legislation to identify and locate the beneficiaries of the awards and the preparation of current membership and claims payment rolls. Also, to develop and help carry out plans for the use of judgment funds. The amount requested will also provide staff required in the planning, development, and execution of the low-rent and mutual-help housing program.

Plan of work.—The achievement of substantial economic growth on Indian reservations requires the preparation and periodic updating of comprehensive reservation development programs. Programs are based on current inventories and evaluations of reservation resources and assets and on estimated projections to unemployment and other indicators of human needs. They take into account principal barriers to economic progress and the lessons of experience as time goes on and are designed to furnish continuing guidelines for improvement operations and activities. The programs are intended to assist tribes in keeping current their own planning and coordination efforts, in forming organizations, and in selecting undertakings for increasing employment and income, and similar purposes. Full participation of Indians is encouraged, along with the efficient use of their own funds combined with Federal and private funds to finance program costs.

Reservation programs include statements of goals relating the human needs to resources and aimed at the progressive relief of Indian poverty. They also include action priorities and schedules, estimates of costs and projected means of financing, community acceptability, emphasis on new ideas, and means of adaptation and integration of existing programs. When fully developed, the plans will stress economic development, but will also set forth land use and zoning plans, transportation and public facilities systems, and long-range scheduling and timing of actions and proposed financing. Thus reservation communities will be made more favorable as environments for economic advance and for social progress.

On the basis of the comprehensive program, promising proposals are selected for action or for further economic study. Studies embody feasibility determinations based on analyses, finances, cost-benefit ratios, payout, sources of investment funds, operating capital and credit, adequacy of raw materials, transportation facilities and costs, markets and marketing, manpower requirements and availability, management and operating plans. Detailed plans are also prepared for land use, transportation, and public facilities and for improved utilization of the various types of reservation resources.

The Bureau of Indian Affairs will continue to encourage the establishment of manufacturing plants, the development of areas, and establishment of commercial recreational and tourism enterprises on Indian reservations in order to create employment, job training opportunities, and tribal revenue. Technical assistance and services are required for a wide range of industries, such as wood products, manufacturing plants, processing of fish and other food products, and commercial recreation and tourism.

Continued emphasis will be placed on plant locations, site selections, industrial contracts and other functions related to the establishment of industrial enterprises, on development of commercial recreational and tourism enterprises, and on boys' and girls' summer camps on Indian reservations. In this connection, Indian groups will be encouraged and assisted in seeking out and negotiating with private individuals and corporations to establish such operations on Indian reservations.

Industrial and commercial recreational and tourism development are long-range programs requiring much local planning, giving due consideration to the overall economic community and the utilization of the total physical and human resources of the areas, and continuous negotiations with private business. The unified efforts of the (1) Indian tribes, (2) local non-Indian communities, (3) State and county economic development organizations, and (4) the Bureau of Indian Affairs, are required.

The Bureau will continue to be responsible for assisting tribes with developing and amending constitutions and charters in order to enable them better to take advantage of programs of economic development and housing. It will provide staff assistance to the Bureau and the Department in interpreting the intent of constitution and charter provisions. It will also aid tribes to develop their annual budgets and to institute administrative procedures safeguarding the expenditure of funds pursuant to these budgets. Additionally, it will assist tribes in matters of enrollment, will process their requests for per capita and dividend payments, will help them develop "family plans" for the use of tribal funds, and will consider their ordinances and resolutions which require review or approval by the Commissioner or the Secretary.

The Bureau staff will continue to process the contracts of claims attorneys which require departmental approval, to organize tribal meetings for the purpose of approving compromises in claims litigation, to assist the Indian Claims Commission with auditing attorney expense vouchers, to keep the tribes informed as to the progress of their cases, to undertake the research necessary to prepare legislation defining beneficiaries of claims awards, to develop payment rolls, to assist tribes with planning for the use of their judgment funds, and to process the application of Indian tribes for loans with which to finance their litigation.

The mutual-help housing program has aroused great interest among the Indians. Under the mutual-help program, the family contributes its labor in the construction of the home, the Public Housing Administration provides funds for the materials and the minimum of essential skilled labor, and the Bureau provides organizing and supervision services utilizing existing services in the Bureau insofar as possible for family selection, social welfare guidance, credit problems, and assistance and supervision during design and construction phases.

Mutual-help housing is a program designed to meet the housing needs of low-income Indian families on reservations. To meet the needs of these Indian families, the Housing and Home Finance Agency (under the U.S. Housing Act of 1937) provides financial aid for housing. The Bureau of Indian Affairs proposes to provide technical services and supervisory assistance. Through the establishment of local tribal housing authorities, Indian tribes are to provide the organization and mutual Indian help contributions. Under the program, individual Indian participants through their efforts can construct and own their own homes. An agreement between the HHFA and BIA was established on May 29, 1963, to define the extent of participation by both agencies. Under this agreement, the BIA is required to:

"1. Designate, for each mutual-help project, a representative of the BIA to act as a coordinator with the PHA and tribal housing authority.

"2. Assist the tribal government in the preparation of the workable program for submission to the Housing and Home Finance Agency.

"3. Aid the tribal housing authority in the preparation of the application for program reservation for submission to the PHA. To support the application, the BIA will conduct and prepare, or assist the tribal housing authority in the conduct and preparation of, sample surveys and reports on income, existing housing, family sizes, and attitudes toward mutual-help participation.

"4. Assist the tribal housing authority in the preparation of the development program, including site selection and description, preliminary sketches, outline specifications, utility analyses, budgets (including costs for materials, participant contributions, and nonparticipant leadsman and skilled craftsmen), and data on financial feasibility.

"5. Assist the tribal housing authority to prepare dwelling unit designs, site plans, engineering studies, and preliminary and final working drawings and specifications.

"6. Assist the tribal housing authority with site selection and land acquisition services, including appraisals, engineering surveys, soil investigations, maps, title evidence, negotiations, and other actions and documents, as necessary.

"7. To the extent they are not adequately provided by the tribal housing authority or otherwise without charge to the mutual-help project or participants, the BIA will provide the tribal housing authority with adequate construction services, including overall superintendence, inspection (including quality of materials and construction and adherence to specifications), working documents, purchasing, accounting, cost control, and security of materials, equipment, and tools.

"8. Assist the tribe in encouraging, within the limits of economy and feasibility, the use in the projects of locally developed or manufactured materials or products.

"9. Upon request of the tribal housing authority or the PHA, the BIA will

assist the authority in the establishment, subject to approval of the PHA, of maximum income limits, operating charges, and other conditions of eligibility and occupancy applicable to participants, and in the selection and organization of qualified participants and replacements for any of the participants.

"10. Determine, or assist the tribal housing authority in establishing, wage rates for the participants and for any nonparticipants employed in the development of the projects.

"11. To the extent that the BIA or the PHA determines that administrative services are not adequately provided by the tribal housing authority or otherwise without charge to the mutual-help project or participants, the BIA will provide for administration of the project. The expenses of such administration may be repaid in whole or in part by the tribal housing authority from the monthly service charges paid by the mutual-help participants. Such administration will include selection and certification of eligibility of participants, collection of participant payments, maintenance of book of accounts, preparation of budgets, preparation of required reports and financial statements, periodic reexamination of participants' income, inspection of dwellings to assure proper housekeeping and maintenance, maintenance and repair in case of participants' failure to take such action, obtaining of required insurance coverage, provision of legal services when necessary, and enforcement of all requirements of the agreement between the participant and the housing authority.

"12. Upon request by the PHA, the BIA will review and approve operating budgets and insurance policies for the project and transmit them to the PHA; conduct fiscal audits, management reviews, occupancy audits, and maintenance engineering surveys; certify to the PHA that the low-rent character of the project is being maintained and that the other requirements of the tribal housing authority's annual contributions contract are being met; and take any steps necessary to obtain correction of any deficiencies found.

"13. Coordinate with the Public Health Service for the provision of health and sanitary facilities for anticipated or proposed projects. Where the PHS will not be able to provide such facilities in time for the completion of an anticipated or proposed project, the BIA, the PHA, and the tribe will arrive at a mutually satisfactory arrangement for the provision of such health and sanitary facilities as a condition to proceeding with the project. The BIA will certify to PHA that PHS specifications for installation, inspection, and performance of such facilities have been met.

"14. Endeavor to formulate training programs for the mutual-help participants in order to obtain the highest level of competence in the construction and maintenance of their homes."

4. SOIL AND MOISTURE CONSERVATION

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Soil and moisture conservation	$5,878,888	$5,539,000	$5,487,000	−$52,000

The estimate of $5,487,000 is a decrease of $52,000 due to program savings resulting from improved manpower utilization and program adjustments.

Plan of work.—The soil and moisture conservation technicians work directly with Indian people in an effort to teach them the advantages of conserving their soil, forage, and water resources. This close working relationship makes it possible to do a better job of planning for the use and development of these resources. A high percentage of these technicians are members of the local tribe who understand local customs and the need for conservation. These persons are a part of work units which are located away from agency and area headquarters, so that they are accessible to the Indian, the lessee, and close to the land with which they are concerned. These technicians have the closest possible direct contact with Indians in the area they serve. Conservation measures are designed to fit each set of soil, slope, and erosion condition and are needed to (1) correct ravages of erosion and depletion; (2) protect still productive land against erosion and depletion; and (3) improve productivity of the soil.

The estimate of $5,487,000 will provide funds for the following major program features:

1. Land use investigations and planning	$1,600,000
2. Application of measures	3,100,000
(a) Soil stabilization and improvement	1,500,000
(b) Water management	1,600,000
3. Operation and maintenance	787,000
Total	5,487,000

During 1966, the program will continue to provide farm, ranch, watershed, and reservation plans for the utilization and development of Indian soil, water, and forage resources. These plans will be based on information provided by soil and range inventories being made as a part of this program.

Emphasis will be placed on continuing the close working relationship with Indian people with specific guidance toward increasing the productive capacity of Indian resources. Greater Indian participation in the watershed protection and flood prevention program as authorized by Public Law 566, 83d Congress (68 Stat. 666). The value of many Indian farms can be increased by being included in these projects.

The operation and maintenance program will provide for closer compliance checks to assure continued application of planned conservation measures resulting from the expenditure of soil and moisture conservation funds. Each year the cost of operation and maintenance increases because there are more applied practices to maintain.

Soil and moisture conservation program by program features—Bureau of Indian Affairs

Program features	SMC expenditures			Cooperators expenditures		
	Actual, 1964	Estimate, 1965	Estimate, 1966	Actual, 1964	Estimate, 1965	Estimate, 1966
Land-use investigations and planning	$1,585,285	$1,597,700	$1,600,000	$1,480,688	$1,345,000	$1,140,000
Application of measures:						
Soil stabilization and improvement	1,829,740	1,491,600	1,500,000	18,020,935	16,696,000	17,240,000
Water management	1,486,253	1,597,700	1,600,000	3,823,530	5,155,000	5,415,000
Operation and maintenance	977,610	852,000	787,000	1,084,830	1,185,000	1,316,000
Total	5,878,888	5,539,000	5,487,000	24,409,983	24,381,000	25,111,000

5. MAINTENANCE OF ROADS

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Maintenance of roads	$3,102,095	$3,612,600	$3,799,000	+$186,400

The estimate of $3,799,000 is an increase of $186,400 consisting of—

(1) A decrease of $13,600 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $200,000 for regular maintanence on 301 miles of additional schoolbus routes that previously had received only occasional maintenance and a needed upgrading of the regular maintenance on the heavy traffic roads from $284 per mile to $298 per mile, an increase of $14 per mile.

Need for increase.—The accelerated school program and the economic development programs on the Indian reservations have caused a wider use of reservation roads in the previously semi-isolated areas. This increased use results in a need

of upgrading the road maintenance on 301 miles of reservation roads from "occasional maintenance" to "regular maintenance." The increase will allow the required maintenance of schoolbus routes over which the schools must transport supplies, personnel, and schoolchildren. The increase of $14 per average mile of heavy traffic roads is required to offset increased costs of labor, material, and equipment and because of the higher volume of traffic using the roads. This increased use of the roads causes a need of more frequent and better operations by the maintenance crew.

Dependable transportation over reservation roads is essential to the maximum utilization of school facilities. To contribute to the success of the educational program, road maintenance must, therefore, be increased to adequately serve the new schools and also the existing schools. Experience has shown that schoolbus routes require regular and complete maintenance for continued mechanical operation of the buses, to remove road hazards, and also assure good daily school attendance.

The social, economic, and educational activities on the Indian reservations are dependent upon regular transportation between the Indian homes and schools or community centers. This required transportation is over the local roads which are maintained under this program.

Plan of work.—An area budget classification breakdown of the plan of work for 1966 follows:

Area	Total funds	Miles heavy traffic	Amount regular maintenance	Miles light traffic	Occasional maintenance	Amount heavy maintenance	Amount special maintenance	Amount airstrip maintenance
Aberdeen	$579,000	1,520	$503,000	478	$42,000	$19,000	$15,000	
Anadarko	104,000	142	47,000	354	38,000	9,000	10,000	
Billings	414,000	681	255,000	1,094	130,000	19,000	10,000	
Gallup	1,019,600	3,494	870,000	1,684	105,000	14,000	10,000	$20,600
Juneau	36,000	17	7,000			19,000	10,000	
Minneapolis	208,400	395	156,000	148	12,000	20,400	20,000	
Muskogee	109,000	282	84,000			14,000	11,000	
Phoenix	614,000	1,662	430,000	2,054	160,000	9,000	15,000	
Portland	484,000	916	310,000	1,663	150,000	14,600	10,000	
Sacramento	113,000	178	71,000	120	9,000	23,000	10,000	
Washington	118,000	76	60,000	77	30,000	18,000	10,000	
Total	3,799,000	9,363	2,793,000	7,672	676,000	178,400	131,000	20,600

(*a*) *Regular maintenance.*—9,363 miles of heavy traffic roads, $2,793,000; this sum provides for surface repair, blading, snow removal, ditch cleaning, removing rock, trees, weeds, and maintaining bridges and culverts. Average cost is $298 per mile.

(*b*) *Occasional maintenance.*—7,672 miles of light traffic roads, $676,000; this sum provides for work required to keep secondary roads and trails open to travel, such as blading, removing slides, filling washouts, removing trees, and occasional shaping. Average cost is $88 per mile.

(*c*) *Heavy maintenance (major restoration).*—$178,400; this sum provides for reshaping roadbed, spot resurfacing, and major repairs to bridges and culverts.

(*d*) *Special maintenance.*—$131,000; this sum provides for the repair of major damage caused by storms, fires, floods, etc.

(*e*) *Flight strip maintenance.*—$20,600; this sum provides for surface blading of 20 flight strips which have been constructed in areas for emergency air transportation.

6. DEVELOPMENT OF INDIAN ARTS AND CRAFTS

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Development of Indian arts and crafts	$312,308	$325,600	$365,000	+$39,400

The estimate of $365,000 is an increase of $39,400 which will provide funds to cover the operation of the Blackfeet Museum at Browning, Mont. Prior to fiscal year 1966 this museum has been funded under the "Education and welfare services" appropriation.

Plan of work.—The function of the Indian Arts and Crafts Board, as set forth in the act of Congress of August 27, 1935, which created the Board, is to encourage and promote the development and expansion of Indian arts and crafts so as to increase the revenue from this source to the end that arts and crafts may become a larger factor in the self-support and economic development of Indian people, as well as to assist in preserving their cultural heritage.

Field work is conducted directly with Indian artists and craftsmen by arts and crafts specialists located in strategic areas. Advisory assistance is given in all phases of craft promotion, including development of new products based on traditional skills and techniques which will meet the current demands of the buying public.

The Indian Arts and Crafts Board is currently responsible for the operation and management of two museums: Southern Plains Museum and Craft Center, Anadarko, Okla., and Sioux Museum and Craft Center, Rapid City, S. Dak. These two museums have an international reputation and are in the unique position of reaching a public interested in the finest of contemporary Indian arts and crafts, as well as in the preservation and exhibition of some of the finest examples of traditional Indian craftsmanship.

7. MANAGEMENT OF INDIAN TRUST PROPERTY

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(*a*) Land management	$4,733,792	$5,413,000	$5,359,000	−$54,000
(*b*) General trustee services	1,041,098	1,106,600	1,070,000	−36,600
(*c*) Employee compensation payments	79,760	138,000	232,000	+94,000
Total	5,854,650	6,657,600	6,661,000	+3,400

(*a*) *Land management*

The estimate of $5,359.000 is a decrease of $54,000 consisting of—

(1) A decrease of $204,000 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $150,000 which will provide some strengthening of staff, particularly in the heavily allotted reservations where caseload is the greatest.

1. *Real property management.*—The estimate of $4,184,000 is an increase of $42,000 consisting of—

(1) A decrease of $108,000 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $150,000 which will provide some strengthening of staff, particularly in the heavily allotted reservations where caseload is the greatest.

Need for increase.—Major emphasis is being placed on the improvement of management techniques. Special attention is to be focused on the unitization of Indian lands for more useful and economically feasible operations. About one-fourth of the 50-million-acre Indian estate is owned by individual Indians. The fragmentation which began with the allotment system gravely impaired the land's ability to yield a fair return to the Indian owners.

We believe a carefully planned reorientation of management concepts for individual holdings will result in (1) marked increase in cash returns, (2) a consequent release of pressure for sales and preservation of the Indian estate, (3) opportunity for the owners of small interests to sell out to other Indians, and (4) reduced costs of Bureau management.

Plan of work.—To the fullest possible extent, the Bureau will continue to meet the needs of individual Indians and Indian tribes as landowners for requested real estate transactions, such as surface and subsurface leases, acquisitions, exchanges, partitions, sales, and consolidation of fractionated interests into less complex title patterns. The Bureau will continue to work with the Indian landowners in planning ahead for development of their real property resources.

Boundary surveys continue to be needed to resolve boundary disputes and in a day-to-day property management work.

The demand for Indian land for all purposes (recreational, industrial, residential, commercial, as well as farming and grazing) continues, and will result in a continuing need for specialized land-use planning and management services not available from staff.

2. *Real estate appraisal*

The estimate of $1,175,000 is a decrease of $96,000 due to program savings resulting from improved manpower utilization and program adjustments.

Plan of work.—It is planned to continue to emphasize professional evaluation estimates as a guide to the fair market value for all real estate transactions. Recent comparisons between the fair rental estimates prepared according to professional appraisal standards and the previous contract rentals, at five jurisdictions, show an average increase of 67.5 percent. This increase in rentals clearly demonstrates the potential for a substantial increase over the $14 million annual surface income presently received from leases of Indian property.

(b) *General trustee services*

The estimate of $1,070,000 is a decrease of $36,600 due to program savings resulting from improved manpower utilization and program adjustments.

Plan of work.—The Bureau is charged by various laws and regulations with the trust responsibility of accounting for a disbursing individual Indian moneys which come into the custody of Bureau officials as a result of administering trust or restricted properties of individual Indians, through per capita payments, judgments, awards, and claims. Indian Service special disbursing agents are designated to carry out these responsibilities.

In addition, trustee management is required for minors and those Indians who unable to manage their affairs because of the lack of training in business affairs and the difficulties of communication due to inability to speak English. Such management includes the disbursement of funds under a planned program for the care of minors, with portions set aside for investment purposes for future use.

This subactivity also finances positions of field representatives who serve as contact representatives with the Indians at the reservation level and who perform work connected with the activities concerned with administration of trust properties.

(c) *Employee compensation payments*

The estimate of $232,000 is an increase of $94,000 which will provide funds to reimburse the employees' compensation fund for payments made on account of the injury or death of employees under the jurisdiction of this agency as required in section 209 of Public Law 86-767.

8. REPAIR AND MAINTENANCE OF BUILDINGS AND UTILITIES

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Repair and maintenance of buildings and utilities	$10,457,216	$11,799,300	$12,765,000	+$965,700

The estimate of $12,765,000 is an increase of $965,700 consisting of—

(1) A decrease of $134,300 due to program savings resulting from improved manpower utilization and program adjustments.

(2) An increase of $1,100,000 for routine and recurring repair and maintenance of newly constructed buildings and attendant utilities and services, and to meet the normal increased cost of supplies, materials and equipment.

Need for increase.—The increase of $1,100,000 is required to provide for routine and recurring repair and maintenance of 2,488,000 square feet of newly constructed buildings and attendant utilities and services, and to meet the normal increased cost of supplies, materials, and equipment.

Cost breakdown for increase of $1,100,000:

Repair and maintenance of newly constructed buildings	$622,000
Repair and maintenance of additional utilities and services	328,000
Overall increase in cost of supplies, materials, and equipment	150,000
Total	1,100,000

Plan of work.—The repair and maintenance of buildings and utilities is a continuing program. Funds requested are used to provide normal maintenance and repairs to Bureau physical plant facilities located throughout the United States. These facilities include 9,600 individual buildings having a total floor area of 28,800,000 square feet and separate utility systems including the following:

(1) 574 water systems comprising 480 storage tanks having a capacity of 24,964,000 gallons; 527 wells with pneumatic systems, chlorinators, filters, clarifiers, water softeners, sump and settling tanks, sprinkler irrigation systems, fire hydrants and mains; and more than 8,986,000 lineal feet of water distribution systems;

(2) 478 sewage systems comprising 257 septic and Imhoff tanks having a capacity of 2,160,000 gallons; 221 lagoons with a capacity of 21,327,000 gallons, storm sewers, filter beds, lift stations, sumps and pumps, cesspools, and 11,395,000 lineal feet of distribution lines; 71,077 plumbing fixtures including water closets, urinals, tubs, lavatories, sinks, fountains, etc.;

(3) 3,134 fuel systems comprising 768 liquid petroleum gas systems with a capacity of 3,951,000 gallons and 10,673,000 lineal feet of distribution lines, 2,341 oil systems with a capacity of 13,177,000 gallons and 961,000 lineal feet of distribution lines, 25 coal storage bunkers with a capacity of 3,124 tons;

(4) 390 electrical systems with 360 electrical generators (diesel, gas, steam) with a capacity of 11,520 kilowatts; distribution lines approximately 618 miles in length;

(5) 444 communication systems comprised of 43 telephone systems having 1,087 telephones and 1,044 miles of distribution lines; and 401 radio systems with 1,718 receiver/transmitters;

(6) 362 heating plants (oil fired, gas fired, high pressure) having capacity of 1,914,870,000 B.t.u. per hour;

(7) Miscellaneous systems including 111,386 cubic feet of "walkin" refrigeration with a capacity of 1,357 tons; 1,585 air-conditioning systems with a capacity of 143,201,000 B.t.u. per hour; 468 individual locations having in excess of 41,000 acres of grounds with 26,894 improved acres; 2,110,000 lineal feet of sidewalks, curbs, and gutters; 2,119,000 lineal feet of fences and walls, and other items, such as garbage dumps, land fills, air compressors, gasoline storage tanks, railroad sidings, docks, windmills, fire lookout towers, etc.

Commercial facilities are not available to serve the Bureau's isolated locations, therefore, complete services including heat, light, power, water, sewer, garbage, etc., required to operate schools, dormitories, kitchens, dining halls, quarters, office buildings, shops, garages, and other educational and recreational facilities, etc., must be operated and maintained by the Bureau.

Utilities maintained at most locations are equivalent to those of an average community and in many locations are much more extensive due to central plants which provide electrical power, hot water, steam, etc.

In addition to normal operating requirements, these systems must be maintained on an uninterrupted 24-hour basis to insure the health and safety of Indian school children and Bureau personnel. Occupancy of most Bureau facilities on a 24-hour basis places increased loads on plants which accelerates deterioration and requires more than the usual time and expenditures to keep Bureau buildings and utilities in operating condition.

9. OPERATION, REPAIR AND MAINTENANCE OF INDIAN IRRIGATION SYSTEMS

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
Operation, repair, and maintenance of Indian irrigation systems	$1,188,134	$1,315,900	$1,313,000	−$2,900

The estimate of $1,313,000 is a decrease of $2,900 due to program savings resulting from improved manpower utilization and program adjustments.

The estimate of $1,313,000 is to cover annual operation and maintenance charges assessed against Indian-owned lands included within various private and public irrigation districts and water user associations, annual contract payments authorized by the Congress; and annual operation and maintenance costs for those projects not included within private or public irrigation districts and water user associations.

There are approximately 300 irrigation systems on various Indian reservations west of the Mississippi River, ranging in size from tracts of a few acres such as subsistence garden tracts to major projects of over 100,000 acres.

All collections are deposited in the operation and maintenance receipt account and are available for operating and maintaining the respective projects pursuant to the provisions of the act of August 7, 1946 (60 Stat. 895). These collections include payments by Indian and non-Indian water users and payments made on behalf of Indian water users who are financially unable to pay their assessments which have previously been paid from reimbursable appropriated funds are deposited directly into the Treasury to the miscellaneous receipt account as a repayment of reimbursable indebtedness. Where non-Indians receive water services from Indian irrigation systems they are required to pay the full per acre cost. The above referred to irrigation systems and projects fall in the following categories:

1. Projects which are economically feasible on the basis that there is a sufficient quantity of water to supply the assessable area. The lands have characteristics which will produce crops under sustained irrigation and have repayment capabilities which will permit land-owners and water users as a whole to pay the full annual cost of operating and maintaining the system. The assessment rates on these projects are fixed to return the full operation and maintenance cost. Any unpaid assessment becomes a lien against the land for which the assessment is not paid.

Funds requested for payment of assessments under this category will be used when necessary to pay into the collection account that part of the uncollectible current annual per acre assessment against Indian owned lands. Funds so paid into the collection account to cover such unpaid assessments become reimbursable debts due the United States.

2. Projects where the repayment capabilities of the land will not permit payment to the full annual operation and maintenance costs. Assessment rates for Indian water users on these projects are based on the ability of the Indian to pay and therefore do not cover the full cost of operation and maintenance. All or any portion of any unpaid assessment becomes a lien against the land for which such assessment is not paid.

Funds requested for payment of costs under this category will be used when necessary to pay into the collection account that part of the annual operation and maintenance cost on Indian-owned lands in excess of the annual assessment and any part of the uncollectible annual per-acre assessment against Indian-owned lands. Funds so paid into the collection account to cover these costs become reimbursable debts due the United States when used to pay all or any part of the annual costs included in the assessment rate. Costs in excess of the assessment rate are non-reimbursable.

3. Irrigated areas, such as subsistence garden tracts and tracts of a few acres which do not represent economical units but do provide Indian landowners with a means of supplementing their livelihood. Because of the low income of the Indian landowners and water users on these irrigated areas and tracts, it is not feasible from an economic standpoint to assess these lands. Accordingly, the operation and maintenance costs are nonreimbursable and do not become a lien against the lands benefited.

Funds requested for payment of costs under this category will be used when necessary to pay into the collection account the total cost for operation and maintenance of these subsistence garden tracts and irrigated areas, or if no collection account has been established and it is not desirable or proper to establish such an account, the funds will be expended when necessary directly from the appropriation account.

4. Irrigation systems and reservoirs serving Indian-owned lands located within and operated by various private and public irrigation districts and water user associations. Assessments for operation and maintenance of the irrigation systems and reservoirs serving these Indian-owned lands are made by the irrigation district or water users association embracing and serving such Indian-owned lands.

Funds requested for payment of assessments under this category will be used when necessary to pay into the collection account for payment to private and public irrigation districts and water users associations for operation and maintenance costs assessed for Indian-owned lands included within such irrigation districts and water users associations. Funds used for payment of assessments covering these costs are reimbursable and become debts due the United States except for those payments that are non-reimbursable by legislation.

5. Projects that are operated by this Bureau at no cost to the Indian landowners and water users as provided for under legislation.

Funds requested for payment of assessments under this category will be used when necessary to pay into the collection account appropriated funds for irrigation projects operated by this Bureau at no cost to the Indian water users as required by legislation.

SUMMARY BY SUBACTIVITY

Subactivity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
(a) Annual assessment payment	$125,189	$128,420	$123,744	−$4,676
(b) Annual water payment	40,000	40,000	40,000	
(c) Operation and maintenance of irrigation systems	1,022,945	1,147,480	1,149,256	+1,776
Total	1,188,134	1,315,900	1,313,000	−2,900

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$37,839,028	$41,114,000	$42,956,000	$1,842,000
Transferred from "Management and investigations of resources", Bureau of Sport Fisheries and Wildlife (78 Stat. 207)	−60,000			
Transferred to "Operating expenses, public buildings," general administration (75 Stat. 353)	79,798			
Unobligated balance lapsing	272,474			
Appropriation	38,131,300	41,114,000	42,956,000	1,842,000
Obligations by objects:				
11 Personnel compensation	23,904,724	25,670,000	26,170,000	500,000
12 Personnel benefits	1,738,612	2,058,000	2,190,000	132,000
21 Travel and transportation of persons	1,473,450	1,547,000	1,747,000	200,000
22 Transportation of things	970,533	1,028,000	1,044,000	16,000
23 Rents, communications, and utilities	816,415	801,000	873,000	72,000
24 Printing and reproduction	72,408	35,000	40,000	5,000
25 Other services	2,331,914	2,417,000	2,754,000	337,000
Services performed by other agencies	570,750	600,000	600,000	
26 Supplies and materials	3,593,718	4,281,000	4,582,000	301,000
31 Equipment	1,331,565	1,613,000	1,769,000	156,000
32 Lands and structures	102,679	138,000	118,000	−20,000
33 Investments and loans	22,015	30,000	30,000	
41 Grants, subsidies, and contributions	1,487,355	1,475,000	1,618,000	143,000
42 Insurance claims and indemnities	3,386	3,000	3,000	
Subtotal	38,419,524	41,696,000	43,538,000	1,842,000
Deduct quarters and subsistence charges	580,496	582,000	582,000	
Total obligations	37,839,028	41,114,000	42,956,000	1,842,000

WATER AND FENCING ON MESCALERO INDIAN RESERVATION

Chairman HAYDEN. Last year, $200,000 was appropriated for the development of wells and related water facilities and fencing on the Mescalero Indian Reservation in New Mexico. What have you been able to accomplish along this line?

Commissioner NASH. With that $200,000, several wells were drilled. I do not know exactly how many. Mr. Fryer, do you have that?

Mr. FRYER. Two have been completed and four are in process.

FIRE SUPPRESSION

Chairman HAYDEN. Your estimate for "Fire suppression," $140,000, is the same amount as is customarily included in the budget. I am sure, however, that it will be necessary for you to request a supplemental appropriation to pay the expenses of firefighting during this past year. How much will it be necessary for you to request?

Commissioner NASH. We will be asking for $307,000 in the supplemental.

ESKIMO REINDEER IMPROVEMENT AND EXPANSION PROGRAM

Chairman HAYDEN. In fiscal year 1965 you initiated a program for expansion and improvement of the reindeer herds among the Eskimos. How much did you make available for this purpose in fiscal year 1965 and how much are you requesting for it in fiscal year 1966?

Commissioner NASH. The 1965 amount was $70,000 and we are asking for $133,000 additional now, to start the long-range reindeer improvement and expansion program.

I might say our plan of operations, Mr. Chairman, is based primarily upon the herd at Nunivak Island which is very seriously overstocked. We would like to use that Nunivak herd as the foundation herd, first, for some nearby islands and accompany this by the training of Eskimo people in the husbandry of reindeer, after which we would then expect to move small segments of these herds to the mainland.

The chairman, perhaps, knows this was attempted many years ago and did not succeed. As Senator Bartlett knows, and I know from occasional flights, you see the abandoned reindeer corrals along the south side of the Seward Peninsula, and in the Bethel area.

We think that the reason for the failure was the lack of intensive training of the Eskimo people in how to handle the herds. The technique of handling reindeer is European; it is not a local animal.

Chairman HAYDEN. Couldn't you send for some Finns?

Commissioner NASH. This might be a good idea, sir.

Senator BARTLETT. This is what they used to have; Laplanders, Mr. Chairman.

On that point, do the Eskimos, Commissioner Nash, turn readily to herding reindeer? Do they like this?

Commissioner NASH. They like it, Senator Bartlett, but they also like to go away and leave the herds: then, the predators get the reindeer and this is the basic reason why the previous experiment failed. We think that more intensive training in the need to stay with the herds will result in a greater success in that end of it, plus marketing research.

Chairman HAYDEN. They don't always like to herd 12 months a year then?

Commissioner NASH. Not everyone does, sir, or 24 hours a day.

LEGISLATION TO IDENTIFY AND LOCATE BENEFICIARIES OF CLAIMS AWARDS

Chairman HAYDEN. You indicate that a part of the workload, resulting from claims awards, is the development of special legislation to identify and locate the beneficiaries of the awards. Is there any requirement that the cost of identifying and locating these beneficiaries be paid from the judgment awards?

Commissioner NASH. This depends, Mr. Chairman, upon the nature of the decision by Senator Watkins' Commission. Sometimes, the judgment says that the cost should be paid for from the judgment awards. And on other occasions it does not. In any event, the Commission and the Indian people rely upon us for the maintenance of rolls, the determination of beneficiaries, and much of this depends on enrollment work and other on-going work of a routine nature that ought to be kept up whether there are awards or not.

The need then becomes acute and intensive on any occasion upon which award is made by the Commission.

FUNDING OF INDIAN ARTS AND CRAFT MUSEUMS

Chairman HAYDEN. Under the subactivity relating to development of Indian arts and crafts, it is stated that $39,400 is needed to cover the operation of the Blackfeet Museum. The Indian Arts and Crafts Board is also responsible for operating and managing the Southern Plains Museum and Crafts Center and the Sioux Museum and Crafts Center. How much is required for each of these museums?

Commissioner NASH. May we supply that for the record, Mr. Chairman?

Chairman HAYDEN. That may be done.

(The in formation referred to follows:)

Required operating expenses for the Southern Plains Indians Museum and Craft Center, Anadarko, Okla., is $24,150; the Sioux Indian Museum and Craft Center, Rapid City, S. Dak., $29,010.

MINERAL SURVEY ON FORT APACHE INDIAN RESERVATION

Chairman HAYDEN. At my request you have furnished me a statement relative to the desirability of a mineral survey on the Fort Apache Indian Reservation. I shall place that statement in the record.

(The statement referred to follows:)

MINERAL SURVEY ON THE FORT APACHE RESERVATION

Determined effort has been made by the BIA to obtain funds for the U.S. Bureau of Mines to conduct mineral investigations on the Fort Apache Reservation. The request was submitted to ARA for financing, but was refused on the grounds such financing of primary resources nature should be provided by the Interior agencies. No other source of funds are available. The estimated cost of the survey is $40,000, and the length of time it takes to prepare such a survey is a year and a half.

BIA, in keeping with its program of economic development on the Indian reservations, endorses such a survey should the money become available. The Bureau of Mines would be in a position to initiate a survey of this nature.

Chairman HAYDEN. The cost of the survey which would actually be accomplished by the Bureau of Mines is $40,000. Do you believe that such a survey would be of real benefit to the economy of this reservation?

Commissioner NASH. I believe so; yes, sir.

CONSTRUCTION

Chairman HAYDEN. There will be placed in the record your statement in justification of your budget estimate for fiscal year 1966 for construction in the amount of $68,975,000, an amount $16,966,000 greater than was appropriated last fiscal year.

(The justification referred to follows:)

Appropriation 1965		$52,009,000
Unobligated balance from prior years		12,591,854
Total available for obligation		64,600,854
Decreases:		
Buildings and utilities	$52,277,155	
Irrigation systems	11,561,996	
Land acquisition	11,703	
		63,850,854
Subtotal		750,000
Increases:		
Buildings and utilities	58,902,000	
Irrigation systems	10,200,000	
Less savings resulting from improved manpower utilization and program adjustments	−127,000	
		68,975,000
Budget estimate, 1966		69,725,000

Analysis by activities

Activity	Fiscal year 1965 amount available	Fiscal year 1966			Increase (+) or decrease (−) Total available 1966 compared to total available 1965
		Unobligated balance from prior year	Budget estimate	Estimated total available	
1. Buildings and utilities	$52,277,155		$58,822,000	$58,822,000	+$6,544,845
2. Irrigation systems	11,561,996	$750,000	10,153,000	10,903,000	−658,996
3. Land acquisition	11,703				−11,703
Total	63,850,854	750,000	68,975,000	69,725,000	+5,874,146

1. BUILDINGS AND UTILITIES, $58,822,000

CONSTRUCTION OF FACILITIES

This estimate of $58,822,000 includes a decrease of $80,000 due to program savings resulting from improved manpower utilization and program adjustments.

This estimate places emphasis on meeting the growing need of Indian children for high school seats. This plus the need of an increasing school age population is provided for through new construction, expansion, and improvement of obsolete school facilities, replacement of unsafe conditions and some relief for present overcrowding.

Considerable progress has been made in recent years in the school facility construction program to provide facilities for increasing school populations. This is a continuing need and future budgets must provide for the annual increase in school populations. Planning for the replacement of obsolete facilities must include the expansion necessary to provide space for increasing populations related to the geographic location to be served by each school. It must also include a 5-year growth factor in relationship to each project where the known preschool population indicates growth.

The Bureau is cooperating with State and local agencies to provide school facilities for Indian children. Where it is in the best interest of the Indian children, they are placed in public school. Where public schools are not available,

the Bureau must continue to provide facilities. The State of Alaska is developing with the Bureau of Indian Affairs, a joint policy for education of all Alaska children. This will require the construction of facilities in the native villages by the Bureau. These facilities will eventually be turned over to the State for operation.

In addition to the need for school facilities, this estimate includes funds for the construction of employee housing, for urgently needed water and sanitary sewer facilities, and for some jail facilities. It also includes funds for advance planning of future projects. The appropriation of funds for advance planning of new projects has enabled the Bureau to step up the construction program. This has resulted in getting more children into school and some relief of overcrowding, and replacement of obsolete facilities. A list of projects in this estimate and their justifications follow:

Buildings and utilities construction program, fiscal year 1966

Summary of projects by States

	Estimated cost
New construction:	
Alaska:	
Barrow utilities	$610,000
Mount Edgecumbe High School, phase I	6,860,000
Shageluk Day School	646,000
Sheldon Point Day School	357,000
Tyonek Day School	715,000
Total, Alaska	9,188,000
Arizona:	
Cibecue Day School	987,000
Dilcon Elementary School	3,667,000
Hahazatel Consolidated Day School	1,542,000
Many Farms High School	8,945,000
Moenave High School	8,945,000
Whiteriver Municipal Center	319,000
Total, Arizona	24,405,000
Mississippi: Choctaw Central High School, dormitory and quarters	1,000,000
New Mexico:	
Albuquerque High School	13,017,000
Automatic data-processing center equipment	475,000
Total, New Mexico	13,492,000
North Dakota: Standing Rock water system	345,000
Oklahoma:	
Cheyenne-Arapaho Boarding School	2,850,000
Fort Sill dormitories	1,142,000
Total, Oklahoma	3,992,000
Bureauwide:	
Quarters, various	700,000
Water exploration and development	300,000
Advance planning	400,000
Total, new construction	53,822,000
Major alterations and improvements	5,000,000
Grand total	58,822,000

Major alterations and improvements, bureauwide, $5,000,000

The major alterations and improvements program is designed to: (*a*) correct unsafe and unsanitary conditions in Bureau facilities which are to be continued in use for a period of at least 10 years; (*b*) correct functional deficiencies in existing Bureau facilities because of changing program requirements, technological advances, etc., and (*c*) the modernization of obsolete facilities in existing plants.

Since the 1959 safety survey, high priority has been given to the correction of unsafe and unsanitary conditions with primary emphasis given to conditions existing in school and dormitory facilities. Funds provided for this purpose under this program, plus increased funds for new construction, have been used to the extent possible to correct and eliminate the major deficiencies as reported in the 1959 survey. Some of these deficiencies, however, still remain to be corrected. This program does not include the correction of deficiencies in buildings which have been scheduled for replacement under the construction program.

1. *Correction of unsafe and unsanitary conditions.*—This category includes items of work falling within the major alterations and improvement program based on the criteria established in 1959 safety survey, such as, enclose open stairwells; provide adequate fire exits and escapes; remodel unsanitary kitchens, toilets, etc.; eliminate structural deficiencies; replace unsafe wiring and electrical equipment; correct by replacement those unsanitary sewer and water treatment storage and disposal facilities, etc. The total program for fiscal year 1966 is $2,110,000.

2. *Correction of functional deficiencies.*—This category includes items of work falling within the major alterations and improvement program to overcome functional deficiencies, such as, poor arrangement of rooms; inadequate or limited space; structural and utility changes to accommodate the replacement of deficient equipment, where required in existing facilities; expansion of sewer, water, electrical, communications, and other utilities; construction of ice cellars; replacing chemical toilets with modern toilet facilities; providing heated vehicle storage space in arctic zones; providing additional office space for expanding or new activities within existing office buildings; converting heating plants for operating efficiency; construction of garbage and refuse disposal facilities and work of a similar nature. The total program for fiscal year 1966 is $1,550,000.

3. *Modernization of existing facilities.*—Work under this category consists of the modernization of existing facilities scheduled for use for 10 or more years, including installation of modern kitchens, bathrooms, lighting fixtures, heating systems, etc., which are not unsafe or unsanitary, but are obsolete due to age or for other reasons. The total program for fiscal year 1966 is $1,340,000.

2. Irrigation Systems, $10,153,000

This estimate of $10,153,000 includes a decrease of $47,000 due to program savings resulting from improved manpower utilization and program adjustments.

These funds will provide for the continuation of irrigation development work on existing and approved irrigation projects on Indian reservations located in the arid and semiarid West where the conservation and development of lands and water for agricultural irrigation are of fundamental importance to enable the Indian to become self-supporting and to make proper use of his land and water resources. The development and extension of irrigation projects on Indian reservations are primarily for the benefit of resident reservation Indian families. The facilities, however, also directly benefit the surrounding community, as well as non-Indian-owned lands included within the projects. Most Indian-owned land is devoted to growing supplemental feed for the 41 million acres of rangelands. The success of stockraising is largely dependent on an adequate supply of winter feed which can be produced on irrigated land. The early completion of new and existing-continuing projects will make possible the determination of final per acre construction costs for reimbursement purposes and will greatly facilitate the program and policy of the Bureau in transferring the responsibility for operation and maintenance of the systems to the waterusers.

The type of work proposed is the construction, extension, rehabilitation, and betterment of irrigation systems; land clearing and leveling; and surveys and investigations.

The major structures and canal systems are completed, or nearing completion, on many of the existing projects. The work now proposed on these projects will consist primarily of extending canals and laterals, land clearing and leveling, extension of drainage systems, and rehabilitation and betterment of existing irrigation projects.

The Navajo Indian irrigation project embraces 110,630 acres of land. The complete development of this project includes additional studies, preparation of a definite plan report, and construction of canal, laterals, and structures.

There was initiated during the fiscal year 1961, a program for the preparation of rehabilitation and completion reports for all existing and authorized projects and feasibility reports for new and unauthorized projects. When completed these reports will provide a complete and up-to-date inventory of project acreages, irrigation facilities and needs and requirements for long-range planning. It is anticipated that the completion and rehabilitation reports will be completed by 1966.

Irrigation construction, $8,645,760

This estimate provides funds for irrigation construction consisting primarily of extending canals and laterals with necessary structures, land clearing and leveling, and extension of drainage systems.

Surveys, investigations, plans, and reports, $155,000

This item represents the amount required for the continuation of surveys, investigations, studies, and plans started in the fiscal year 1961 for the preparation of feasibility, completion (definite plan), and rehabilitation and betterment reports to be made for all existing Indian irrigation projects under the jurisdiction of the Bureau of Indian Affairs. This work is necessary in order to establish a program for completing existing Indian irrigation projects presently authorized, developing additional Indian irrigation resources, and for the rehabilitation and betterment of existing irrigation works with a view to transferring the operation and maintenance of the projects from the Government to acceptable water user organizations. This item also provides funds for surveys and investigations and the preparation of detailed plans and specifications for construction of irrigation projects and the extension and improvement of existing projects. The program includes the study of water supplies and water rights, survey for damsites for storage and diversion purposes, canal and lateral system location surveys, soil and sampling analysis and hydropower studies, and the protection of Indian water rights.

Rehabilitation and betterment, $843,200

This estimate provides funds for making major repairs and improvements on existing irrigation facilities.

Engineering and supervision, $491,886

This item represents the amount required to pay salaries, office rent, travel expenses, and miscellaneous expenses incidental to executing the irrigation program proposed for the fiscal year 1966. Staff employees engaged in irrigation activities are located in the central or Washington office and five area offices, located in Phoenix, Ariz., Billings, Mont., Portland, Oreg., Sacramento, Calif., and Gallup, N. Mex.

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$47,864,330	$63,850,854	$69,725,000	+$5,874,146
Transferred to "Operating expenses, Public Buildings Services," General Services Administration	75,884			
Unobligated balance available, start of year	−1,232,068	−12,591,854	−750,000	+11,841,854
Unobligated balance available, end of year	12,591,854	750,000		−750,000
Appropriation	59,300,000	52,009,000	68,975,000	+16,966,000
BUREAU OF INDIAN AFFAIRS				
Obligation by objects:				
11 Personnel compensation	7,467,054	8,736,304	8,701,924	−34,380
12 Personnel benefits	383,854	477,000	474,076	−2,924
21 Travel and transportation of persons	566,289	663,430	675,000	+11,570
22 Transportation of things	564,065	796,174	970,000	+173,826
23 Rent, communications, and utilities	315,867	439,258	445,000	+5,742
24 Printing and reproduction	63,798	66,400	85,000	+18,600
25 Other services	1,392,911	2,686,242	3,075,000	+388,758
Services of other agencies	657,299	709,373	715,000	+5,627
26 Supplies and materials	4,133,276	5,372,917	6,273,000	+900,083
31 Equipment	1,917,155	2,647,000	3,208,000	+561,000
32 Lands and structures	28,595,781	36,262,926	37,912,000	+1,649,074
42 Insurance claims and indemnities	1,159			
Subtotal	46,058,508	58,857,024	62,534,000	+3,676,976
Deduct quarters and subsistence charges	58,232	58,628	59,000	+372
Total, Bureau of Indian Affairs	46,000,276	58,798,396	62,475,000	+3,676,604
ALLOCATION ACCOUNTS				
Obligations by objects:				
11 Personnel compensation	750,219	1,273,314	1,405,900	+132,586
12 Personnel benefits	57,619	97,449	106,400	+8,951
21 Travel and transportation of persons	50,148	67,850	86,100	+18,250
22 Transportation of things	12,266	11,200	21,000	+9,800
23 Rent, communications, and utilities	14,531	26,187	28,400	+2,213
24 Printing and reproduction	5,565	7,100	9,250	+2,150
25 Other services	184,954	15,800	231,380	+215,580
Services of other agencies	34,520	118,759	55,500	−63,259
26 Supplies and materials	23,810	36,000	41,800	+5,800
31 Equipment	23,583	32,925	10,250	−22,675
32 Lands and structures	706,839	3,365,874	5,252,020	+1,886,146
42 Insurance claims and indemnities			2,000	+2,000
Total, allocation accounts	1,864,054	5,052,458	7,250,000	+2,197,542
Total obligations	47,864,330	63,850,854	69,725,000	+5,874,146
Obligations are distributed as follows:				
Bureau of Indian Affairs	46,000,276	58,798,396	62,475,000	+3,676,604
Bureau of Reclamation	1,848,262	4,983,999	7,250,000	+2,266,001
Corps of Engineers	15,792	68,459		−68,459

Committee Direction That Construction Projects Proceed Within Fiscal Year for Which Funds Appropriated

Chairman Hayden. In its report on fiscal year 1965 appropriations, this committee stated that projects and activities included in budget programs should proceed within the fiscal year for which the funds are requested. Have you been able to comply with this statement?

Commissioner Nash. Yes; we have a statement along that line. The Senator asked in the report whether we would be able to comply and the answer, Mr. Chairman, is as follows: The Bureau is complying with the directive of this committee to the extent that it is possible to do so.

It must be pointed out, however, that the award of construction contracts for all of the projects does not obligate all of the appropriated funds. Construction time will vary with the size of the project, usually 2 years before a project is completed.

Funds for furniture and equipment, on-the-job supervision, and contingencies will be obligated at varying times over this 2-year construction period. This means that between 15 and 20 percent of the appropriation amount would normally not be obligated within the fiscal year in which the funds were appropriated, even though construction was started on all of the projects appropriated for.

Chairman HAYDEN. Would you please place in the record a table of the construction projects, for which funds were available during fiscal year 1965, showing the status of each of the projects, the amount expended thus far for each of them, and the amount remaining of the sum provided for each of them?

Commissioner NASH. Yes; we have that and we will provide it for the record.

(The insormation referred to follows:)

Branch of Plant Design and Construction

Buildings and utilities, fiscal year 1965

Project names	July 1, 1965, funding	Design stage	Scheduled bid opening date	Contract awarded or materials ordered	Mar. 31, 1965, obligations	Balance unobligated
Aberdeen area:						
Flandreau Water and Fire Station	$175,000	Completed	May 18, 1965		0	$175,000
Rosebud School completion	510,564	Prior year		June 17, 1964	$48,730	461,834
Fort Yates jail	250,000	Completed		Feb. 15, 1965	230,745	19,255
Fort Yates water	(1)					0
Fort Totten jail	150,000	Started	June 15, 1965		0	150,000
Wahpeton dormitory	540,000	Completed		Mar. 31, 1965	522,326	17,674
Anadarko area:						
Chilocco dormitory and utilities	1,280,000	do		Nov. 6, 1964	1,078,266	201,734
Haskell vocational shops	798,000	do		Dec. 31, 1964	623,052	174,948
Billings area:						
Fort Belknap water	50,000	Started	Apr. 29, 1965		0	50,000
Fort Peck jail	157,000	Completed		Aug. 13, 1964	72,248	84,752
Wind River sewer	71,000	Started	May 12, 1965		0	71,000
Gallup area:						
Beshbito School	6,665,000	Complete	Apr. 13, 1965		10,162	6,654,838
Red Rock School	2,202,000	Deferred pending site selection with adequate water supply.				2,202,000
Rough Rock School	[2] 2,642,050	Prior year		Sept. 16, 1964	2,379,470	262,580
Huerfano School	2,465,000	Deferred pending acquisition of additional land			0	2,465,000
Ojo Encino School	520,000	Started	May 12, 1965		2,867	517,133
Sanostee School	2,654,000	do	June 16, 1965		13,611	2,640,389
Navajo auxiliary water supply	164,472	Complete		Mar. 13, 1964	74,379	90,093
Hahazatel School	103,600	Deferred pending land and water availability			0	103,600
Many Farms School	580,106	Prior year		Apr. 10, 1964	30,043	550,063
Kimbeto School	865,000	Started	May 11, 1965		4,019	860,981
Wingate High School	639,202	Prior year		June 28, 1963	71,121	568,081
Chuska School	686,554	do		do	414,540	272,014
Kaibeto school expansion	514,436	do		Jan. 20, 1964	118,123	423,313
Shonto school expansion	359,347	do		Feb. 12, 1964	32,065	327,282
Juneau area:						
Barrow Kit-MP building	725,000	Complete		Partial orders	212,650	512,350
Goodnews Bay School	[3] 147,366	do		Material ordered	97,993	49,373
Kolinganek School	[3] 146,940	do		do	36,629	110,311
Mekoryuk School	552,000	do		do	210,555	341,445
Mountain Village School	[3] 214,227	do		do	210,614	3,613
Koyuk School	354,000	do		do	116,074	237,926
Nome dormitory facilities	[4] 2,598,809	do		Aug. 18, 1964	2,212,814	385,995
Tuluksak School	361,000	do		Material ordered	124,211	236,789

See footnotes at end of table.

BRANCH OF PLANT DESIGN AND CONSTRUCTION—Continued

Buildings and utilities, fiscal year 1965—Continued

Project names	July 1, 1965, funding	Design stage	Scheduled bid opening dates	Contract awarded or materials ordered	Mar. 31, 1965, obligations	Balance unobligated
Juneau area—Continued						
Alitak utility building	[1] $38,000	Complete		Materoal ordered	$37,798	$202
Old Harbor School addition	109,789	Prior year		do	3,347	106,442
Port Lions School	216,907	do		do	34,110	182,797
Kasigluk School	209,387	do		do	163,543	45,844
Barrow High School	1,210,633	do		do	978,945	231,688
Elim School	185,188	do		do	120,046	65,142
Kotzebue High School	1,647,468	do		do	876,253	771,215
Muskogee area:						
Sequoyah High School	2,220,000	Complete	Apr. 21, 1965		9,658	2,210,342
Choctaw Central High School	206,801	Prior year		June 30, 1964	34,347	172,454
Jones Academy water improvements.	52,574	do		Dec. 7, 1964	48,321	4,253
Phoenix area:						
Phoenix dormitories	1,119,213	do		July 10, 1964	992,160	127,053
Sherman dormitories and utilities	3,700,000	do		do	3,252,165	447,835
Stewart sewer improvements	[4] 155,000	Complete		Oct. 9, 1964	153,804	1,196
San Carlos irrigation	[4] 126,000	Funds withdrawn from Albuquerque account			0	0
Portland area:						
Coleville water	64,000	Started	Apr. 15, 1965		0	64,000
Wellpinit Jail	125,000	do	June 17, 1965		0	125,000
Bureauwide:						
Quarters, various	700,000	Complete	May 14, 1965	Jan. 12, 1965	305,632	394,368
Water exploration	390,000	do	Various	Various	79,545	310,455
Advance planning	400,000	Started		June 15, 1965 (A–E)	0	400,000
Miscellaneous projects [6]	633,016				448,250	184,766
Unprogramed balance	487,500				[7] 455,000	32,500
July 1 availability	44,165,149				[8] 17,090,231	[8] 26,948,918

[1] Combined with advance planning (Bureauwide).
[2] Includes funds from both fiscal year 1964 and fiscal year 1965 appropriations.
[3] Total program is $300,000 to replace burned school. $85,773 was spent on advance purchase of materials.
[4] Savings used to finance emergency projects as follows:

Alitak utility building	$38,000
Stewart sewer improvements	155,000
San Carlos irrigation project	126,000
Total	319,000

[5] Emergency projects funded from savings on Nome dormitory facilities.
[6] Includes small unobligated balances to complete 65 various projects.
[7] $455,000 has been used to meet contract overruns.
[8] Does not include the $126,000 withdrawn for the San Carlos irrigation project.

CONSTRUCTION SAVINGS AND ACCOMPLISHMENTS

Chairman HAYDEN. The conference report on the Department of the Interior appropriation bill for fiscal year 1965 directs the Bureau of Indian Affairs to prepare a statement of accomplishments and savings achieved during the fiscal year in connection with its construction program for which sufficient funds were provided to fully finance the construction program. Would you please place a statement in the hearing record?

Commissioner NASH. Yes, sir; we have it and we will provide it.

(The statement referred to follows:)

STATEMENT OF ACCOMPLISHMENTS, FISCAL YEAR 1965

In accordance with the conference report of the Department of the Interior appropriation bill for fiscal year 1965, directing the Bureau of Indian Affairs to prepare a statement of accomplishments and savings achieved during the fiscal year in connection with its construction program for which sufficient funds were provided to finance fully the construction program, we submit the following:

Much of the construction activities of the Bureau of Indian Affairs, during the early part of the fiscal year, have been concerned with the design and bidding stage of the 1965 projects and with the award of contracts and construction of 1964 and prior-year projects. Considerable time and effort has been devoted to site selection, clearing of land titles, engineering soil testing, and exploration for adequate potable water supply before drawings and specifications can be completed for construction. In connection with the 1965 projects, 8 projects were under design; 19 projects have the design completed; 6 projects are out for bid; 8 projects have been awarded; 5 projects were started by force account; 3 contracts were awarded for soil testing; and 2 projects are delayed pending site clearance. It is difficult to determine, with any reasonable degree of accuracy, the probable savings on the 1965 projects at this time, due to a number of factors.

These factors are:

1. Wages for force account work are obligated only as the work is accomplished; therefore, the savings, if any, will not be known until the projects are completed.

2. Furniture and equipment are ordered only about 6 months before a project is completed. Since most projects take 2 years to construct, the savings, if any, will not be known until near the end of the job.

3. Funds set up for construction contingencies are not obligated until change orders are approved during the construction of a project. As noted in item 2, any savings will not be known until the project is complete or nearing completion.

Out of the eight projects on which construction contracts have been awarded, and the five projects started by force account, no appreciable savings can be forecast at this time, except the $339,000 from the Nome Dormitory project. This savings was reported to the committees and, subsequently, these funds were programed to accomplish emergency work at Stewart School and at the San Carlos irrigation location.

TOTAL COST OF BARROW UTILITIES

Chairman HAYDEN. Am I correct in my figuring that the total cost of the Barrow utilities, for which you request $610,000 in fiscal year 1966, will be $1,150,000?

Commissioner NASH. Mr. Kethro can answer that.

Mr. KETHRO. That is correct.

Commissioner Nash: $610,000 is the first phase, isn't it, Mr. Kethro?

HIGH SCHOOL CONSTRUCTION PROGRAM

Mr. KETHRO. The first phase was partially destroyed by the large storm that came into Barrow.

Chairman HAYDEN. Is the Mount Edgecumbe High School an addition to the present plant or is this a replacement for the high school now in existence?

Commissioner NASH. The program at Mount Edgecumbe is to remodel the existing plant, replacing some facilities totally and rehabilitating others.

Chairman HAYDEN. With regard to each of the five high schools for which you propose funds in fiscal year 1966, and in view of the committee report of last year, what consideration has been given to placing the children for whom these high schools are planned in a State-operated public high school which is attended also by non-Indian children?

Commissioner NASH. We have given full consideration to that, Mr. Chairman, and the report on the Bordertown School goes into this matter along with the general examination of the Bordertown program. Many of the children who would be enrolled in the Federal boarding schools under this program are either so far behind in grade, or have English language difficulties, that they do not meet the criteria established by the public schools in the Bordertown.

The on-reservation public schools are filled to capacity and are just beginning to grow. We mean to help them grow. But they don't have the capability of meeting the need at the present time. This is why we are asking for the boarding school appropriation.

Chairman HAYDEN. In each of these high schools how many Indian children are proposed for enrollment during the first year?

Commissioner NASH. May we provide that for the record, Mr. Chairman? We have it.

Chairman HAYDEN. All right.

(The information referred to follows:)

In each of the five high schools for which funds are proposed for 1966 we expect to fill these schools to capacity by enrolling high school students in a regular high school program, and by enrolling high school age youth in an ungraded program.

DISTANCE TO AND ELIGIBILITY FOR PUBLIC SCHOOLS

Chairman HAYDEN. For each of these high schools how far is it to the nearest off-reservation town?

Commissioner NASH. With respect to the high schools for which we are asking money?

Chairman HAYDEN. Yes.

Commissioner NASH. We are asking for three high schools in the Southwest, two on the Navajo reservation besides the rebuilding of

the Albuquerque school which will be in the metropolitan area of Albuquerque. In the case of the Moenave High School, the nearest off-reservation town is Flagstaff, Ariz., a distance of about 70 miles. The Many Farms High School is located approximately 110 miles from Gallup, N. Mex., which is the nearest off-reservation town.

We are also requesting the rehabilitation of the Mount Edgecumbe High School which is across a small bay from Sitka, Alaska.

The fifth item dealing with high schools is a dormitory for the Choctaw Central High School. The nearest town is Philadelphia, Miss., which is about 9 miles away.

Chairman HAYDEN. In each case have you communicated with the appropriate public school authorities to determine whether these children can be placed in the State-operated schools?

Commissioner NASH. We have been in touch with the public school authorities in those towns in connection with the Bordertown survey. As a reading of the Bordertown survey will show, the public school authorities in the off-reservation communities require that these children be not more than 1 year behind grade.

This automatically limits the number of children who can be sent to the schools. In addition to that, Mr. Chairman, the memorandums of understanding and the contracts which are drawn up annually pursuant to them with the off-reservation communities contain an element that is objectionable, I think, to this committee, certainly to me.

It was brought to light by this study. The memorandums of agreement, for example, with the Albuquerque public school district provides that not more than 30 percent of the children enrolled in the Albuquerque public schools will be Indians, Indian children in any one grade or homeroom.

And the placing of such a quota restriction, seems to me, is not consistent with public policy of today.

DISTANCE CHILDREN TRAVEL TO RESERVATION SCHOOLS

Chairman HAYDEN. How far do the children who will attend these schools on the reservation have to travel?

Commissioner NASH. It would vary, but we transport some children from the remote villages of Alaska to Salem, Oreg. We transport some Navajo children in the special Navajo program as far as from the Navajo reservation to Brigham City, Utah, and Salem, Oreg., where many overage Navajos go to school.

ADVANTAGES OF FEDERAL BOARDING SCHOOLS

Chairman HAYDEN. Why is it more advantageous to the Indian children to attend boarding schools on the reservation than to be enrolled in State-operated schools off reservations?

Commissioner NASH. Well, as I indicated in my discussion, Mr. Chairman, of the Bordertown program, there are very important educational needs of the Indian children that are not being met in the public schools whether or not they are part of the Bordertown program.

The dropout rate in the public high schools, I think, is indicative of a serious educational deficiency. There are needs as to English language capability, there are needs in vocational education that are not being met by the public schools, there are needs for counseling and guidance and there are needs for special emphasis in subjects that are

not closely related to the background of Indian children which are in the background of other children.

We attempt to provide those in a coherent, integrated way in our Federal boarding schools. We have a long way to go but we are improving all the time. And I do not have the sense of a similar improvement in the public schools. In fact, our records indicate that we are now beginning to get a feedback from the public schools where the failure to meet this educational need results in an application to our boarding schools.

Lower Two Medicine Dam

Chairman Hayden. Last year it was indicated that construction of the Lower Two Medicine Dam would not be initiated until after this committee had had an opportunity to review the plans. What can you tell me about the projected design for this dam?

Commissioner Nash. Mr. Chairman, the Bureau of Reclamation was given the responsibility of designing the project. There were some design problems that arose and some site problems that arose. Mr. Blout is here from the Bureau of Reclamation.

Mr. Blout. I am Edwin A. Blout of the Bureau of Reclamation. The specifications and plans for the restoration of the Lower Two Medicine Dam are now going forward and we expect to have invitations for bid out in June of this year. This will be a dam at the Lower Two Medicine site for storage of 13,500 acre-feet similar to the capacity of the lake that was destroyed by the floods of last June.

Road Construction (Liquidation of Contract Authorization)

Chairman Hayden. There is a request for an appropriation of $16,900,000 in fiscal year 1966 for liquidation of contract authorization in connection with the Federal-aid highway contracts. This is $100,000 less than was appropriated last year. The justification statement will be included in the record.

(The justification referred to follows:)

Road Construction Contract Authorization and Liquidation Program

	Contract authority available	Obligations	Unliquidated obligations prior year	Obligations	Expenditures	Unliquidated obligations carried forward
Fiscal year 1964:						
Federal-aid highway roads	$16,970,165	$15,311,169	$5,197,460	$20,508,629	$13,397,983	$7,110,646
Navajo-Hopi, Routes 1 and 3	1,116,193	822,505	1,575,426	2,397,931	1,571,830	826,101
Total	18,086,358	16,133,674	6,772,886	22,906,560	14,969,813	[1] 7,936,747
Fiscal year 1965:						
Federal-aid highway roads	17,658,996	17,658,996	7,110,646	24,769,642	17,184,572	7,585,070
Navajo-Hopi, Routes 1 and 3	293,688	293,688	826,101	1,119,789	1,119,789	
Total	17,952,684	17,952,684	7,936,747	25,889,431	18,304,361	[2] 7,585,070
Fiscal year 1966:						
Federal-aid highway roads	15,906,000	15,906,000	7,585,070	23,491,070	16,900,000	6,591,070

[1] Available cash for liquidation is $1,304,361; balance of $6,632,386 is unfunded.
[2] Unfunded obligations.

Status of cash appropriations for liquidation of contract authorization

	1964	1965	1966
Appropriation	$15,000,000	$17,000,000	$16,900,000
Unexpended balance brought forward	1,274,174	1,304,361	
Total available	16,274,174	18,304,361	16,900,000
Less expenditures	14,969,813	18,304,361	16,900,000
Unexpended balance	1,304,361		

Road construction (liquidation of contract authorization), $16,900,000

Federal-aid highway roads:

1964	$16,133,674
1965	17,952,684
1966	15,906,000

The estimate of $15,906,000 includes a reduction of $94,000 due to program savings resulting from improved manpower utilization and program adjustments.

The Federal-Aid Highway Act of 1964 authorized $18 million for the construction of Indian reservation roads and bridges during the 1966 fiscal year. This $15,906,000 estimate includes $2 million of the contract authorization for fiscal year 1965, which was reserved in the 1965 budget, and $13,906,000 of the $18 million contract authorization for fiscal year 1966. This justification proposes that $4,094,000 of the 1966 authorization be reserved.

The Federal-Aid Highway Act of 1962 and the act of 1964 authorized, "For Indian reservation roads and bridges, $18 million for the fiscal year ending June 30, 1965, and $18 million for the fiscal year ending June 30, 1966." These sums are authorized to be appropriated for the purpose of carrying out the provisions of title 23 of the United States Code. Section 101 of that Code provides the definition of Indian reservation roads and section 203 provides that "funds authorized for Indian reservation roads shall be available for contract on a date not earlier than 1 year preceding the beginning of the fiscal year for which authorized;" * * *. Also, "the Secretary of the Department charged with the administration of such funds is granted authority to incur obligations, approve projects and enter into contracts under such authorizations and his action in doing so shall be deemed a contractual obligation of the United States for the payment of the cost thereof and such funds shall be deemed to have been expended when so obligated."

Tax-free Indian lands are not served adequately by State and county roads. There are reservations where county governments do not exist, and many instances where counties are not financially or administratively able to carry out the road function. As a result, Congress has recognized that the improvement and construction of roads and bridges serving Indian lands is a Federal responsibility and has authorized annual programs in the Federal-Aid Highway Acts.

The objective of the road construction program is to improve roads on the Bureau's designated road system to standards of adequacy that are commensurate with transportation needs. The need of dependable transportation facilities has increased with the expanded school building, education, economic development, and health programs. If available benefits are to be realized from the Bureau's social and economic development programs, road construction must keep pace and provide good all-weather roads to schools, Indian communities, tourist and industrial developments, and to the trade centers.

The following is a detailed description of the 1966 fiscal year program:

	Miles	Amount
(*a*) Grading and draining	380.7	$7,765,000
(*b*) Surfacing	549.3	6,331,000
(*c*) Bridge construction	[1] 1,401	564,000
(*d*) Future surveys and plans	527.1	1,246,000
Total		15,906,000

[1] Feet.

(a) *Grading and draining, $7,765,000*

This feature includes clearing rights of way, installing drainage structures and channels, and constructing a roadbed by excavating high ground and filling low ground. The resultant well-drained embankment, constructed with easy grades and flat curves, will provide a firm foundation for the surface course. The estimate provides that 380.7 miles will be so constructed. The average estimated cost per mile is $20,396.

(b) *Surfacing, $6,331,000*

Surfacing of the roadbed varies in complexity from light-traveled roads requiring natural material through crushed aggregate base and surface courses of differing depths to heavier-traveled roadways requiring bituminous or other paving materials. This estimate proposes to place base and surface aggregate on 223.2 miles and construct bituminous pavement on 326.1 miles for a total of 549.3 miles of surfacing. The average estimated cost of base and surface aggregate is $7,997 per mile. The average estimated cost of base, surface and bituminous paving is $13,941 per mile.

(c) *Bridge construction, $564,000*

This amount will construct 1,401 lineal feet of bridges. Most of these structures replace old, wornout, narrow or inadequate bridges. The average estimated cost per lineal foot is $403.

(d) *Future surveys and plans, $1,246,000*

This covers preliminary engineering, field surveys, design of road plans, preparation of estimates of cost and specifications for the construction of roads and bridges. The estimate will provide for 527.1 miles of road surveys and plans. The average estimated cost per mile is $2,364.

The 1966 fiscal year program is distributed to Areas as follows:

(1) *Aberdeen area, $2,100,000.*—The program provides for 65.2 miles of grading and draining, 78.3 miles of surfacing of which 44.1 is bituminous surfacing and 190 lineal feet of bridge construction. Locations are in three States as follows: Nebraska: Winnebago Reservation; North Dakota: Turtle Mountain Reservation, Fort Totten Reservation, Fort Berthold Reservation, and Standing Rock Reservation; South Dakota: Cheyenne River Reservation, Crow Creek Reservation, Lower Brule Reservation, Pine Ridge Reservation, Rosebud Reservation, and Sisseton Reservation.

(2) *Anadarko area, $500,000.*—The program provides for 21.5 miles of grading and draining, 15 miles of bituminous surfacing, and 250 lineal feet of bridge construction. Locations are in Oklahoma: Anadarko Reservation, Concho Reservation, Pawnee Reservation, and Shawnee Reservation.

(3) *Billings area, $1,150,000.*—The program provides for 32.3 miles of grading and draining, 58.5 miles of surfacing of which 41.8 miles are bituminous surfaced. Locations are in two States as follows: Montana: Blackfeet Reservation, Crow Reservation, Flathead Reservation, Fort Belknap Reservation, Rocky Boy's Reservation, Northern Cheyenne Reservation, and Fort Peck Reservation; Wyoming: Wind River Reservation.

(4) *Gallup area, $4,856,000.*—The program provides for 123.2 miles of grading and draining, 102 miles of surfacing of which 38.3 miles are bituminous surfaced and 180 lineal feet of bridge construction. Locations are in three States as follows: Arizona: Navajo Reservation; New Mexico: Navajo Reservation, Jicarilla Reservation, Mescalero Reservation, and United Pueblos and Zuni Reservation; and Colorado: Consolidated Ute Reservation.

(5) *Juneau area, $800,000.*—The program provides for 2.7 miles of grading and draining and 13 miles of surfacing of which 6.8 miles are bituminous surfaced. Construction is located in Alaska and includes projects at Barrow and Annette Island.

(6) *Minneapolis area, $600,000.*—The program provides for 25.4 miles of grading and draining and 49.5 miles of surfacing of which 5.9 miles are bituminous surfaced. Locations are in two States as follows: Minnesota: White Earth Reservation, Red Lake Reservation, and Grand Portage Reservation: and Wisconsin: Bad River Reservation, Lac du Flambeau Reservation, Lac Courte Oreilles Reservation, Potawatomi Reservation, and Red Cliff Reservation.

(7) *Muskogee area, $500,000.*—The program provides for 17.7 miles of grading and draining, 21.2 miles of surfacing of which 13 is bituminous surfaced and 38 lineal feet of bridge construction. Locations are in two States as follows: Mississippi: Choctaw Reservation; and Oklahoma: Five Civilized Tribes Reservation.

(8) *Phoenix area, $2,800,000.*—The program provides for 50.3 miles of grading and draining, 108.2 miles of bituminous surfacing and 315 lineal feet of bridge construction. Locations are in three States as follows: Arizona: Colorado River Reservation, Hualapai Reservation, Fort Apache Reservation, Hopi Reservation, Papago Reservation, Pima Reservation, Salt River Reservation, and San Carlos Reservation; Nevada: Nevada Reservation, Fort McDermitt Reservation, and Walker River Reservation; and Utah: Uintah and Ouray Reservation.

(9) *Portland area, $1,800,000.*—The program provides for 38.8 miles of grading and draining, 82.4 miles of surfacing of which 31.8 miles are bituminous surfaced and 240 lineal feet of bridge construction. Locations are in three States as follows: Idaho: Fort Hall Reservation and Coeur d'Alene Reservation; Oregon: Umatilla Reservation and Warm Springs Reservation; and Washington: Colville Reservation, Quinault Reservation, and Yakima Reservation.

(10) *Sacramento area, $500,000.*—The program provides for 2.6 miles of grading and draining, 5.6 miles of bituminous surfacing and 188 lineal feet of bridge construction. Location is in California: Round Valley Reservation, Hoopa Reservation, and Mendocino Reservation.

(11) *Washington area, $300,000.*—The program provides for 1 mile of grading and draining, 15.6 miles of bituminous surfacing and central office administration of the national program. Locations of the construction are in two States as follows: Florida: Big Cypress Reservation and Brighton Reservation; and North Carolina: Cherokee Reservation.

Federal-Aid Highway Roads

Area budget classification, breakdown, 1966

Area	Total	Grading and draining		Surfacing		Bridges		Surveys and plans	
		Miles	Amount	Miles	Amount	Feet	Amount	Miles	Amount
Aberdeen	$2,100,000	65.2	$1,140,000	78.3	$730,000	190	$60,000	99.0	$170,000
Anadarko	500,000	21.5	244,000	15.0	186,000	250	45,000	15.0	25,000
Billings	1,150,000	32.3	370,000	58.5	695,000	------	------	29.5	85,000
Gallup	4,856,000	123.2	3,180,000	102.0	1,210,000	180	80,000	160.0	386,000
Juneau	800,000	2.7	162,000	13.0	613,000	------	------	6.0	25,000
Minneapolis	600,000	25.4	264,000	49.5	288,000	------	------	41.6	48,000
Muskogee	500,000	17.7	290,000	21.2	159,000	38	14,000	20.0	37,000
Phoenix	2,800,000	50.3	1,345,000	108.2	1,120,000	315	160,000	62.5	175,000
Portland	1,800,000	38.8	560,000	82.4	945,000	240	95,000	74.5	200,000
Sacramento	500,000	2.6	130,000	5.6	185,000	188	110,000	11.0	75,000
Washington	300,000	1.0	80,000	15.6	200,000	------	------	8.0	20,000
Total	15,906,000	380.7	7,765,000	549.3	6,331,000	1,401	564,000	527.1	1,246,000

Itemization of estimate

	Actual 1964	Estimate 1965	Estimate 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$16,133,674	$17,952,684	$15,906,000	−$2,046,684
Unobligated balance available, start of year	−18,086,358	−19,952,684	−20,000,000	−47,316
Unobligated balance available, end of year	19,952,684	20,000,000	22,094,000	+2,094,000
Contract authorization (new) (permanent)	18,000,000	18,000,000	18,000,000	
BUREAU OF INDIAN AFFAIRS				
Obligations by objects:				
11 Personal compensation	5,078,748	5,930,912	5,881,662	−49,250
12 Personnel benefits	279,620	344,975	337,338	−7,637
21 Travel and transportation of persons	216,565	250,545	250,000	−545
22 Transportation of things	340,738	350,199	350,000	−199
23 Rent, communications, and utilities	400,223	399,768	400,000	+232
24 Printing and reproduction	9,956	9,760	10,000	+240
25 Other services	1,122,086	1,340,148	1,135,000	−205,148
Services of other agencies	54,141	49,948	50,000	+52
26 Supplies and materials	1,937,717	2,459,824	2,103,000	−356,824
31 Equipment	1,159,794	1,220,356	1,022,000	−198,356
32 Lands and structures	5,551,288	5,536,634	4,327,000	−1,209,634
41 Grants, subsidies, and contributions	1,576	2,278	2,000	−278
42 Insurance claims and indemnities	1,496			
Subtotal	16,153,948	17,895,347	15,868,000	−2,027,347
Deduct quarters and subsistence charges	64,001	61,885	62,000	−115
Total, Bureau of Indian Affairs	16,089,947	17,833,462	15,806,000	−2,027,462
ALLOCATION TO BUREAU OF PUBLIC ROADS, DEPARTMENT OF COMMERCE				
Obligation by objects:				
11 Personnel compensation	25,000	28,000	28,000	
12 Personnel benefits	2,000	2,000	2,000	
21 Travel and transportation of persons	5,000	5,000	5,000	
22 Transportation of things		1,000	1,000	
23 Rent, communications, and utilities		1,000	1,000	
25 Other services	5,000	5,000	5,000	
Services of other agencies	6,727	7,000	7,000	
32 Lands and structures		70,222	51,000	−19,222
Total, Bureau of Public Roads	43,727	119,222	100,000	−19,222
Total obligations	16,133,674	17,952,684	15,906,000	−2,046,684

Proration of Road Construction Work

Chairman Hayden. How much of your road construction is accomplished through force account and how much of it through contracts with private roadbuilding organizations?

Commissioner Nash. Our road construction program is approximately 50 percent contract and 50 percent force account at the present time, Mr. Chairman.

General Administrative Expenses

Chairman Hayden. The fiscal year 1966 estimate for general administrative expenses is $4,520,000, an increase of $189,000 over the amount appropriated last fiscal year. The justification for this request will be printed in the record.

(The justification referred to follows:)

General administrative expenses

Total appropriation, 1964	$4,265,000
Transferred to "Operating expenses, Public Buildings Service," General Services Administration	−660
Total available, 1964	4,264,340
Appropriation, 1965	4,331,000
Pay cost supplemental	189,000
Total available, 1965	4,520,000

SUMMARY OF INCREASES AND DECREASES, 1966

No increase is requested for this appropriation	----------
Total estimate, 1966	4,520,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965		
		Total appropriation	Pay cost supplemental	Amount available
1. Departmental	$1,231,580	$1,258,000	$62,000	$1,320,000
2. Field	2,997,182	3,073,000	127,000	3,200,000
Unobligated balance lapsing	35,578	----------	----------	----------
Total	4,264,340	4,331,000	189,000	4,520,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
1. Departmental	$1,231,580	$1,320,000	$1,320,000	----------
2. Field	2,997,182	3,200,000	3,200,000	----------
Unobligated balance lapsing	35,578	----------	----------	----------
Total	4,264,340	4,520,000	4,520,000	----------

No increase requested under this appropriation.

Plan of work.—The programs of the Bureau are administered from two organizational levels—the Washington office and the area offices. In the Washington office basic policy determinations are made, programs are evaluated, and operating procedures are developed; with the area offices carrying out the various programs and functions.

In the interest of efficiency and economy, the area offices perform the housekeeping functions for services common to all program activities. The benefiting program activities share part of the cost of these services based on the amount of administrative workload the program may create and the funds available to the program. The Bureau's proposed 1966 administration program totals $6,135,000, of which $4,520,000 is requested under the "General administrative expenses" appropriation and $1,615,000 allocable to program activities. A comparison of the program follows:

	1964	1965	1966	Change
Share of participating program activities	$1,375,000	$1,462,000	$1,615,000	$153,000
General administrative expenses appropriation	4,264,340	4,520,000	4,520,000	----------
Total, administration program	5,639,340	5,982,000	6,135,000	153,000

The total amount requested for "Administration," $6,135,000, is approximately 2.5 percent of the total funds requested for the entire Bureau in 1966.

Itemization of estimate

	Actual, 1965	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$4,228,762	$4,520,000	$4,520,000	
Transferred to "Operating expenses, public buildings service," General Services Administration	660			
Unobligated balance lapsing	35,578			
Appropriation	4,265,000	4,520,000	4,520,000	
Obligations by objects:				
11 Personnel compensation	3,356,996	3,596,053	3,626,553	+$30,500
12 Personnel benefits	246,404	270,500	273,000	+2,500
21 Travel and transportation of persons	205,204	230,000	230,000	
22 Transportation of things	20,293	23,000	23,000	
23 Rent, communications, and utilities	139,833	128,000	128,000	
24 Printing and reproduction	40,224	33,000	33,000	
25 Other services	54,946	34,000	34,000	
Services of other agencies	70,369	90,447	57,447	−33,000
26 Supplies and materials	65,928	75,000	75,000	
31 Equipment	28,565	40,000	40,000	
Total obligations	4,228,762	4,520,000	4,520,000	

TABLE SHOWING DERIVATION BY ACTIVITIES

Chairman HAYDEN. The material which you have furnished shows that in fiscal year 1966 you plan that $1,615,000, in addition to the appropriation requested, will be used for "General administrative expenses" and will be derived from participating program activities. Would you please place in the record a table showing the derivation by activities of this $1,615,000?

Commissioner NASH. Yes, sir.

(The table referred to follows:)

Distribution of facilitating administrative service charges, fiscal year 1966

Appropriation and activity	*Amount*
Education and welfare services:	
Educational assistance, facilities, and services	$594,600
Welfare and guidance services	109,100
Relocation and adult vocational training	204,300
Maintaining law and order	22,000
Total	930,000
Resources management:	
Forest and range lands	41,300
Agricultural and industrial assistance	87,000
Soil and moisture conservation	45,600
Maintenance of roads	34,000
Development of Indian arts and crafts	6,800
Management of Indian trust property	82,100
Repair and maintenance of buildings and utilities	43,600
Operation, repair, and maintenance of Indian irrigation systems	26,900
Total	367,300
Construction:	
Buildings and utilities	119,600
Irrigation systems	29,700
Total	149,300
Road construction (liquidation of contract authorization)	84,900
Operation and maintenance, Indian irrigation systems	69,000
Power systems, Indian irrigation projects	10,000
Missouri River Basin investigations	4,500
Grand total	1,615,000

MENOMINEE EDUCATIONAL GRANTS

Chairman HAYDEN. There will be placed in the record the justification statement for an appropriation of $44,000 for a grant to the State of Wisconsin in behalf of the Menominee Indian Tribe as a contribution to school costs. This is the last payment authorized under legislation approved in 1962.

(Justification referred to follows:)

Appropriation, 1964	$132,000
Appropriation, 1965	88,000
Decrease: School district costs	−44,000
Budget estimate, 1966	44,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965			
		Total appropriation	Pay cost supplemental	Transfers	Amount available
School district costs	$132,000	$88,000			$88,000

Analysis by activities

Activity	Fiscal year 1964 amount available	Fiscal year 1965 amount available	Fiscal year 1966 estimate	Increase (+) or decrease (−), 1966 compared with 1965
School district costs	$132,000	$88,000	$44,000	−$44,000

Need for estimate.—The $44,000 requested for 1966 will be used as a grant to the State of Wisconsin in behalf of the Menominee Indian Tribe as a contribution to school costs, as provided by Public Law 87–432.

Plan of work.—This program provides for grants to lessen the impact of the termination of Federal services to the Menominee Indian Tribe of Wisconsin. These grants will be made to the State of Wisconsin for contribution to joint school district costs. Legislation authorizing this action is contained in Public Law 87–432, approved April 4, 1962.

STATUS OF PROGRAM

Public Law 87–432, approved April 4, 1962, authorizes grants to the State of Wisconsin or the county or town of Menominee for contribution to joint school district costs. A total of $220,000 was authorized for 1962. This amount is decreased 20 percent each year for the next 4 succeeding years through 1966. The $44,000 requested in this estimate will be used to make the fifth and final payment authorized under the legislation.

REPORT ON ESTABLISHING TERMINATION

Chairman HAYDEN. Do you have any particular comment to make regarding this matter?

Commissioner NASH. Mr. Chairman, this is the last year of the program that was authorized at the time of the proclamation of the Menominee termination. The committee on the other side asked for a report to be made on the status of establishing the termination which we have made and which is in their hands.

Chairman HAYDEN. We can have a copy of that in our files?

Commissioner NASH. I assume so; yes, sir.

ADMINISTRATIVE PROVISIONS

Chairman HAYDEN. I will include in the record your statement regarding language changes, which will permit purchase of 233 passenger motor vehicles in the next fiscal year. Of this number, 186 are for replacement and 47 are additional vehicles.

(The justification referred to follows:)

EXPLANATION OF LANGUAGE CHANGE

The language provides for the purchase of 233 vehicles, of which 186 shall be for replacement only. Included in the 47 additional vehicles are 42 police-type vehicles needed to carry out the Bureau's responsibility in the area of law and order and 5 buses to meet the additional needs in transporting pupils to and from schools.

TOTAL NUMBER AND DISTRIBUTION OF VEHICLES

Chairman HAYDEN. Would you please insert in the record a statement to show where the 42 police-type vehicles are to go; also indicate the total number of such vehicles which you will have if this request is approved, and the distribution of them.

Commissioner NASH. That will be done.

(The statement referred to follows:)

LAW AND ORDER

The information below reflects the distribution by agency of 170 police-type vehicles for fiscal year 1965, plus 33 programed replacement vehicles during fiscal year 1966. No increase in the total number of police vehicles is currently programed for fiscal year 1966. However the authorization to acquire 42 new vehicles is requested so that the Bureau will have the authority if it becomes necessary to purchase vehicles that were formerly purchased by tribes. It is not possible at this time to foresee where these needs may arise.

Agency or reservation	Police vehicles, fiscal year 1965	Police vehicles replacements, fiscal year 1966
Aberdeen area office, Aberdeen, S. Dak.:		
Cheyenne River	2	
Crow Creek and Lower Brule	8	1
Fort Berthold	4	1
Pine Ridge	9	4
Rosebud	9	2
Sisseton	2	
Standing Rock	10	2
Fort Totten and Turtle Mountain	9	2
Billings area office, Billings, Mont.:		
Blackfeet	2	1
Crow	3	1
Flathead	2	1
Fort Belknap	5	1
Fort Peck	3	
Northern Cheyenne	3	1
Wind River	5	1
Gallup area office, Gallup, N. Mex.:		
Consolidated Ute Agency	3	1
United Pueblos Agency		
Zuni	6	1
Mescalero	6	1
Jicarilla	2	
Navajo	5	1
Minneapolis area office, Minneapolis, Minn.: Red Lake	6	2
Phoenix area office, Phoenix, Ariz.:		
Colorado River Agency	3	1
Papago	8	1
Pima	8	1
Salt River	4	1
San Carlos	5	1
Uintah and Ouray	1	
Hopi	6	1
Fort Apache	2	
Nevada Agency	7	1
Portland area office, Portland, Oreg.:		
Colville and Spokane	3	
Fort Hall	6	
North Idaho Agency	5	
Warm Springs	2	
Western Washington Agency	3	2
Yakima	3	
Total	170	33

TRIBAL FUNDS

Chairman HAYDEN. There will be placed in the record your statement in connection with tribal funds.

(The justification referred to follows:)

HIGHLIGHT STATEMENT

Funds have been deposited into the Treasury pursuant to various statutory acts of the Congress to be made available for expenditure for the use and benefit of the respective groups. The source of these funds is largely from income derived from Federal management of tribal real properties, the title of which is held in trust by the United States for the tribes. Another significant source

is judgments or awards made pursuant to either general or specific statutory authorities enacted by the Congress.

In certain cases, the Congress has enacted legislation which provides the Secretary of the Interior with continuing authority to carry out the provisions of the specific acts. Such authorities are referred to as permanent authorizations. Examples of such legislation are Fort Peck Indians, Montana (68 Stat. 329), Minnesota Chippewa Tribe of Indians (58 Stat. 271), and the Navajo Indians (64 Stat. 44). Funds covered by permanent authorizations, however, are included in annual budget presentations to give the Congress an opportunity to review the activity conducted under the authorities extended to the Secretary of the Interior.

In the absence of permanent expenditure authorization, annual appropriation by the Congress is required to permit the use of the funds. Such authority is provided annually in the Department of the Interior appropriation act and covers two categories: (1) Annual definite; and (2) annual indefinite.

Annual definite encompasses the use of funds, primarily, of those tribes who are not sufficiently organized to be represented by a recognized governing body. Funds programed under this type of authorization are not otherwise available for expenditure without congressional action and the $3 million requested for fiscal year 1965 is to provide the Secretary of the Interior with expenditure authority for the execution of programs, including such items as education of Indian children attending public or private schools, purchase of land and improvement thereon, compensation and expenses of tribal officers, councils, committees, and for various other purposes benefitting the particular Indian tribes. Expenditures made under this authority are individually made through Treasury regional disbursing offices, subject to the same regulations and procedures as appropriations from the general fund of the Treasury.

The annual indefinite authorization in the appropriation act provides the necessary authority, on an annual basis for the Secretary of the Interior, for such purposes as are designated by a particular tribe, to withdraw from the tribal accounts in the Treasury amounts which are to be advanced to bonded tribal treasurers of organized tribes to carry out programs approved by the Secretary and the conduct of tribal operations, including, but not limited to, management of tribal resources, and other programs designed to improve the situation of the general membership.

Approximately 300 Indian tribes, bands, or identifiable groups have approximately 600 accounts in the U.S. Treasury which are used for the conduct of tribal financial programs, enterprises, businesses, and other tribal affairs. These funds are available for various purposes, under various acts of Congress and are also subject to the provisions of tribal constitutions, bylaws, charters, and resolutions of the various tribes, bands, and groups.

Tribes who need their own funds which are on deposit in the U.S. Treasury are required to prepare budgets for approval. Tribal funds are programed under three categories; namely, permanent authorization, annual authorization, and indefinite authorization.

Funds programed under the permanent authorization are made available under various acts of Congress and can be disbursed either through the Treasury disbursing offices or advanced to a tribe for disbursement through the Indian Service disbursing agent's accounts or advanced to a tribe for disbursement by a bonded tribal treasurer under an approved plan of operation. These funds do not require annual approval by Congress, but are reported annually in the budget schedules. Funds programed under the annual authorization are disbursed through the Treasury disbursing offices, subject to the same procedures and limitations as appropriated gratuity funds and require annual approval by Congress. Funds programed under the indefinite authorization are made available under the annual Interior Department appropriation act under heading "Tribal Funds." These funds are advanced to tribes for disbursement by Indian disbursing agents or by bonded tribal treasurers under a plan of operation. Some Indian tribes employ more than one of the above methods in conducting their affairs. The following proviso makes these funds available: "* * * *Provided*, That, in addition to the amount appropriated herein, tribal funds may be advanced to Indian tribes during the current fiscal year for such purposes as may be designated by the governing body of the particular tribe involved and approved by the Secretary: *Provided further*, That funds derived from appropriations in satisfaction of awards of the Indian Claims Commission and the Court of Claims shall not be available for advances, except for such amounts as may be necessary to pay attorney fees, expenses of litigation, and expenses of program planning, until after legislation

has been enacted that sets forth the purposes for which said funds will be used: * * *".

In the last 10 to 15 years, many tribes have progressed to the point that they have taken over the management of their affairs and the disbursement of their funds under a plan of operation previously approved by the Secretary and it is the policy of the Bureau to encourage tribes in this respect. Annual audits made of tribal funds by certified accountants of commercial auditing firms are submitted to the Bureau for review and information.

Indian tribal funds

	1964	1965	1966
2. Annual authorization	$1,786,095	$3,000,000	$3,000,000

Comparative statement of annual authorization activities

	1964	1965	1966
1. Education and welfare services	$80,638	$102,924	$99,415
2. Resources management	699,958	672,174	690,838
3. Construction and land acquisition	373,804	445,000	433,100
4. General tribal affairs	631,695	1,779,902	1,776,647
Total	1,786,095	3,000,000	3,000,000

Analysis of annual authorizations by activities

Activities	1965	Deductions	Additions	1966
1. Education and welfare services	$102,924	$3,509		$99,415
2. Resources management	672,174		$18,664	690,838
3. Construction and land acquisition	445,000	11,900		433,100
4. General tribal affairs	1,779,902	3,255		1,776,647
Total	3,000,000	18,664	18,664	3,000,000

Tribal funds—Analysis of activities

Activity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
1. Education and welfare services	$80,638	$102,924	$99,415	−$3,509
2. Resources management	699,958	672,174	690,838	+18,664
3. Construction and land acquisition	373,804	445,000	433,100	−11,900
4. General tribal affairs	631,695	1,779,902	1,776,647	−3,255
Total	1,786,095	3,000,000	3,000,000	

Statement relating 1964, 1965, and 1966 programs

1964 appropriation (annual authorization)		$3,000,000
1965 budget estimates (annual authorization, including supplementals submitted to Congress)		3,000,000
Total appropriations for 1965		3,000,000
Deductions:		
Law and order	$3,609	
Agricultural extension	800	
Soil and moisture conservation	782	
Roads	2,000	
Management of Indian trust property	7,625	
Purchase of land	20,000	
Administrative expenses	1,565	
Compensation and expense of tribal attorneys	10,000	
Miscellaneous	2,142	
		48,523
Subtotal		2,951,477
Additions:		
Welfare	100	
Forest and range lands	24,678	
Credit	4,230	
Repair and maintenance facilities	963	
Equipment	8,100	
Tribal officers and council expenses	212	
Miscellaneous tribes	10,240	
		48,523
Total estimate for 1966 (annual authorization)		3,000,000

Plan of work.—No part of the funds contained in this estimate represents a charge upon the Federal Treasury. This item reflects the disbursement of funds to the credit of Indian tribes or bands under numerous special acts of Congress in compliance with the terms of the various trusts and for carrying out tribal programs recommended by the tribal governing bodies with the approval of the Commissioner of Indian Affairs.

The budget schedule reflects under the permanent authorization, disbursements from the tribal trust funds authorized by permanent legislation, and under the annual and indefinite authorizations, amounts requested annually by the various tribes for carrying out various tribal activities.

The estimate, therefore, is restricted to the funds requested annually as required by section 27 of the act of May 18, 1916 (39 Stat. 158).

STATUS OF PROGRAM

All amounts in the estimate have been requested properly by the Indians except the sum of $1,203,490 shown for miscellaneous tribes in the following tabulation. The amount under "Miscellaneous Tribes" is required to provide for additional resolutions that can be anticipated during the fiscal year.

Comparative statement of annual authorization by tribes

State, agency, and tribe	1964	1965	1966
Arizona	$126,354	$81,700	$85,500
Fort Apache Agency: White Mountain Apache	39,176	46,900	50,000
Pima Agency: Maricopa	5,678	6,500	6,500
Salt River Agency: Salt River Pima Maricopa	11,147	10,000	10,000
San Carlos Agency: San Carlos Apache	70,353	18,300	19,000
California	176,333	217,832	201,675
Agua Caliente	56,826	69,643	72,000
Barona	250	525	525
Baron Long	306	650	650
Hoopa Valley	71,502	99,214	81,000
Morongo	307	----------	----------
Quartz Valley	90	----------	----------
Round Valley	11,792	8,800	8,500
Tule River	35,260	39,000	39,000
Idaho	42,045	122,365	122,180
Northern Idaho Agency:			
Nez Perce	40,695	120,085	119,900
Kootenai	1,350	2,280	2,280
Minnesota: Red Lake Agency: Red Lake Chippewa	40,876	61,715	61,715
Montana	299,246	237,350	238,000
Blackfeet Agency: Blackfeet	12,071	12,350	13,000
Northern Cheyenne Agency, Northern Cheyenne	12,767	----------	----------
Fort Peck Agency: Fort Peck	274,408	225,000	225,000
New Mexico	87,556	98,524	98,524
Jicarilla Agency: Jicarilla Apache	46,692	51,637	51,637
Navajo: Ute Mountain	24,899	30,000	30,000
Zuni Agency: Zuni	15,965	16,887	16,887
North Dakota:			
Fort Berthold Agency: Three affiliated tribes	12,879	11,375	11,460
Nevada:			
Nevada Agency: Pyramid Lake	36,100	----------	----------
Oklahoma	450,190	453,320	443,955
Anadarko Agency: Kiowa, Comanche, and Apache	9,092	----------	----------
Five Civilized Tribes:			
Cherokee	47,139	33,585	28,585
Chickasaw	7,000	8,400	6,400
Choctaw	23,747	19,545	19,545
Creek	15,750	20,750	20,750
Seminole	6,363	20,240	20,240
Osage Agency: Osage	341,099	350,800	348,435
Oregon:			
Warm Springs Agency: Umatilla	10,615	14,160	13,660
Washington	474,835	408,409	419,841
Colville Agency:			
Colville	115,186	85,132	106,058
Spokane	23,087	27,815	17,815
Western Washington Agency:			
Makah	----------	5,000	5,000
Puyallup	965	10,000	10,000
Quilleute	180	----------	----------
Quinaielt	9,700	15,000	15,000
Skokomish	54,917	----------	----------
Yakima Agency: Yakima	270,800	265,462	265,968
Wyoming	29,066	100,000	100,000
Wind River Agency:			
Arapahoe	14,533	50,000	50,000
Shoshone	14,533	50,000	50,000
Miscellaneous tribes	----------	1,193,250	1,203,490
Grand total	1,786,095	3,000,000	3,000,000

STANDARDIZATION OF TRIBAL FUNDS

Chairman HAYDEN. Do you have any particular comment to make with regard to this matter?

Commissioner NASH. No, sir. This is a standard amount which has been authorized from year to year in order to make the allocation of funds to the tribes from Treasury deposits.

Chairman HAYDEN. Senator Bible?

INCREASE IN NEVADA EDUCATIONAL WELFARE SERVICES COST

Senator BIBLE. I have a few questions, Mr. Chairman. Thank you.

First, Mr. Nash, I know that the proposition for educational welfare services for the State of Nevada for fiscal year 1966 is $1,402,276. This is a slight increase over the 1965 proposition. Can you tell me in detail where you will spend these funds, the areas?

Commissioner NASH. I would like to call on Mrs. Thompson for that information.

Mrs. THOMPSON. Senator, this increase represents the State's estimate of their increased costs for educating Indian children in public schools in Nevada. The contract is with the State department in Nevada, and they are responsible for distributing the funds to the districts who need the additional funds.

Senator BIBLE. Will any of these funds be used for new buildings?

Mrs. THOMPSON. No, Senator; these funds are for operation only.

Senator BIBLE. Can you supply for the record the detail as to where it is spent, whether it is spent in Duckwater, or McDermitt, or Schurz, or wherever it is?

Mrs. THOMPSON. Yes, Senator; we can supply that for the record.

(The information referred to follows:)

Johnson-O'Malley grants to school districts in Nevada, 1963–64

County school district:	*Amount paid*
Churchill County: Fallon Elementary and Churchill County Junior-Senior High School	$901.92
Clark County: Overton Elementary and Moapa Valley High School	2,330.00
Douglas County: Minden-Gardnerville Elementary Junior High School	1,704.35
Elko County: Elko Elementary Nos. 1 and 2, and Owyhee	9,900.00
Humboldt County: McDermitt	11,754.14
Lander County	500.00
Lyon County: Fernley and Yerington	1,461.20
Mineral County: Schurz Elementary and Schurz High School students at Mineral County High School	795.28
Nye County: Duckwater and Yomba	4,070.40
Ormsby County: Carson City	1,500.00
Pershing County: Lovelock	670.77
Washoe County: Natchez Elementary and High School students; Reno Schools	9,063.55
Total	44,651.61
Seminar	1,710.00
Total	46,361.61
Administration	18,118.16
Total	64,479.77

DEATHS AT FORT MCDERMITT INDIAN RESERVATION

Commissioner NASH. Senator, might I also point out that we have the boarding school at Stewart and that breakdown would also include that school.

Senator BIBLE. What I am interested in is the detailed breakdown of this fund. I am sure you are aware, Mr. Nash, of the recent deaths at the Fort McDermitt, Nev., Indian Reservation.

Mrs. THOMPSON. Yes, sir.

Senator BIBLE. According to the health services the direct cause was poor water and sanitation facilities and some four young people died there during the past year. After extensive investigations, it was found by State and Federal employees that these deaths perhaps would not have occurred if proper water and sanitation facilities had been made available at the reservation. I know that you are probably going to say this is a matter for the Indian Health Service, but I am interested in knowing what you have done specifically in the McDermitt Indian Reservation as far as housing is concerned. Do you have a self-help program?

Commissioner NASH. Mr. Fryer, would you report on that?

Mr. FRYER. There has been no housing authority set up at Fort McDermitt as yet. All of the tribes in Nevada were told about the Public Housing Administration program and several of them as you know set up housing authorities and have gone ahead and some are under construction.

At Fort McDermitt there apparently was not enough interest for the tribe to undertake any work on it.

Senator BIBLE. Has the tribe been informed of it?

Mr. FRYER. Yes.

NEVADA HOUSING PROJECT

Senator BIBLE. Perhaps you are the person to ask the next question. I think last year you indicated that you had some 16 or 20 units to be programed for 4 different areas in Nevada. Can you tell me just how many are under construction now and where they are under construction?

Mr. BARR. Dresslerville and Pyramid Lake are under construction.

Senator BIBLE. How many in each place?

Mr. BARR. Ten at Dresslerville and fifteen at Pyramid Lake. Duck Valley has not gotten started as yet. Their plans are ready. They have gotten slowed down because of winter. Their plans are approved.

Senator BIBLE. Is that all?

Mr. BARR. Then there is Walker River which has just set up a housing authority and we are trying to work on that to get the surplus Navy houses over into the hands of the tribal housing authority which has just been established.

Senator BIBLE. Quite properly this question is directed at you because the Walker River Tribal Council has expressed a request for better housing at Schurz and a plan was put forward to secure surplus Navy homes at Hawthorne, some 20 miles distant, and have them moved to Schurz Reservation.

I met last fall with the local interested parties and the Navy agreed not to dispose of the homes for a reasonable period of time hoping that either the Bureau of Indian Affairs or the public housing authority could make use of these homes. Now will you give me a status report?

We seem to be kicked around from agency to agency. We get clear with Navy and then we get in trouble with the Bureau of Indian Affairs and we get clear with that Bureau and we are in trouble with public housing. Where are we now?

Mr. BARR. We have only one trouble. That is, getting the houses from the GSA into the hands of the tribal housing authority which we just set up last month. The Bureau has a claim on those houses which we will change over to the public housing authority as soon as the GSA and the PHA agree that the housing authority can claim these houses without reimbursement. We are working on that.

Senator BIBLE. When are you going to get it worked out? What is the timetable?

Mr. BARR. We have been hoping that we could have it before this and we haven't. I have been hoping we can get an answer from GSA and PHA on transferring the houses to the tribal housing authority.

Senator BIBLE. Do you think you are going to be successful?

Mr. BARR. I think so.

Senator BIBLE. That is encouraging because I think this is a rather good project. They are badly in need as you know of new housing at Schurz.

Mr. BARR. It seemed to make a great deal of sense with that situation up there.

Senator BIBLE. Thank you.

NEED FOR TRIBAL HOUSING AUTHORITY

Commissioner NASH. Senator, I met with the tribal council earlier last summer and saw some of those Navy surplus houses that have been moved into the Schurz area by others. I thought it was a very practical program and we set about pushing it as hard as we knew how. One of the obstacles to which the Senator referred has been the requirement that there be a tribal housing authority capable of receiving them.

Senator BIBLE. They formed that.

Mr. BARR. But only a month ago. We urge upon them the forming of the authority as early as last year and they had internal difficulties.

Senator BIBLE. But that requirement has been met.

Mr. BARR. Yes, sir.

Senator BIBLE. Are you as optimistic as the last witness?

Mr. BARR. I am and even more determined.

DEVELOPMENT OF LAKE PYRAMID

Senator BIBLE. Let us show that determination and get that done without further delay.

I have just one other question. During the past few years the Pyramid Tribe at Nixon have been very anxious to develop Lake Pyramid. I am sure you are familiar with this and I know there are many who believe this beautiful natural resource could be developed commercially to where the tribe could benefit tremendously in a financial manner as well as having a new source of employment.

Will you please bring me up to date on what the Bureau of Indian Affairs has done on this?

Commissioner NASH. Yes, sir. This has been pretty much of a personal project of Mr. Fryer. I will call on him.

Mr. FRYER. Senator Bible, we have spent on various studies and appraisals and so forth in excess of $100,000 in an attempt to interest a substantial group in joining with the tribe in the kind of development at Pyramid Lake which could be a credit to the lake itself.

It is one of the finest resources in the West as we all know. It is wholly undeveloped, unexploited, and unspoiled. Last week I met in Reno with representatives of the Indian Bureau, representatives of the Brunswick Corp. in Chicago, and representatives of Q. C. Lum, of Hawaii.

Senator BIBLE. Who is the Brunswick Corp.?

Mr. FRYER. It is the vast corporation that has 75 subsidiaries that makes boats, bowling alleys, and it makes fishing tackle. It is everywhere in the marina business. I was reminded by Brunswick during the course of these meetings that they did pay $25 million, they alleged, in export taxes and they felt that the development of Pyramid Lake Indian Reservation might relieve them of some of their tax burden.

They seemed to be interested in that fact as well as they are great operators of marinas. They own Owen Boat Corp., for example, and had some plans for using Pyramid Lake as a testing unit for their boats. Lum is a Hawaiian financier who bought the ranch north of Elko, once owned by Bing Crosby. He purchased 100,000 acres together with 5,000 head of cattle. The group was a substantial group is what I am saying.

It consisted also of Williams & Smith, architects, and planners of Los Angeles and a group from San Francisco. An offer was made to the Pyramid Lake Tribe which was accompanied by a $50,000 check placed in the bank last Monday morning. Participation in the profits, we estimated, would return to the Pyramid Tribe in a development grant tying a minimum of $5 million expenditure in the next 5 years against a planned commitment of $15 million during the next 5 years.

NEGOTIATED PLAN REJECTED BY PYRAMID LAKE TRIBAL COUNCIL

This program, this plan was negotiated in 2 days and 1 night of sessions, taken to the Pyramid Lake Tribal Council, and there it was killed.

Senator BIBLE. When did this happen?

Mr. FRYER. This happened on Thursday night, last week.

Senator BIBLE. Do you have a copy of that contract?

Mr. FRYER. I have a copy of the signed contract, Senator Bible, signed by them.

COMMITTEE STUDY OF CONTRACT

Senator BIBLE. I would like to have that contract furnished probably to me or to the committee so that we could study this. I can't understand why we can't get this project off the ground. It has been on dead center for how many years?

Mr. FRYER. We have been working on it intensively for 4 years.

Senator BIBLE. What are the obstacles?

Mr. FRYER. The principal obstacle, I think, is the tribal attorney, if I may say so. I don't wish to bring personalities into this hearing,

but the tribal attorney participated in these negotiations in Reno and when the meeting was held with the tribal council at which I was not present, his position had reversed itself and he was wholly negative and the project was killed in that council meeting largely, and I am using now the allegations of the Lum-Brunswick people who returned from that meeting saying it was killed by the tribal council

PROVISIONS OF CONTRACT

Senator BIBLE. This was a joint venture?

Mr. FRYER. It required no investment by the tribe, just a high top price of 5,000 acres for construction of various facilities against a guarantee for future of the contract plus a bond by this group that they would spend a minimum of $5 million on developments within the 5-year period beginning from date of contract.

Senator BIBLE. I am not in a position to try to fix the blame as to why this hasn't moved forward. I am certainly aware of the fact that there is a personality conflict between the Bureau and the tribal attorney. I am interested in getting the job done. Maybe it would be a good idea if we put in new negotiators. I wish you would pay some particular attention to this, Mr. Nash. This is a beautiful area. It seems to me it offers a great possibility for the Nixon Indian Tribe and it also seems to bog down. I don't know why, whether it is personality clashes or what, but I would certainly like to see us take a new approach at it and see if we couldn't get it worked out.

Mr. FRYER. Sir, this would have eliminated the unemployment project at Nixon. Starting at once they would have employed Indians. They had set up a training program which would have been magnificant in all areas of this enterprise.

Senator BIBLE. What do you think should be done now other than having the tribe get rid of the lawyer with whom you don't get along? Maybe his advice to me would be to send somebody else out besides you.

Mr. FRYER. This may be a good idea.

Senator BIBLE. I have no idea how to work out the problem.

Mr. FRYER. There is no evidence of personality conflict at all. The tribal attorney insisted, instead of completing the negotations as they were negotiated with him during these 2 days, that the Pryamid Lake be put on the market and publicly advertised. They might, by this method, get a proposal as good. I doubt if it will be improved.

Senator BIBLE. Didn't they do that once, to keep the record straight when Fred Seaton was Secretary of Interior? Didn't they make a rather broad general public announcement looking toward a concessionaire to operate Pyramid Lake.

Mr. FRYER. My recollection is that that was done, Senator Bible, and as you know, a lease was once made on Pyramid Lake, and it went into default because no one was able to get the financing for the proper development.

Senator BIBLE. That was pursuant to a public announcement, I mean calling for proposals?

Mr. FRYER. Yes.

PROPOSAL THAT TRIBAL WISHES BE PURSUED

Commissioner NASH. Senator Bible, you asked me to take a personal hand in this. And if there is a personality conflict this ought to be avoided by the means you have suggested. I think it has been necessary for the Bureau to pursue this proposal, which my technicians and advisers feel is a good one, to the point where the tribe would either reject it or tell us what their desires were for the next step.

This has now happened and they have turned it down. We, of course, cannot operate, would not operate, without tribal consent.

Senator BIBLE. I understand.

Commissioner NASH. This being the case, the next step is to do as the tribe wishes and expose it to the market in some way irrespective of our own opinion that this would have been a very desirable contract for them to enter into.

Senator BIBLE. Do you still have a problem there about the tenure of the lease? At one time it seems to me that you had some problem on the length of the lease.

Mr. FRYER. There is a problem because of financing, Senator Bible, but this particular group was willing to take the 1,000 acres.

Senator BIBLE. This particular group?

Mr. FRYER. The Brunswick-Lum group.

Senator BIBLE. That is a joint venture as such?

LIMITATION ON LEASING

Mr. FRYER. Between them, yes. They call themselves the Lum Association. They were willing to take 1,000 acres at lease for development on a 25-plus-25-year lease. Twenty-five years is the limit we have, plus 25, an option to pick up an additional 25.

Senator BIBLE. Is that a statutory limitation?

Mr. FRYER. Yes. It is not enough for long-term financing of the kind of developments which must proceed on Pyramid.

Senator BIBLE. What is it, 99 years?

Mr. FRYER. Up to. Although, we have never used the 99, 65 is congressional. It is about what is required.

Senator BIBLE. You have never used the authority?

Mr. FRYER. We have the authority but we have never used the 99 years.

Commissioner NASH. No, that was not the question.

Mr. FRYER. We don't have that authority.

Senator BIBLE. In order to get that, would it take an amendment?

Mr. FRYER. Yes.

Senator BIBLE. I would like to explore this with you and Mr. Nash at some other time. I don't want to take up the committee's time. I can only commend this area to you. It is one of the most beautiful in the West and I hope something can be done about it. Thank you, Mr. Chairman.

SOUTH DAKOTA SCHOOLS

Senator MUNDT. Mr. Chairman, South Dakota has a lot more Indians than Nevada so this may take some time. I have accumulated questions over the past year.

Mr. Nash, could you provide for me and send to my office a tabulation of the schools in South Dakota that will be assisted by the $510,000 mentioned on page 11 of your justification?

Commissioner NASH. Yes, sir.

ABERDEEN AREA GRAZING OF INDIAN RANGE

Senator MUNDT. On page 41 of your justification, I note that 57 percent of the Indian range is grazed by Indian ranchers in the Aberdeen area. The Indians own $16,257,956 worth of livestock in the Aberdeen area. Could you provide to my office a narrative description of these two items? I would like to know the trend and whether or not the Indians are using more of the Indian range each year and just what has been happening as far as total value of Indian-owned livestock over the years is concerned.

Commissioner NASH. We will provide that, Senator, and on the oral record, both are improving.

MUTUAL HELP HOUSING PROGRAM

Senator MUNDT. Thank you. On page 49 of your justification, I notice, you mentioned the mutual help housing program. I wonder if you could give us a little more detail on just how the program works and just what it does.

Commissioner NASH. Yes, Senator.

This is a program based on a memorandum of understanding between the Administrator of the Public Housing Administration and the Commissioner of Indian Affairs. Under this program, the Public Housing Administration provides the funds for the materials of construction and some other essential costs of construction.

The Bureau of Indian Affairs helps the tribes form tribal housing authorities which have the same relationship to the Public Housing Administration as a municipal housing authority would. Then, when they have developed a plan, and entered into an annual contributions contract between the tribal housing authority and the Public Housing Administration, the Bureau helps the individuals who are going to live in the homes to form themselves into working groups.

We provide a superintendent of construction and the leadermen in the principal building trades. After this the individuals do as much of the work as they are able to, unskilled work and also semiskilled work under the direction of the leadermen, and the superintendent of construction, in the homes in which they are going to live. We regard 10 as a minimum unit. Some units are larger than that.

Senator MUNDT. Is that the way the houses are built out at Lower Brule?

Commissioner NASH. No, sir. These are a different kind of houses. Those at Lower Brule were part of a rehabilitation program.

Senator MUNDT. Do you have any projects of that type in South Dakota?

Mr FRYER. No, we do not. They have a number of low-rent projects you know. Mutual Help is where the participants put in their work and they contribute the land and the houses become theirs after a period of years. None of those have started, although there is interest by several of the tribes in the Dakotas to get into this Mutual Help program but none have started as yet.

INDIAN BUREAU USE OF FACILITIES NEAR EDGEMONT, S. DAK.

Senator MUNDT. May I ask, Mr. Commissioner, whether you are conversant with the situation out in Igloo? For many years the Government operated a big ammunition refurbishing plant near Edgemont and close to Pine Ridge. It is about to be declared surplus because in the changing technology of ammunition they don't need that. This is a tremendously large area.

They have large buildings where they have machinery for their ammunition work. It has a school. It has all the firefighting machinery. It has, I think, about in the neighborhood of a thousand homes. And it looks to me that this might be something that the Indian Bureau could take advantage of some way under our GSA legislation for disposing of surplus property.

Commissioner NASH. I am not personally familiar with it. I have just been checking with my associates and they are apparently not familiar with it. We will look into it.

Senator MUNDT. I wonder if you could send an inspection team or man out to look at it. But it seems when we are trying to get industrial employment this might be a very valuable asset for the Indian Bureau. I wish you would look at it and then write a report for me.

It might be very helpful in your housing program especially and in your employment program.

Commissioner NASH. Yes, sir.

SOUTH DAKOTA ROADS MAINTENANCE

Senator MUNDT. Could you please provide to my office a complete schedule of roads that you plan to do heavy maintenance work on in the next fiscal year in South Dakota?

Commissioner NASH. Yes, sir.

Senator MUNDT. I have been corresponding with your road people for some time on four different Indian roads. I would appreciate it if you could prepare for the record a statement outlining just what think you might be able to do in connection with the following roads and the estimated cost of each and whether in your present budget there are funds which might provide progress on any or all of them and if not what might be needed? One is the Scenic to Rockyford Road, about 7½ miles.

You have a lot of correspondence on that. Second, from T. 31 N., R. 33 W., within Mellette County and extending west to Highway 75 in Washabog County. Third, the Parmalee Road from U.S. 18 north to Melette County line. Fourth, from Grass Mountain to St. Francis and Spring Creek Road.

These are all sparsely settled areas and they are in desperate need of help. We get a lot of mail about the difficulty of getting the Indians to their jobs and schools. I wouldn't expect you to be able to give that off the top of your head, but if you would provide it for the record that will be all right.

Commissioner NASH. We have some of it here but we will provide it for the record.

(The statement referred to follows:)

TRANSPORTATION OF INDIANS TO JOBS AND SCHOOL

1. Rockyford-Scenic Road

Beginning at Rockyford, T. 41 N., R. 43 W., thence north across aerial gunnery range to Scenic.

This is a State road that serves as a shortcut to Rapid City. Public lands highway funds in the amount of $215,000 were allotted to the State last year for construction of this road. The Bureau of Indian Affairs was recently informed that the State has requested an allocation of $395,000 from the 1966 public lands highway funds to complete the project. In a letter dated January 18, 1965, to the Federal Highway Administrator, Bureau of Public Roads, the Bureau of Indian Affairs, supported the need of this road and expressed appreciation for any favorable consideration that may be given to the allocation of the requested funds. This is not a Bureau of Indian Affairs road and the State has proceeded with programing of the construction.

2. State Highway No. 40 (revised route)

The South Dakota State Legislature enacted House bill No. 861 in 1963 to change State Highway No. 40 to extend south from near Interior on a county road to Bureau of Indian Affairs road east of Potatoe Creek, thence east on a BIA road through Wanblee to State Highway No. 73, thence east over an area where no road exists to a connection with State Highway No. 40 (initial route) in Mellette County.

Your question concerns a section of the revised route where no road exists. State Highway No. 73 east to a connection with the initial route, a point about 9 miles west of Cedar Butte in Mellette County. The Bureau of Indian Affairs is not involved in the construction of this road because it is a State highway and can be eligible for financing under the Federal-Aid Highway Act. The purpose of the BIA program is to improve the local roads that serve the small Indian communities and Indian land. There is a great need for the improvement of these local roads and the BIA is not financially able to construct the State highways. The BIA has received letters concerning State Highway No. 40 and not all the people in the area favor this revised location.

3. Parmelee Road, U.S. 18

The road from U.S. No. 18 to Parmelee and the two roads extending north from the vicinity of Parmelee to Mellette County are on the Federal-aid secondary system. Our authority prohibits the Bureau of Indian Affairs from constructing roads that are eligible for funds under the Federal-aid highway program. These roads are the responsibility of the State and we are not informed concerning the estimated cost or schedule of construction.

4. Grass Mountain (center of sec. 19, T. 37 N., T. 31 W., to St. Francis)

This is a shortcut road and will not directly serve any Indian homes along the 4.5 miles. It is not proposed in the 1966 program. Agency and tribal officials have established priorities for other projects and these priority projects total amounts that exceed program appropriations expected through 1968. This Grass Mountain project will then be considered with other needed projects in determining priority of construction. Since the survey has not been made of this road, only a rough estimate of cost is available, 4.5 miles at $135,000.

HOUSING PROGRAM

Senator MUNDT. Will you give us an exact breakdown of the kind of dwellings the 30 dwellings mentioned on page 110 of the justification will be?

Commissioner NASH. Yes, sir, that will be done.

(The information referred to follows:)

DWELLINGS UNDER BUREAU'S QUARTERS

Following is an exact breakdown of the dwellings to be constructed under the Bureau's quarters, various program.

Location:	*Kind and number of units*
Bethel, Alaska	8 1-bedroom apartments, 1 2-bedroom apartment, and 1 3-bedroom apartment.
Fort Defiance, Ariz	7 2-bedroom houses and 7 3-bedroom houses.
Mescalero, N. Mex	5 3-bedroom houses.
Fort Yates, N. Dak	2 3-bedroom houses.
Fort Thompson, S. Dak	Do.

GRASSLANDS NATIONAL PARK

Senator MUNDT. Several of our South Dakota tribes have indicated an interest in the Grasslands National Park. You will recall that it was once proposed for Kansas and they rejected it. Of late, some of our Indian tribes are interested in trying to do this job on Indian land without the acquisition of any extra land or at least not much extra land. They want a land exchange arrangement.

It is sort of a national park. You could run some buffalo and antelope on it. And I wonder whether the Bureau at the present time is doing anything in connection with the Interior Department concerning the possibility of such a park and what your reaction is and what you think about it as a tribal project.

Commissioner NASH. That correspondence has not come to my attention. That is under Mr. Fryer's jurisdiction.

Senator MUNDT. The Lower Brule Tribe is interested.

Mr. FRYER. We do have some correspondence on it and it seems generally as a good possibility as surplus buffalo are becoming increasingly available. I would like to write a statement on that for the record.

(The statement referred to follows:)

The Bureau of Indian Affairs does not have sufficient detailed information at this time on the Grasslands National Park proposal to make a meaningful report. However, we will make a study of the situation, and report our findings to the committee, and to Senator Mundt.

POLICING ON PINE RIDGE RESERVATION

Senator MUNDT. That will be quite all right. Last year we added $100,000 for law-and-order work on the Pine Ridge Reservation. What is the law-and-order situation now and do you need any more funds?

Mr. NASH. I don't know any area where we have enough. With respect to that, I would like to call on Mr. Benge.

Mr. BENGE. Mr. Wilson was there.

Mr. WILSON. I was in South Dakota for the last 3 years, Senator. I was there when the $100,000 was made available for law-and-order purposes at Pine Ridge. I would say that the money last year for Pine Ridge, if it is continued next year, will be sufficient to operate an effective program at Pine Ridge.

Senator MUNDT. If you were in South Dakota you are familiar with the big ruckus about law and order and an attempt to take over the jurisdiction.

Mr. WILSON. Yes. They had a referendum and people decided they are not ready to do that.

STATEWIDE POLICING

Senator MUNDT. Would you make a comment generally about the law-and-order situation in South Dakota beyond Pine Ridge?

Mr. WILSON. We received a copy of a bill last week from our area office in Aberdeen that has been introduced in the State legislature whereby the civil criminal laws of the State of South Dakota would extend to Indian reservations once again. However, there is a target date on this of 1975 and the bill would provide that each year a referendum or vote would be taken on the reservation areas and at such time the Indians voted in the majority the law of the State of South Dakota would be extended to the reservations.

POLICING PROBLEMS IN OTHER STATES

Senator MUNDT. Is South Dakota the only State that has this law-and-order jurisdictional problem?

Mr. WILSON. No, sir.

Senator MUNDT. Can you give me an illustration as to some States where they have worked this out to the satisfaction of both the Indians and the non-Indians? It seems to be a great problem out there. The problem is there. Everyone realizes it but nobody knows the answer.

Commissioner NASH. There are certain States, Senator, where the problem has been worked out. Wisconsin is an example. Minnesota is an example, with the exception of Red Lake, which remains under tribal jurisdiction.

California is another State in which the transfer was made a good many years ago. We have a few minor complaints and there was a problem with welfare and the assumption of State responsibility but that was disposed of a good many years ago and is not an issue any more. Alaska is not a problem that we ever hear about. There are no complaints. Indians and non-Indians accept State jurisdictions very happily in Alaska.

North Dakota has adopted the view that they will take such action as South Dakota took but only with consent and the Indians were assured that the State would not move without their concurrence.

Senator MUNDT. No consent has been given.

SOUTH DAKOTA POLICING PROBLEM

Commissioner NASH. No consent has been given, but you also don't have this contention that has arisen in South Dakota.

Senator MUNDT. The contention has pretty well died down but the problem remains. I think they are all looking for any suggestions or guide answer you can give them to meet the problem. Obviously what the legislature passed was not the answer because the people rejected that.

Commissioner NASH. I believe that the United Sioux Council which took the leadership as far as the Indian people was concerned, had a good deal of respect for the way in which it was handled in North Dakota and I would suggest that as a starting point. We are

most willing to be of help and sit down and try to bridge the gap as best we can, particularly if the strong emotions that were aroused by the campaign have subsided.

Senator MUNDT. The last time I was home the general consensus seemed to be among the legislators to defer any action and hold some hearings out on the reservations and the areas nearby to see if there could be a meeting of minds. At this time nobody has come up with a very happy formula.

Commissioner NASH. It is a very difficult situation.

FLANDREAU FIRE STATION AND WATER TREATMENT PLANT

Senator MUNDT. You will recall that last year we added $175,000 for a fire station building and water treatment plant at Flandreau. Will you bring us up to date on this project?

Commissioner NASH. Mr. Kethro will you report on that?

Mr. KETHRO. The bids are due to be opened on the 25th of March for both the water system and the fire station and they will both be completed later in the fall of 1965.

Senator MUNDT. This year?

Mr. KETHRO. Yes.

SOUTH DAKOTA INDUSTRIAL ECONOMIC OPPORTUNITIES

Senator MUNDT. Good. We made a little progress back there and we have had very good cooperation from the Bureau in trying to develop small industrial plants on our South Dakota reservations. I wonder if you would have somebody prepare for me, and you can put it in the record if you want to, an up-to-date complete list of what industrial economic opportunities are now operating on our South Dakota reservations, or are especially designed to give employment to South Dakota Indians.

Commissioner NASH. Yes, sir; I might direct your attention to Mr. George Schmidt who directed industrial development in the Aberdeen area. He has recently been reassigned to Washington where he will supervise the industrial development program for all of the reservations and he is here.

Senator MUNDT. You will prepare the list.

Mr. SCHMIDT. Yes.

(The list referred to follows:)

INDUSTRIAL PLANTS LOCATED ON OR NEAR SOUTH DAKOTA INDIAN RESERVATIONS AS A RESULT OF INDUSTRIAL DEVELOPMENT ACTIVITY

Name of company	Reservation	Employment	Product
Harn Corp., McLaughlin, S. Dak.	Standing Rock	23	Quilts, bedspreads, soft goods.
Sioux Dairy Cooperative, Mission, S. Dak.	Rosebud	6	Cheese.
Sioux Manufacturing, Inc., Fort Thompson, S. Dak.	Crow Creek	20	Automobile mufflers.
Wright & McGill Co., Pine Ridge Reservation, S. Dak.	Pine Ridge	160	Snelled fishhooks.

Products Miniature, a plastic products manufacturer, will soon be in operation in Mobridge, S. Dak. The local portion of the financing of this ARA project is being supplied by the community of Mobridge and the Standing Rock Sioux

Tribe. It is anticipated that this plant will initially employ 30 workers, with peak employment estimated at 100. Residents of the redevelopment areas (neighboring Standing Rock and Cheyenne River Reservations) will be given preferential employment opportunities.

INTERSTATE ADOPTION PROGRAM FOR INDIAN CHILDREN

Senator MUNDT. Before I came in, my staff man told me you discussed the interstate adoption program. I get quite a few letters from people, some of them in big cities, some in the general area, who are interested in adopting an Indian child if it can be done promptly. I have a couple of questions I would like to ask in that connection.

How many adoptions of Indian children occurred, say in 1964?

Commissioner NASH. I would like to answer that question generally and then call on Mr. Rovin who is in charge of that activity.

Interstate adoption as against intrastate adoption is very difficult for non-Indian children as well as for Indian children. It usually has to be done by a good deal of jockeying back and forth between the supervising agencies of the two States. We entered into an agreement with the Child Welfare League of America about 6 or 7 years ago in which we agreed to make use of their national organization as a facilitating agency between States, particularly since we had no opportunity to make contacts with the non-Indian families who might be desirous of adopting Indian children and they in turn had very little way of contacting Indian families on the reservations that might have dependent children who were in need of adoption and, indeed, for whom adoption might be the only answer to a happy, wholesome life. This is not large in scale, but it is very successful.

Mr. ROVIN. Senator Mundt, in 1964 we completed the adoption of 38 children.

Senator MUNDT. Are these all interstate?

Mr. ROVIN. This is in this particular Indian adoption project. We have placed 160 since the program started. South Dakota has been very cooperative and we have placed a fair number of children from South Dakota.

Senator MUNDT. Many people are going to read this record, Mr. Rovin. I wonder if you would put in the record a statement which would explain this whole procedure so those families desirous of adopting children would know how to proceed.

Mr. ROVIN. I would be very glad to.

(The statement referred to follows:)

INDIAN ADOPTION

In general, Indian children are adopted in accordance with the laws and procedures of the State in which the adoption is to take place, in the same way as non-Indian children. The only exception is that on some reservations Indian children may be adopted in the tribal court by other Indians who are under the jurisdiction of the tribal court.

A couple who wish to adopt an Indian child can find out about adoption procedures in their State, and about Indian children available for adoption, by applying to the child welfare division of the State public welfare department, usually located in the State capitol. The information may also be available from the local welfare department or a local child welfare agency authorized to place children for adoption.

If there is no suitable Indian child within the State available for adoption the State welfare agency may communicate with the welfare department of another State with a considerable Indian population, or with the director of the Indian

Adoption Project, c/o Child Welfare League of America, 44 East 23d Street, New York, N.Y.

This project is sponsored jointly by the Bureau of Indian Affairs and the Child Welfare League of America. It was established about 6 years ago to facilitate the adoption of Indian children without parental care for whom adoptive homes could not be found within their tribe or within the State of their residence.

Under the project Indian children in the above-mentioned category, who are free for adoption, are referred to the project director by Bureau social workers on reservations, or by child welfare agencies who have assumed responsibility for the child. The project director arranges through established adoptive agencies for adoptive homes to be selected and for the children to be placed in these homes.

Since the Indian adoption project began, 160 Indian children have been placed through its activities in adoptive homes in 18 States in the East and Midwest. Thirty-five were placed in 1964. The adopted children came from 12 States, with the greatest number from South Dakota and Arizona. Thirteen voluntary agencies in addition to 11 State welfare departments have participated in these adoptions.

Over half the children were under 6 months of age when they were referred for adoption, 10 were 5 years and older. It was possible to place a few children in Indian homes, but the great majority are in non-Indian homes. The economic status of the adoptive families range from skilled workers and families in modest business activities to the higher professional and executive levels.

Information about procedures for adopting children through the Indian adoption project are available from the child welfare division of the State public welfare department.

Sioux Indian Museum and Craft Center

Senator Mundt. That would be very helpful.

Can you provide us in some detail what is being done at the Sioux Indian Museum and Craft Center in Rapid City? I would like to have a narrative discussion sent to my office.

Commissioner Nash. Yes, sir.

(The information referred to follows:)

Department of the Interior,
Washington, D.C.

The Sioux Indians Museum and Craft Center is operated by the Indian Arts and Crafts Board, an agency of the U.S. Department of the Interior. Through its varied activities, the museum and craft center aims to promote the artistic and cultural achievements of Indian artists and craftsmen, to create a demand and interest in the production of authentic products and to provide the stimulation necessary to broaden markets and production which results in a direct economic benefit to the Indian people by providing supplemental income.

The Sioux Indians Museum is one of the major international repositories of Sioux and other Plains Indian artifacts. As such it houses the only outstanding collection of Sioux Indian material within the United States and is a prime source of information and study for the general public and for students of area Indian history.

The Rapid City Daily Journal, in a comparative study conducted last year, of annual visitations covering the previous 10-year period to the various Black Hills area tourist attractions, showed the Sioux Indians Museum and Craft Center as having the largest percentage of increase in number of visitors. For 1964 alone, the visitation figure reached well over the 63,000 mark.

Thus, as a major area tourist attraction, the Sioux Indians Museum has geared its programs to meet the demands of this increase which includes not only out-of-town and foreign, but local visitors as well.

The museum maintains permanent exhibits and provides informational services devoted to creating a better understanding of the technical achievements and aesthetic values of both the historic and contemporary arts and crafts of the Indian peoples of the area. Special exhibitions are presented frequently (five in the past year) to stimulate visitor interest, and tours are conducted and lectures presented. The tours include special student and educational programs which are held during the school year. These are programed by the museum in cooperation with area schools to achieve the greatest overall benefit. Schools within a radius of 300 miles of Rapid City schedule annual visits to the museum as an

important adjunct to classroom study. Scouting and other youth organizations travel to the museum from as far away as Chicago and other large cities. All adult tours, local and national, passing through Rapid City schedule the museum as a regular stop.

During 1964, a major informational and promotional service of the museum was its participation in the South Dakota Range Days and Fair, the annual celebration held in Rapid City. For this event, viewed by an estimated 24,500 people, an extensive exhibition of contemporary crafts from 6 States, including Iowa, Minnesota and Wisconsin, and 16 reservations, was developed. It was supplemented by live demonstrations of area craftwork by six outstanding area craftsmen. The goals of this presentation were fivefold: (1) The education of the general public to authenic, quality contemporary American Indian crafts; (2) the building of better public relations between the Indian craftsmen and the public; (3) the advertisement of the many modern utilitarian and decorative uses of contemporary Indian crafts; (4) the building of public identities for accomplished Indian craftsmen to give them trade names or a demand for their crafts; and (5) to furnish the craftsmen with an opportunity to meet the public and to demonstrate their ability, acquaint them with other craftsmen and with the public at large.

Through its expanding program of promoting such events as its successful showing at the range days and fair, the museum continues to stimulate area interest, both Indian and non-Indian, in contemporary Indian crafts as a potential resource, as a tourist attraction, and as a source of income and means of prestigious identification for the craftsmen.

Through its advisory services the museum is also available to provide assistance to tribal and other Indian craft groups and organizations throughout the area.

This is further facilitated by the museum staff's correlation of their programs and activities with the various Federal, State, and tribal programs whose aims are the ultimate economic benefit of area Indian peoples. During 1964, the museum staff assisted with the organization of craft classes which were held on 10 reservations in North and South Dakota under the auspices of the ARA.

Currently the museum is involved in assisting with a wide variety of proposed projects relating to the Manpower Development and Training Act and the Economic Opportunity Act, including a course of instruction for manager-trainees.

The museum has also been spearheading plans for an areawide marketing organization in conjunction with the Bureau of Indian Affairs, the Farmers Home Administration, the South Dakota State Indian Commission, and the United Sioux Tribes. In this respect, it is presently conducting an area survey to determine the number of producing craftsmen, types of crafts being produced, and amount of sales being made. It is hoped that with this information as a launching point, the combined efforts of these organizations will result in a centralized marketing corporation for area Indian arts and crafts.

As a center for contemporary Indian arts and crafts of the area, the museum also houses the Tipi Shop, Inc., a nonprofit organization devoted to the encouragement and development of contemporary Indian arts and crafts. As the only single outlet handling numerous contemporary area Indian craft products, as well as those of other areas throughout the United States, the Tipi Shop offers for sale a diverse line of authentic Indian craft products and contemporary paintings by Indian artists.

In addition to these broad-ranging programs, the personnel of the museum work closely at the local level with the individuals and small scattered craft organizations and groups. Comprising one of the most important aspects of their programs, the staff, through frequently conducted areawide field trips, are in constant contact with the craft people. At this level they are able to offer more personalized services which include assistance with the development of new products, help in solving problems of production, information on sources of supply, and assistance in discovering new and better markets. In this work, use is made of special tools and exhibits, such as that of small compact exhibit units on the subjects of beadworking, embroidery, and woodworking techniques presently being utilized in the area. Such visual aids help to stimulate the craftsmen to new and better production.

Flandreau Indian School Dining Facilities

Senator Mundt. I think you are familiar, Mr. Nash—I know the staff is—with the dining facilities at Flandreau Indian School. We have done a fine job of refurbishing the whole school, but the dining

facilities are pretty deplorable. I have been there and how the students have to line up outside in cold weather in order to get served on time.

I understand an adequate facility will cost $382,000. Is that the right figure?

Commissioner NASH. Yes, sir.

Senator MUNDT. What plans do you have for correcting that situation.

Commissioner NASH. It is not in our present request for construction funds, Senator Mundt.

Senator MUNDT. Do you concur with the information that I get from Flandreau that that probably should be the next building constructed there; that that was the greatest existing need?

Commissioner NASH. Yes, sir.

Senator MUNDT. If you were provided with the money, could you build it?

Commissioner NASH. Yes, sir.

IMPOVERISHMENT OF ST. CHARLES PUBLIC SCHOOL DISTRICT

Senator MUNDT. Out in Gregory County, St. Charles Public School District 104, they have a real problem. St. Charles is a very small town and they have some 40 Indian students and about 19 non-Indian students. They are in desperate need of a building. They need sanitary facilities, showers, gymnasium, or something like that where they could hold gatherings.

I was wondering if in our program, anyplace, there is something which might be done for a small non-Indian community like that, with all these Indian students, to get the necessary facilities to meet the need?

Commissioner NASH. Senator Mundt, we know of the problem, although I heard about it rather recently. We do not have an estimate of what it would cost to provide the multipurpose room and additional facilities that they are interested in.

It is a fact that this is a very impoverished school district. There are 43 Indians, 18 non-Indians—61 students, in a 3-teacher school. They are trying to operate on an assessed valuation of $908,906 which is a nearly impossible situation for them.

They received Johnson-O'Malley funds, current operating, not construction, a little short of $17,000. I understand there is a consolidation problem there as there is in many of the small rural schools through the West.

That is about all the information we have at the present time.

Senator MUNDT. That describes the problem even more adequately than I did, but it doesn't provide the answer.

Commissioner NASH. We do not have the answer.

Senator MUNDT. There is the problem now. What do we do? Could you have somebody go out there and come up with some kind of suggestion?

Commissioner NASH. Yes, sir; we can have somebody go out and look it over. If there is a consolidation problem, it may require a relationship between the State department of education and the local people.

Senator MUNDT. I am only keenly aware of the problem. If you would have somebody make an inspection and send my office a report on what you think should be done, or an optimum solution on what the costs would be. We could take off from there.

Commissioner NASH. We will be glad to do that. I was trying to indicate there may be a problem in school consolidation which ought to be resolved before we talk about building. Obviously if a determination is made and the money is appropriated, then we can build.

BUILDING UNAUTHORIZED AND UNFUNDED

Senator MUNDT. Do you have the money?

Commissioner NASH. No, sir; nor the authority. As the Senator knows, we do not have the authority to provide construction aid to public school districts. Where that had been done it has been done either through Public Law 815 or FHA or by special authorization.

SISSETON SCHOOL DISTRICTS

Senator MUNDT. One other problem out home in the same general area and that is the school problem at Sisseton. It is my understanding that the Bureau does not plan to do anything there unless the school district reorganizes.

Are you as conversant with that as you are with the situation, at St. Charles and can you give us any word of hope?

Commissioner NASH. I am somewhat conversant on it. At last report the school districts had not resolved their differences. We are aware of the school need and of a plan for its solution. We are very regretful particularly from the standpoint of the Indian children that time has gone by while waiting for the school district trying to decide where they want the schools located. This is one of these merged situations which you know more about than I do.

Senator MUNDT. The integrated education has worked very well every place it has been tried in South Dakota.

Commissioner NASH. It has worked extremely well. As a result of waiting for these districts to get together, the Indian children in that school have not had the facilities provided for them. There are two ways to go about it.

SPECIAL AUTHORIZATION REQUIREMENT

One would again require special authorization, because we don't have the authority to build schools for non-Indians as we do for Indians. An eight-room school would take care of the Indians and non-Indians. If the school districts don't get together we don't think we ought to wait any longer and we would propose, although it is not in this year's justification, to build a four-room school which will take care of the Indian children and then probably add on somewhat larger utilities in the hope that the public school districts would compose their differences and would come along and add on the other four classrooms which would be cheap for them since we had already provided the basic utilities.

Senator MUNDT. What figures do you come up with as the cost of building this?

Commissioner NASH. $874,000. That is the eight-room elementary.

Senator MUNDT. That would be the total cost?

Commissioner NASH. Yes.

Senator MUNDT. If you have to resort to building your own four-room school, have you figured that?

Mr. KETHRO. $771,000, Senator, if we build the kitchen and multi-purpose room up to standard for eight classrooms so they could come on later and add to the four rooms.

LOWER BRULE MUNICIPAL BUILDING

Senator MUNDT. Over the years there has been continued discussion of the need for a municipal building at Lower Brule. Several estimates have been made at the $155,000 figure. This was one of the things which unfortunately got left out in the rehabilitation settlement.

Could you study this problem and send to my office your reactions to this proposal, or put them in the record as you prefer? But in view of the legislative history, I would like your thinking as to the best way to proceed. It has been hanging in midair for a long time. I believe you have $33,000 someplace earmarked for this project.

Commissioner NASH. We do not have it, Senator, but the engineers do. They have $37,620 which was the value of the old office building that was destroyed in connection with the building of the Big Bend Dam. The tribe would like a municipal center and some auxiliary facilities.

Senator MUNDT. They envision sort of a municipal center with a lockup and community room and a library. We have built some of these out there and they are very satisfactory.

Commissioner NASH. I do not know why it was not authorized in the taking legislation, but as the Senator indicated by the reference to the legislative history, it was not and no agreement has ever been reached between the tribe and the Corps of Engineers as to this subject. We would happily contribute our $37,620 to such a center which would provide facilities for us as well as the things that the Indian people want.

Senator MUNDT. And that would be apart from the $33,000 that the corps has?

Commissioner NASH. No, sir. My figure is $37,620.

Mr. KETHRO. That is $33,000 for the evaluation of the building plus their design costs they threw in.

Senator MUNDT. Your $37,620 would be on top of that?

Mr. KETHRO. No, sir; the $37,620 that we are referring to is the same 33 plus 14 percent which was their design or engineering costs that they are willing to gives to us.

Commissioner NASH. In short, sir, that is only one sum and the engineers are willing to contribute it.

BUREAU CONTRIBUTIONS

Senator MUNDT. You must be willing to contribute more than $4,000 for a nice set of offices for your people.

Commissioner NASH. The building the tribe wants will cost $155,000.

Senator MUNDT. And the corps has $33,000 that they seem to think they are obligated to pay. The tribe feels that your Bureau should be willing to pay something for the part of the building which it would use and I would think that you would pay more than $4,000.

Mr. KETHRO. The $33,000 is ours. In other words, the corps is holding that for the Bureau.

Senator MUNDT. But it is their money. It is part of the river construction.

Mr. KETHRO. That is correct. But they are willing to turn it over to the Bureau.

Senator MUNDT. You can't really call it your money. It is the people's money.

Commissioner NASH. It is the value of our building that was destroyed.

Senator MUNDT. I want you to come up with a more realistic figure as to what would be your share. As I understand the building, it would provide suitable offices for your operations in that area.

Commissioner NASH. I think we could add to that.

Senator MUNDT. Will you take that out and see if you can't put in the record a little more realistic figure for your share?

Commissioner NASH. All right.

(The information referred to follows:)

MUNICIPAL CENTER

The Corps of Engineers presently is holding the amount of $37,620 for a municipal center which represents $33,000 valuation of the old Bureau office building taken by the Big Bend Reservoir construction plus a $4,620 allowance for engineering costs for the design of a municipal building. The Lower Brule Tribe has proposed the construction of a municipal building with offices for the Bureau, a courtroom, tribal offices, and a clinic included. The estimated cost for such a building is $155,000. The Bureau of Indian Affairs does not now have the necessary additional funds for this work nor are there any funds included in the fiscal year 1966 budget justifications for this project. The Bureau could design and construct the new building if the necessary additional funds were provided.

ROAD FROM LOWER BRULE TO COUNSELOR COVE CONSTRUCTION

Senator MUNDT. Last year, I was able to add $131,000 to the public works appropriations bill for construction of the road from Lower Brule to Counselor Cove. This has been turned over to the Bureau and you are to construct the road.

The Army came up with a pretty high figure and our committee decided that $131,000—period—was all you were going to get. What is the current status of that?

Commissioner NASH. Mr. Trier is here and he can answer that.

Mr. TRIER. We have made the survey and design and we are ready to go ahead as soon as winter is over.

Senator MUNDT. You are going to build this for the $131,000?

Mr. TRIER. Yes. We have a report that we can make it for that amount.

COOKING CLASS FOR ROSEBUD TRIBE WOMEN

Senator MUNDT. We have had a lot of correspondence with the Rosebud Tribe concerning the distribution of surplus commodities and the tribe desires that the Bureau conduct cooking classes to teach

the women the best way of preparing surplus foods. This seems to have merit. I don't know what you have done about it and I would like to know your thinking on that.

Commissioner NASH. It is a very reasonable and practical project and is the kind we conduct quite frequently by extension, in the homemakers service, and also in adult education. I don't recall having heard of this particular interest.

Miss GIFFORD. I hadn't heard about it, Senator. But we will certainly be happy to explore it.

Senator MUNDT. Thank you. Even if you try it as a pilot thing in that place, I think you will get better results from surplus food.

(The following statement was supplied for the record:)

USE OF SURPLUS FOODS

On all reservations where home demonstration agents are employed, either through contract or in our own service, all agents carry on instruction and demonstration meetings on the use of surplus foods. Since there are not enough home agents employed to give individual instruction or spend full time at this work most of the people are reached at the point of distribution and samples, recipes, and instructions are given out at that time. Also, classes are organized and through group instruction commodities are used in demonstrations with Indian women participating.

Unfortunately, there are not enough home demonstration agents employed to reach all tribes and Rosebud is without a home agent, nor does the State of South Dakota have a home agent in Todd or Mellette Counties.

This condition could be remedied if adequate funds were appropriated to employ more home agents.

The following is taken from the November monthly report, 1964, of the Rosebud agency social worker:

"Two of a series of meetings to demonstrate the preparation of meals using surplus food commodities to Indian women representing each community on the Rosebud Reservation have been held by the Tripp County home agent, since there is no active agent in Todd County. The plan is to have the Indian women, after attending the classes, give demonstrations at adult education meetings in their respective communities.

"For the demonstration a two-burner kerosene stove was obtained, since this type of stove is a more realistic cooking facility in this area. Also, to be realistic, the recipes followed were those recommended by the Department of Agriculture, reduced to the bare essential items, omitting green peppers, etc., which would not be found easily available. The emphasis was on using commodities which are often wasted or seldom accepted by the Indian people, such as cornmeal, rice, and beans. We feel that the Indians are satisfied with using the meat and cheese in the form in which it is delivered."

It is our belief that the greatest advantage offered by this project is the recognition given to the natural leadership in the communities and its development for use in teaching others in the same communities.

HIGHER EDUCATION SCHOLARSHIPS

Senator MUNDT. Just one other question. Mrs. Thompson, where do we stand on the proverbial question of Indian scholarships for higher education? Do we have enough money to meet the demand.

Mrs. THOMPSON. This budget includes an increase of $250,000 for higher education. I think this committee should know that in the last 4 years the number of grants that we have made have doubled and I hope in the next 4 years that it will double and redouble.

Senator MUNDT. If it doubles and redoubles, will you have enough money to take care of them?

Mrs. THOMPSON. In the next 4 years we would not, if it doubled and redoubled. I think, to give you a little record of what has

happened, when this committee and especially you, became interested in this problem back about 10 years ago, we were putting $9,360 into grants. Now, as you can see, this year, 1965, it was $1,150,000 and this budget includes an increase of $250,000.

So it is very encouraging.

Senator MUNDT. Which you feel will be enough to take care of the anticipated needs.

Mrs. THOMPSON. For this coming year.

Senator MUNDT. That is a most encouraging report.

Commissioner NASH. What this will permit, Senator, is a program increase as follows:

The average grant last year was about $657. And there were 1,327 grants. This is considerably more per grant than there was a couple of years ago and the effect of it is noticeable in a decline in the freshman dropout rate. In my opinion, $657 in terms of today's costs is not enough for a student who is attempting to go to college even with a reasonable amount of work to help himeslf. I would like to see the average grant go up to a thousand dollars and if it were to do that, I think you would see a decline in the dropout rate to somewhere down near the non-Indian rate, maybe even below it because there is a little selective factor working as far as the Indian student going to college.

Senator MUNDT. Would it be too much work for you to prepare and put in the record, not student by student, but of these 1,300 indicate the colleges to which they are going and also break up the grants by freshman, sophomores, juniors, and seniors?

Mrs. THOMPSON. We can do that, Senator. It will take perhaps a little time to get all the information but we can get it.

Senator MUNDT. You can send it to the committee if you don't get it in time for the printing. But if you do get it in time for the printing that would be better. Thank you.

(The information referred to follows:)

Colleges, universities, and nursing schools attended by Indian students receiving Bureau grants, fiscal year 1964

Alaska:
- Ketchikan Community College, Ketchikan.
- University of Alaska, College.

Arizona:
- Arizona State College, Flagstaff.
- Arizona State University, Tempe.
- Arizona Western College, Yuma.
- Eastern Arizona Junior College, Thatcher.
- Phoenix College, Phoenix.
- University of Arizona, Tucson.

Arkansas: Sparks Memorial Hospital, Fort Smith.

California:
- Chaffee College, Alta Loma.
- Chico State College, Chico.
- College of San Mateo, San Mateo.
- Eastern Los Angeles Junior College, Los Angeles.
- El Camino College, Los Angeles County.
- Hartnell College, Salinas.
- Humboldt State College, Arcata.
- Imperial College, Imperial.
- Los Angeles State College, Los Angeles.
- Long Beach State College, Long Beach.
- Riverside City College, Riverside.
- Sacramento State College, Sacramento.
- University of California, Berkeley.

Colleges, universities, and nursing schools attended by Indian students receiving Bureau grants, fiscal year 1964—Continued

Colorado:
- Fort Lewis A. & M. College, Durango.
- Trinidad State Junior College, Trinidad.

Connecticut: Yale University, New Haven.

District of Columbia:
- Gallaudet College.
- George Washington University.

Idaho:
- Boise Junior College, Boise.
- Idaho State University, Pocatello.
- University of Idaho, Moscow.

Illinois: University of Chicago, Chicago.

Iowa:
- Grinnell College, Grinnell.
- State University of Iowa, Iowa City.

Kansas:
- Arkansas City Junior College, Arkansas City.
- El Dorado Junior College, El Dorado.
- Kansas State College, Pittsburg.
- University of Kansas, Lawrence.
- Wichita State University, Wichita.

Massachusetts: Harvard University, Cambridge.

Michigan:
- Central Michigan University, Mount Pleasant.
- Michigan State University, Lansing.
- Michigan Technological University, Houghton.
- Northern Michigan University, Marquette.
- Northwestern Michigan College, Traverse City.

Minnesota:
- Bemidji State College, Bemidji.
- Ely Junior College, Ely.
- Itasca Junior College, Coleraine.
- Mankato State College, Mankato.
- Moorhead State College, Moorhead.
- St. Cloud State College, St. Cloud.
- University of Minnesota, Duluth.
- University of Minnesota, Minneapolis.
- University of Minnesota, Morris.
- Virginia Junior College, Virginia.
- Winona State College, Winona.

Mississippi:
- Meridian Junior College, Meridian.
- University of Mississippi, University.

Missouri: University of Missouri, Columbia.

Montana:
- Eastern Montana College of Education, Billings.
- Montana State College, Bozeman.
- Montana State University, Missoula.
- Northern Montana College, Havre.
- Western Montana College of Education, Dillon.

Nebraska:
- Chadron State College, Chadron.
- Municipal University of Omaha, Omaha.
- University of Nebraska, Lincoln.
- Wayne State College, Wayne.

Nevada: University of Nevada, Reno.

New Mexico:
- Eastern New Mexico University, Portales.
- New Mexico Highlands University, Las Vegas.
- New Mexico Military Institute, Roswell.
- New Mexico State University, University Park.
- University of New Mexico, Albuquerque.
- Western New Mexico University, Silver City.

New York: Rochester Institute of Technology, Rochester.

Colleges, universities, and nursing schools attended by Indian students receiving Bureau grants, fiscal year 1964—Continued

North Carolina:
- Gaston Technical Institute, Gastonia.
- Western Carolina College, Cullowhee.

North Dakota:
- Dickinson State College, Dickinson.
- Lake Region Community College, Devils Lake.
- Mayville State College, Mayville.
- Minot State College, Minot.
- North Dakota School of Forestry, Bottineau.
- North Dakota State School of Science, Wahpeton.
- North Dakota State University, Fargo.
- University of North Dakota, Grand Forks.
- Valley City State College, Valley City.

Oklahoma:
- Cameron State Agricultural College, Lawton.
- Central State College, Edmond.
- Connors State Agricultural College, Warner.
- East Central State College, Ada.
- Eastern Oklahoma A. & M. College, Wilburton.
- El Reno Junior College, El Reno.
- Murray State Agricultural College, Tishomingo.
- Northeastern Oklahoma A. & M. College, Miami.
- Northeastern State College, Tahlequah.
- Northern Oklahoma Junior College, Tonkawa.
- Oklahoma College for Women, Chickasha.
- Oklahoma State University, Stillwater.
- Panhandle A. & M. College, Goodwell.
- Southeastern State College, Durant.
- Southwestern State College, Weatherford.
- University of Oklahoma, Norman.

Oregon:
- Central Oregon College, Bend.
- Eastern Oregon College, La Grande.
- Lewis & Clark College, Portland.
- Portland State College, Portland.
- South Western Oregon College, North Bend.
- University of Oregon, Eugene.

Pennsylvania: Pennsylvania Hospital School of Nursing, Phaildelphia.

South Dakota:
- Black Hills State Teachers College, Spearfish.
- General Beadle State Teachers College, Madison.
- Northern State Teachers College, Aberdeen.
- South Dakota School of Mines & Technology, Rapid City.
- South Dakota State College, Brookings.
- Southern State Teachers College, Springfield.
- University of South Dakota, Vermillion.

Texas: University of Houston, Houston.

Utah:
- Carbon College, Price.
- University of Utah, Salt Lake City.
- Utah State University, Logan.
- Weber State College, Ogden.

Washington:
- Central Washington State College, Ellensburg.
- Eastern Washington State College, Cheney.
- Everett Junior College, Everett.
- Peninsula College, Port Angeles.
- University of Washington, Seattle.
- Wenatchee Valley College, Wenachee.
- Western Washington State College, Bellingham.

Colleges, universities, and nursing schools attended by Indian students receiving Bureau grants, fiscal year 1964—Continued

Wisconsin:
Stout State College, Menominie.
University of Wisconsin, Madison.
Wisconsin State College, Eau Claire.
Wisconsin State College, La Crosse.
Wisconsin State College, Oshkosh.
Wisconsin State College, Platteville.
Wisconsin State College, River Falls.
Wisconsin State College, Stevens Point.
Wisconsin State College, Superior.
Wyoming: University of Wyoming, Laramie.

Bureau scholarship grants to college students

Fiscal year	Total number grants	Enrollment				Graduate study	Average grant
		1st year	2d year	3d year	4th year		
1957	[1] 290						$238
1958	[1] 466						284
1959	[1] 400						362
1960	[1] 612						385
1961	[1] 623						384
1962	763	362	187	129	85	0	394
1963	[1] 963						586
1964	1,327	652	329	188	140	18	657

[1] Information on college enrollment by classes not available for this year.

DURATION OF GRANTS

Senator BIBLE. Could I ask one question? These grants are for 4 years?

Commissioner NASH. Yes, sir. These are annual grants. When the student applies and is accepted by the college of his choice—we don't attempt to regulate that—then he applies through his boarding school principal, his reservation principal, the educational counselor where he is, and the decision is made at the area level.

The area directors are provided with an allocation of funds to meet this need. We usually work out a package on an individual basis, what can the individual do, what will the college or the tribe or the religious group do, and so on. And then we come along and add the amount that is necessary to make certain that the individual is able to go. When we enter into that relationship, we stay with it.

Senator BIBLE. But you are permitted to grant $657 or whatever it is for each of the 4 years?

Commissioner NASH. Yes. This is an average.

Senator BIBLE. You are recommending it be a thousand dollars?

Commissioner NASH. I am recommending that the average be a thousand dollars.

Senator BIBLE. Thank you, Mr. Chairman.

Senator MUNDT. In other words, you are recommending that the Indian student have a thousand dollars a year. He might get a hundred from the tribe, and a couple hundred from his parents, and the total would be a thousand dollars.

Commissioner NASH. On the average from the Bureau.

TRIBAL CONTRIBUTIONS

Chairman HAYDEN. Are there many Indians who take advantage of this help?

Commissioner NASH. Of course, sir, very much. At least two, one Arizona tribe and one New Mexico tribe, have very large scholarship funds of their own. The Navajos set aside $10 million and have a very active scholarship program. They don't call on us very much because the fully qualified student who is able to apply and be accepted will have 100 percent of his expenses met out of tribal funds.

The Jicarilla Apaches on the New Mexico side have about a million and a half dollars in their scholarship fund. The tribes are very heavy contributors to the fund.

INDIAN ENGLISH LANGUAGE DEFICIENCY

Chairman HAYDEN. Senator Bartlett.

Senator BARTLETT. Commissioner Nash, how many American Indians are there and I would like you to include Eskimos, Aleuts?

Commissioner NASH. Roughly 550,000.

Senator BARTLETT. How many would you estimate do not read, write, or speak English?

Commissioner NASH. I would estimate in round numbers and off the top of my head, 100,000.

Senator BARTLETT. How does that figure correspond with the situation, if you know, of a generation ago?

Commissioner NASH. I think it is smaller than a generation ago. In fact, one doesn't even have to go as far as a generation. The latest figures for the Navajos at the time of the crash program initiated by my predecessor would be much smaller than it is today.

Even after the Navajo emergency program, adult education and the drive to build elementary schools, you will still have a great many older Navajos who would not speak, read, or write English, and a few of the young adults who were denied education in their youth.

Now, if you go the question of the vernacular, what is the language of the home, you will find many more than a hundred thousand who use an Indian tongue as the language of the home. So that the children come to school non-English speaking even though the parents might pass a literacy test.

Senator MUNDT. Will you yield for a question?

Senator BARTLETT. Surely.

Senator MUNDT. Asking his question and taking the Indians below the age of 30, what percentage would still be illiterate in the English tongue?

Commissioner NASH. Not very many. Do you care to enlarge on that, Mrs. Thompson? Do you think that is about right?

Mrs. THOMPSON. I think that is about right, Mr. Nash. This may give some indication: Of the older Indian people, we estimate that the median educational level is about fifth grade. That is the older adults.

That would mean that half of them are functionally illiterate if that is their median educational level. The younger segment of that adult group, 21 to, say, 45, the median educational level is about eighth grade. Now of those who are coming on, I think it is going to be

much, much higher. So in each generation the illiteracy is decreasing very rapidly.

Senator BARTLETT. Can you supply for the record, if it isn't too much of a task, the percentage of Indian children who start the first grade who don't complete the eighth grade, the percentage who start the first grade who don't complete high school, the percentage that start the first grade who don't complete college after having started college, and reveal how that compares with the corresponding white populations?

Mrs. THOMPSON. Senator, I can do it very easily for those who are enrolled in our own schools.

Senator BARTLETT. I understand it would be impossible overall. But your own schools let's say.

Mrs. THOMPSON. Yes, I can supply that for the record.

(The information referred to follows:)

SCHOOLS

After they have attained reasonable proficiency in the English language, many Indian children transfer from Bureau-operated schools to public or private schools, thereby making it impossible to keep accurate records of school retention rates over a period of years. At the high school level, 52.2 percent of the class who entered the ninth grade, 4 years earlier, graduated in 1960; in 1964, that percentage was increased to 71.8 which compares favorably with the national figure of 71.7. The dropout rate for students enrolled in Bureau schools has decreased in the past 4 years.

Summary of dropouts in schools operated by the Bureau of Indian Affairs, 1961–64

Grade	Federal school enrollment percent of dropouts			
	1961	1962	1963	1964
Beginners	0.18	1.2	1.0	1.1
1st	2.6	2.0	1.5	1.1
2d	1.4	1.5	1.2	.8
3d	1.9	2.2	1.9	1.2
4th	1.9	2.4	2.3	2.1
5th	3.1	2.9	3.2	2.1
6th	3.3	2.9	3.4	2.6
7th	5.7	4.3	4.9	3.4
8th	8.7	9.6	6.4	5.7
9th	14.7	12.5	14.0	9.9
10th	13.1	10.0	10.4	10.4
11th	9.0	10.3	10.6	10.0
12th	6.6	8.2	8.1	7.3
Subtotal	4.8	4.0	4.0	3.4
Special program	3.3	4.9	2.8	2.5
Grand total	3.8	4.0	3.9	3.3

This includes students who dropped out of school for valid reasons; such as, illness and lack of facilities in areas where Bureau schools presently accommodate only lower grades.

Information is not available on the Indian children who drop out of public schools, but it is believed that the percentage of public school dropouts is considerably higher. A recent report, received in the Bureau from a State department of public instruction, indicated that 19 percent of Indian students enrolled in the public high schools receiving Johnson-O'Malley financial assistance dropped out during the 1963–64 school year. At one school in this State, the dropout rate for Indian students during the 1963–64 school year was 55 percent. Figures are not available to show the number of Indian students starting the first grade in Bureau schools and not completing college after having enrolled in college. There are statistics showing the number of dropouts from college among those students receiving Federal scholarship grants.

Graduates and dropouts among Federal scholarship grant recipients

Fiscal year	Number of students receiving grants	Dropouts (percent)	Graduates
1960	612	16.0	72
1961	623	13.0	92
1962	763	14.0	56
1963	963	19.6	79
1964	1,327	15.0	94

WHEELER-HOWARD CANNERY

Senator BARTLETT. Thank you.

Now, I would like to turn Mr. Commissioner to Alaska. What is the Wheeler-Howard Cannery situation in south Alaska?

Commissioner NASH. I would like to answer that generally and then call on Mr. Huber who is familiar with the details.

As the Senator knows, the canneries were taken over to save economic disaster in the villages in which they were located. We have poured large amounts of credit into them, in fact, a disproportionate amount of the total credit available to us and we hold large reserves against losses. I think it is still necessary to continue this.

For the experience this year, I think I will call on Mr. Huber.

Mr. HUBER. In 1964, Bureau-financed canneries all lost money. The production costs have remained relatively stable for the last 3 or 4 years. They have been going up slightly. The market price of pink salmon has slipped from $28 to $19. It is almost impossible, at the present time, to break even.

Last year the native canneries productionwise had a very good year. It probably was more economical to operate them and the losses were smaller than it would have been to let them stand idle. It would cost upward of $75,000 to let any cannery stand idle. The losses for each cannery will not be that much on the average unless the prices slip still further which there are occasions it may do.

For this year as I think you know the revolving fund is depleted. Tentative plans—and Mr. Wright from Alaska is supposed to be in here next week because we have to get going on whatever we are going to do—will probably consolidate the facilities of Hydaburg and Klawock. The same cannery will operate in conjunction with Whitefish Products Co. the same as it has for the past 9 years.

This is the end of the 10-year agreement with them. The Angoon fleet will more than likely still fish for Nick Bez at Hawk Inlet. But instead of on a custom basis, Bez, himself, will finance them. He can't make money and the natives can't make money but he is willing to take over the financing of this fleet this year.

Senator BARTLETT. In other words, he plans to do the same thing the Bureau did last year. He feels it is cheaper to operate even without making money than to close down.

Mr. HUBER. That is right.

COMMERCIAL LOSSES ALSO SUSTAINED

Senator BARTLETT. I think one point ought to be made clear for the sake of the record, Mr. Huber. The experiences of the co-op canneries

were not unique to them, were they? This was a general condition that prevailed throughout the industry that other canneries not operated by the Indians also lost money on account of the price of pink salmon.

Mr. HUBER. I don't think there is much doubt that the losses of the commercials are greater than the native canneries. Some figures that I have seen would indicate that the per case loss of most commercial operators is less than ours. Now they offset this by the fact that most of them also operate brokerage businesses.

Senator BARTLETT. Less or more the per case loss?

Mr. HUBER. The commercial operators per case loss, I think is more than ours.

Senator BARTLETT. You said "more." I thought you meant less. This provides an essential employment not only for the men of these Indian communities but likewise for many of the women who work in the canneries; is that correct?

Mr. HUBER. That is correct. And they also have one more advantage in that they supply a market for the fish of the native vessels and with the production that there has been in southeastern Alaska the past couple years, they might have difficulty in marketing their fish if it weren't for the native canneries.

Senator BARTLETT. I might say here there is a huge carryover as we all know of pink salmon. It has been resting in the warehouses in Seattle for a long while. The Congress decided fish ought to be added to the food-for-peace program. The Budget Bureau decided otherwise.

FURNISHING BARROW HOMES WITH GAS

Commissioner Nash, when I was in Juneau a week ago last Monday, I was talking with Senator Hobson, of Barrow, who, as you know, is an Eskimo and a member of the Alaska State Senate. He said to me that the accomplishment of the program which will bring gas into the homes of the people at Barrow will be the most meaningful thing that has happened there for a long while. Will you tell the committee the status of that program?

Commissioner NASH. Yes, sir. I would like to reply generally and then call on the branch chief who is most familiar with the program. Thanks to special authorization provided by the Congress at the insistence of the Alaska delegation; it was made possible 2 years ago to enter into arrangements whereby gas from Petroleum Reserve No. 4 could be made available not just to the Government buildings, but to the Eskimo people and others in the village.

We had the very distressing situation there for many years of the schools and the quarters provided the Government people being comfortably heated with natural gas while the native dwellings and all other private dwellings were being heated with petroleum products brought up at great expense by ship and unloaded in an amphibious operation on the beach at Barrow. Storm losses and other costs made this a very, very expensive proposition.

Once this authority was provided by the Congress, we set about making the distribution of this gas a functioning thing. With our assistance, a native co-op was formed, operating under Alaska State law. We will provide such tehnical assistance as Barrow Utilities, Inc., needs to do its work.

We have provided some credit and some other assistance to the co-op. By this means the necessary hardware was brought up on the North Star, is set up and I will now ask Mr. Page, the chief of the branch of plant management for an up-to-date progress report.

Mr. PAGE. Part of the village has natural gas to it now. The other part is going forward and should be completed within the next few months.

Senator BARTLETT. And did this installation lower costs dramatically, heating costs?

Mr. PAGE. Indications are that it will do so.

Senator BARTLETT. Thank you.

COMPLETE MUNICIPAL UTILITY SERVICE FOR BARROW

Commissioner NASH. We are going beyond the mere provision of gas, Senator. For the information of the committee, Barrow Utilities, Inc., is set up to provide a complete municipal utility service in this arctic village. In connection with the Barrow utility request which you inquired about earlier, we are building, in our own facilities enough capacity for water distillation and for the treatment and disposal of sewage so that Barrow Utilities will be able to provide a potable water service by hauling from our installation and a scavenger service for waste which will be treated and discharged into the sea by our own utility. The utilities will charge for this service and we will in turn charge them for that portion of the service that we are performing over and above our own needs.

By this means electricity, gas, potable water, sanitation, and waste disposal, will all be provided at a means that Eskimo hunters can afford that will be the first time this has ever been done in any arctic community. The Canadians are doing the same thing in their northern installation at Inuvik. We entered into this thing with a good deal of admiration and envy at what they were doing. But when we looked into the costs, we decided we had to find a more economical way of providing this service.

Senator BARTLETT. I think it is going to be a revolutionary area.

Senator MUNDT. How large a community is this?

Senator BARTLETT. About 1,200 now. It has been growing very rapidly because the Government does quite a little arctic research work at a point about 3 miles from the village and people have come there from the east and west.

Commissioner NASH. There is considerable school expansion planned, Senator Mundt, and our experience is that this is a big attraction to the Eskimo families because they will come into the village so their children can go to school.

FUNDING OF JUNEAU AREA OFFICE TRIBAL OPERATIONS

Senator BARTLETT. Like every place in the world it is growing pretty rapidly.

Commissioner Nash, can you tell me how much money it is proposed will be allocated in the present budget to tribal operations in the Juneau area office?

Commissioner NASH. I don't have the breakdown. We can supply it for the record unless Mr. Quinn is here and happens to know. We will provide that for the record.

Senator BARTLETT. For this year the appropriation was something on the order of $65,000. I met with several people up there in December in Juneau and it was suggested that the work of this particular office is going to increase if services are to be performed so greatly in the forthcoming fiscal year that there ought to be an enlargement of the budget for that office.

Commissioner NASH. That is supervised by Associate Commissioner Officer.

Mr. OFFICER. Senator, I don't recall by how much but I will be happy to supply that for you.

(The information referred to follows:)

We propose to allocate $95,015 for fiscal year 1966 to Juneau. This will finance the present organization and provide for two new positions at Fairbanks.

The fiscal year 1965 budget for Juneau is $73,500. We intend to increase that by $21,515 to provide for increased staff expense and the two additional positions at Fairbanks.

MOUNT EDGECUMBE CONSTRUCTION PROJECT

Senator BARTLETT. All right. I will talk to you later about that, Mr. Officer, thank you.

You mentioned, Commissioner Nash, your plans for Mount Edgecumbe and in that connection, Mr. Chairman, I should like permission to offer for the record a telegram from Dr. Leslie Yaw, president of the Sitka Chamber of Commerce, endorsing this program and a resolution from the Sitka City Council likewise in favor.

Chairman HAYDEN. That will be inserted in the record.

(The communications referred to follow:)

SITKA, ALASKA, *February 12, 1965.*

Senator E. L. BARTLETT,
Washington, DC.:

Sitka Chamber of Commerce has previously fully endorsed the expansion and development of Mount Edgecumbe comprehensive high school. We are gratified with progress that request for construction has made and urge your full support leading to final enactment by Congress. You are assured that the Greater Sitka community has strong healthy attitude relating to problems of the education of native young people, the value of which cannot be measured in dollars and cents.

LESLIE YAW, *President.*

RESOLUTION NO. 376. A RESOLUTION OF THE CITY OF SITKA, ALASKA, URGING THE EXPANSION OF THE MOUNT EDGECUMBE FACILITY OF THE BUREAU OF INDIAN AFFAIRS

Whereas in the past the Bureau of Indian Affairs school at Mount Edgecumbe has done a signal service to the native children of Alaska; and

Whereas the facilities of the Mount Edgecumbe installation are now strained with the load of children and pressure of more children wanting their chance at an education; and

Whereas the mild climate, access to cheap water transportation, location on the ferry system, established base of existing facilities at Mount Edgecumbe, and the goods and services that a modern alert small city can provide are all available at Mount Edgecumbe or in the Sitka area; and

Whereas the city of Sitka, Alaska, has based a large part of its economy on the providing of the various goods and services needed by the personnel of the Mount Edgecumbe installation; and

Whereas all these factors allow the needed expansion of the educational facilities available to the Alaskan natives to be made at Mount Edgecumbe cheaper, faster,

and with less disruption than at any other place available: Now, therefore, be it

Resolved:

1. That the City Council of the City of Sitka, Alaska, wish to commend the administration of the Bureau of Indian Affairs for their excellent job to date in their efforts to educate the native children at Mount Edgecumbe.

2. That the Bureau of Indian Affairs is hereby urged to expand their facilities at Mount Edgecumbe to provide sorely needed additional educational facilities.

3. That the Bureau of Indian Affairs is hereby assured of full cooperation from the city of Sitka in any of their educational efforts or efforts to expand the Mount Edgecumbe facility.

4. That the expansion would give the slightly larger economic base necessary to the city to be able to provide even better and wider range of services available to Mount Edgecumbe personnel at even more reasonable costs.

5. That copies of this resolution be sent to Mr. Robert L. Bennett, area director, Bureau of Indian Affairs, and Mr. Philleo Nash, Commissioner, in Washington, D.C.

Passed and approved by the Council of the City of Sitka, Alaska, this 23d day of October 1962.

JOHN W. O'CONNER,
Mayor.

Attest:

MARGARET B. FIDAROFF,
City Clerk.

DORMITORY

Senator BARTLETT. You mentioned that while testifying earlier that this was proposed to be the first of three phases. Will you tell us something about the other two?

Commissioner NASH. Yes, sir. The total cost at Mount Edgecumbe when it is completed will be $10,860,000. The facilities needed are a 300-capacity boys' dormitory, 200-capacity girls' dormitory, 21 classrooms, 3 home economics classrooms, 5 science laboratories, 2 typing classrooms, an instructional material center, an administrative unit, and the necessary supporting facilities.

We also will want to remodel and enlarge the kitchen-dining hall, provide 40 sets of quarters and do the necessary utility work and the site improvement to increase the school capacity to 1,020.

Senator BARTLETT. From what?

Commissioner NASH. Don, what is the nominal capacity at the present time?

Mr. KETHRO. 672.

Commissioner NASH. But that is exceeded. It is overcrowded and a highly dangerous situation.

Senator BARTLETT. Then the three phases are planned for consecutive fiscal years?

Mr. KETHRO. It would depend upon how we get along this first year, Senator. You know, construction takes a little longer in Alaska. We assume right now that we will make them in consecutive years; yes.

Senator BARTLETT. That means then that over two-thirds of the total sums you will require are included in this next year's budget?

Mr. OFFICER. Yes, sir.

Commissioner NASH. Yes, sir; we are asking for $6,860,000. This is priority No. 1 in our Alaskan construction program. We have our fingers crossed on the safety factor.

FAIRBANKS PUBLIC SCHOOL

Senator BARTLETT. In this connection, Commissioner Nash, I feel obligated to call to your attention a dissenting viewpoint on this.

It comes to me in a letter dated January 30 from the Fairbanks Native Association. It is signed by Ralph Perdue and Dr. H. B. Faith, Jr. And these people who were in attendance at the meeting apparently were somewhat distressed at the plans for Mount Edgecumbe because they had understood that it was the intention of the Bureau of Indian Aflairs to place at Fairbanks or nearby a dormitory to accommodate children from that entire northern and western area of Alaska and the dormitory would probably have been placed according to plan on or near the University of Alaska campus and then the children would have gone to the public schools in Fairbanks.

Would you care to give us the present intention of the Bureau relating to this Fairbanks facility?

Commissioner NASH. Yes, sir; I will be very glad to. We have never departed from our idea that the most desirable school development in Alaska, other than replacing these overcrowded and unsafe facilities at Mount Edgecumbe was the development of what we would call down below a lab school I think. A school on the campus or closely associated with the University of Alaska which would facilitate teacher training, would be an important educational institution affiliated with the Department of Education of the University of Alaska. It would provide high school training for native young people and others from outlying areas who might require a boarding facility that would be in such close proximity to the university that it would encourage them to go on to higher education.

DISSIDENCE BETWEEN STATE OF ALASKA AND BUREAU OF INDIAN AFFAIRS

However, when I became Commissioner, there was a bitter controversy with strong emotions between the State of Alaska and the Bureau of Indian Affairs and it seemed to me this was a very unfortunate situation and an unhealthy climate to develop with the State of Alaska the necessary education program for the rural areas. I asked for a conference with the State of Alaska, the Office of Education and our own Bureau people in Washington at which it was agreed that a State committee on education would be created in Alaska, report to the Government and would develop a program for rural Alaska, especially native people.

We pretty well committed ourselves in advance to accepting the conclusion of this committee on which we were adequately represented as to what the priorities of Alaska education should be and in what direction they should go.

When that committee made its report, which we accepted and which is the basis of our present construction priorities in Alaska, it did not include any reference to the Fairbanks proposal. The fact that we still are attached to the idea is, I think, neither here nor there.

We bound ourselves to accept the judgement of the committee and this, therefore, represents the desires of the authorities in Alaska to how they might proceed. And the Legislature of Alaska has gone ahead with bonding operations for Nome and subsequently for Kodiak and again we have accepted this as a decision.

INCREASE OF ALASKAN INDIANS AND ESKIMOS ATTAINING HIGHER EDUCATION

Senator BARTLETT. Thank you. I don't have any further questions, except one. Reference was made here a while ago to the number

of Indian boys and girls attending college. I was very heartened not long ago talking to Mr. Robert Bennett, area director for Alaska, to learn of the almost astronomical increase in the number of Alaskan Indian, Eskimos, and all the others who are gaining higher education. And I was wondering if there could be placed in the record, if it isn't available here I am sure Mr. Bennett will have all the information, for a statement relating to this.

It is so encouraging ,I think it ought to be made available to whoever reads the records.

Mrs. THOMPSON. We will be glad to place it in the record.

Senator BARTLETT. Thank you.

(The information referred to follows:)

ALASKA NATIVE STUDENTS IN SCHOOLS OF HIGHER EDUCATION

Fiscal year	Number of students [1]	College students receiving Bureau grants
1957	94	19
1958	157	35
1959	256	57
1960	387	63
1961	418	78
1962	426	101
1963	571	109
1964	[2] 763	102

[1] This count includes all native students enrolled in colleges and universities and in technical schools, and vocational schools offering training above the high school level.

[2] Of this number, 104 students were enrolled in the University of Alaska, 38 in other colleges in Alaska, and 60 in colleges outside Alaska; a total of 202 college students, 102 of whom received Bureau grants.

IMPROVEMENT OF ROAD IN BELCOURT VICINITY

Chairman HAYDEN. Mr. Young?

Senator YOUNG. I have several questions. I will ask two or three of them and they can answer the others for the record, if that will be all right.

I have been contacted by a number of people for several years now from the Belcourt vicinity concerning the need for improving and paving a road running south from North Dakota Highway 5 to the Queen of Peace Convent.

No. 1, is this road on a reservation, and if so, how much of it is on the reservation.

Commissioner NASH. I don't know.

Mr. TRIER. Yes, the road is partly on the reservation. The road is a county highway and is not on the Indian Bureau system. We have estimated that it would cost about $25,000 to improve it with a bituminous surface.

Senator YOUNG. What is the condition of the road now?

Mr. TRIER. It is a gravel surfaced road at the present time.

Senator YOUNG. Does the Bureau of Indian Affairs have the authority to improve this road or would this require special arrangement with either the State of North Dakota or with that county?

Mr. TRIER. The Bureau has authority to improve roads on Indian reservations; however, it has not been the policy of the Bureau to take over county roads and improve them unless there was some very strong Indian benefit reason to do so.

Senator YOUNG. You do have the authority to enter into some arrangement with them if the committee saw fit to provide additional funds?

Mr. TRIER. The authority we have would permit the Bureau to go in and improve the road without entering into an arrangement except if we did we would want the county to maintain the road after we worked on it.

BUREAU SUPPORT FOR INDIANS IN NURSING HOME

Senator YOUNG. The people in Newtown are in the process of raising funds and negotiating a loan for the construction of a nursing home for Newtown which as you know is adjacent to the Fort Berthold Indian Reservation. They propose to provide space for Indians of advanced years as well as non-Indians.

The Mountrail County commissioners have indicated that through their welfare program they will pay for the cost of any person in Mountrail County who is admitted to this home and eligible for welfare assistance. Would the Bureau of Indian Affairs branch of welfare be authorized to face costs of those Indians needing this type of care and who are otherwise eligible for assistance from your branch of welfare.

Commissioner NASH. Miss Gifford, will you take this question, please?

Miss GIFFORD. Senator Young, in cooperation with the Division of Indian Health, we make arrangements for proper care of those Indians on reservations. We take their recommendations because sometimes older people need rest-home care or they may need more complicated medical care. We have no policy that would prevent our paying for the care of an Indian otherwise eligible in such a home if one is actually established. We could do that.

Senator YOUNG. Do you have any estimate as to how many members of the three affiliated tribes might be eligible for welfare assistance of this type?

Miss GIFFORD. I am sorry I don't have that at hand, Senator Young. I have been told that the tribe itself is requesting Indian Health to establish more clinics on the reservations. They are feeling that they want more services within the reservation area. I do not know how many people might fall within the category that you are talking about.

Senator YOUNG. Could you look into this and give a little more information for the record?

Miss GIFFORD. Yes.

(The information referred to follows:)

The proposal apparently is to provide nursing home care for elderly Indians. It is difficult to determine how many Indians might utilize such care, because one must consider not only the physical need for care, and eligibility on the basis of being without income or other resources, but also willingness to enter a nursing home. We believe there are 15 to 20 Indians on the Fort Berthold Reservation receiving old-age assistance, and 25 to 30 receiving aid to the permanently and totally disabled. The exact statistics concerning these categories can be secured from the county welfare department.

VETERANS' ADMINISTRATION PROGRAM FOR NURSING HOMES

Senator YOUNG. The Veterans' Administration, as you know, has embarked upon a pilot program of providing nursing homes in lieu of hospital beds. I visited one of these recently and it has worked out very well, Mr. Chairman. The cost of a bed in a nursing home is only about a third or fourth of that in a hospital. I would think in the case of many Indians this would be much cheaper and perhaps even better.

INDIAN SCHOOL AT DUNSEITH

Just one other question and that concerns the school at Dunseith. As you know, this is off the reservation and some 4 or 5 years ago this committee saw fit to provide some construction funds for this off-the-reservation school because they had a high percentage of Indians and they weren't able to do it themselves.

Now this school is consolidated I understand. Even then, over half the children in this school are Indian. Now they are faced with another housing problem for these students. They will either have to start sending them away or the Federal Government will have to help them build additional facilities. These schools have worked out very well. The white people are very happy with Indian children.

But here is a community with over half the children Indian and no tax base and no way that they can construct the school themselves. I may be offering an amendment even though it would cause a suspension of the rules, but I wish you would provide the committee with information regarding the Indian schools there.

Commissioner NASH. We will be glad to do that. In a preliminary way we are familiar with this problem and in round numbers we are talking about $750,000 that will be required. But this is a highly preliminary estimate. I think it would be advisable for us to look into it further and supply detailed estimates for the record.

(The information referred to follows:)

SCHOOL FACILITIES

The Dunseith Public School, District No. 1, has stated that they are in need of additional school facilities. To take care of an increased school enrollment, 11 elementary classrooms, a music room, a shop building, new kitchen, and multi-purpose room is needed. Equipment is also required for their present home economics and business education classroom and library books to adequatley stock their library.

The present enrollment of the Dunseith Public School is 619 students in the 1st through the 12th grade. The enrollment in grades 1 through 8 is 450 students and the high school enrolls 169 students. Of the total school population, approximately 300 are Indian children.

The estimated cost of this proposed addition and necessary utility connection is $705,000. The Bureau does not now have construction funds for this project nor are there any funds in the fiscal year 1966 justifications.

ANSWERS TO ADDITIONAL QUESTIONS TO BE SUPPLIED FOR RECORD

Senator YOUNG. All right. And if you will supply the answer to the rest of questions for the record.

(The information referred to follows:)

TRIBAL ROLL FOR CHIPPEWAS

A. Last year you will recall we provided $12,000 to begin work on the tribal roll for the Chippewas at Belcourt.

1. Have you included funds in this year's budget to continue this work; if so, how much are you requesting?

Answer. We included in the 1966 budget $10,000 to support two positions at Turtle Mountain Agency.

2. How is this work progressing?

Answer. A total of 6,841 applications for enrollment have been sent out to persons claiming eligibility. So far 3,177 applications for enrollment have been filed. The staff at Turtle Mountain have processed 1,683 applications. All were approved except 32 who were found to be ineligible but who will probably appeal. Turtle Mountain on February 1, 1965, had a backlog of 1,494 applications on hand. We estimate that only about one-half of the people who may have eligibility have been contacted. The Turtle Mountain roll will not be completed until well into fiscal year 1967.

FORT TOTTEN SIOUX

B. The Fort Totten Sioux, as well as the people of Devils Lake, are extremely anxious to have Fort Totten reestablished as a separate agency as opposed to the current arrangement where it is a subagency of Belcourt.

1. What do you estimate the annual cost to be of reestablishing Fort Totten as a separate agency?

2. Would such action require any new facilities at Fort Totten; and, if so, what is their estimated cost?

Answer. It is estimated that the annual cost would be $60,000 for reestablishment.

This reestablishment to an agency would require the construction of some new facilities. An engineering survey was conducted in the fall of 1964 and it revealed the need for a new office building; a storage, firehouse, and maintenance building; 28 employees quarters and a new vehicle storage building. It is estimated that the cost of providing these facilities and the necessary utility work would be $1,170,000.

C. You will recall several years ago funds were provided for the construction of a new classroom building and gymnasium at the Wahpeton Indian School. I understand that neither shower space nor locker space is provided in this building. It seems rather strange to have provided a gymnasium but no space either for storing clothes or equipment or space for these children to take showers after athletic events or physical education classes.

1. Why weren't these facilities included when this building was designed several years ago?

2. What do you estimate it would cost to provide these facilities?

Answer. The planning program for this building, which was completed in 1961, provided for the construction of a multipurpose room which would be used for school assemblies, plays, chorus, and band activities. An existing gymnasium was used for athletic events and physical education; therefore, additional shower rooms were not provided in the new school. Since construction of the new 160-capacity dormitory will require the razing of the gymnasium building, the Bureau has recognized the need for the showers and dressing rooms. Accordingly, the Bureau has already prepared drawings for the inclusion of these facilities in the new school building. The estimated cost is $10,000, and work is scheduled to be done during the summer months of 1965.

D. I note you have included in your budget $345,000 for a water filteration plant on the Standing Rock Reservation. Is this facility for the Fort Yates community; and will the funds you have requested in your budget be sufficient to complete this project? If not, how much more will you need?

Answer. The water treatment facility will serve the Fort Yates community. The $345,000 will be adequate to complete the project.

RESPONSES TO QUESTIONS BY SENATOR MCGEE

Chairman HAYDEN. Senator McGee has left with me a number of questions which I shall place in the record. You may provide information in response to them.

(The material referred to follows:)

Wind River Reservation, Wyo.

Question. I am particularly interested in what efforts are being made to provide vocational education or training to Indians throughout the country and particularly to those on the Wind River Reservation in Wyoming. I understand there are efforts being made along this line both with programs within the Bureau and others of a more general nature.

Would you review the vocational programs which have been made available in conjunction with the Area Redevelopment Act, including the crafts taught, the number of students and the postgraduation results.

What if anything is being done to increase the basic educational level of those individuals who are not in a position to acquire or absorb vocational training?

Public Law 959 enacted in, I believe, 1958 provided some vocational opportunities within the BIA. Will you discuss briefly the operation of this program and indicate what degree of success you have met with it? I would like to know the number and scope of training offered, the number of enrollees who have entered and completed the courses and any other comments you might wish to offer to give the committee some better insight to this program.

At the present time, do you have adequate funds to accommodate all applicants who are qualified and who have expressed an interest in the program or do you have a backlog of applicants?

Do you have a backlog of applications from the Wind River Reservation? If so, how many?

Would additional funds take care of all or any part of the backlog or has it accumulated for other reasons?

Answer. During the last fiscal year we arranged for a course of preapprenticeship carpenter training at Wind River with enrollment of 12 young men under the Area Redevelopment Act. Of this number, all completed their course and all were employed in the carpentry trade at the conclusion of their training. As of this week, a check was made and we find that 8 of the original 12 are currently employed as carpenters and 4 are seasonally unemployed, but are expected to reenter the labor market as the building trades business picks up during the spring months.

This fiscal year, and within the next few weeks, we will be starting an approved sheepshearing course that is structured to train hand shearers into machine shearers. This is a 4-week course arranged for and sponsored by the Area Redevelopment Act. Twelve trainees have been selected and will begin training shortly.

An Area Redevelopment Act course is in the process of being approved for general farming (upgrading). This project is set up for 15 trainees and is expected to start the latter part of March and will continue for 8 weeks.

There is an ongoing and continuing Area Redevelopment Act course for hospital aids operating at Lander, Wyo. Thus far we have referred two Indian applicants to this course who have been accepted for participation. We are advised that additional Wind River Indians will be referred.

The Billings area staff is in the process of preparing an application to the Manpower Development and Training Act for the approval of a prevocational course of training that will qualify Montana and Wyoming Indians to enter full-time vocational training courses of their choice. We are advised that at least 10 Wind River Indian families will be selected for this type of training.

Since Public Law 959 was authorized in 1958—79 heads of families and single Indian individuals from Wind River have been entered into training. At the present time, 20 heads of families and single people are currently enrolled and are pursuing courses in institutional adult vocational training.

At the present time, we have 14 applications in process from Wind River Indians on our backlog list. Funds are not available from this year's appropriation to provide training for these people. They will enter into training as soon as funds become available.

Community Hall at Arapahoe Reservation

Question. It has been brought to my attention that the community hall at the Arapahoe Reservation is in a rather sad and deplorable state and is not suitable for continued use. The inadequacy of this facility is more evident when compared to the new building which is nearing completion at Fort Washakie for use of the Shoshone Indians.

Are you aware of any plans whatsoever to construct new facilities for an Arapahoe community hall on the Wind River Reservation?

What source of funds might be available for such construction?

Who would have to initiate the necessary request for action to investigate the possibility of these improvements?

Answer. Construction of a new Arapahoe community hall presently is not contained in the Bureau's long-range construction program.

Funds are not available for this work, and funds were not included in the fiscal year 1966 budget for a community hall on the Wind River Reservation; therefore, the only way funds could be provided for fiscal year 1966 would be the inserting of an amendment to the Bureau's budget to provide the necessary funds. An estimate of cost cannot be prepared until a building program is known.

An inclusion in the regular budget submission for the Bureau initiation of the project should come as a request from the local people to the superintendent, Wind River Agency, noting the building condition and the need for such a community building. After being reviewed at the agency level, the justification will then be sent to the Billings area office and finally to the Washington office for assignment of a bureauwide priority.

Limitation or Restriction on Use of Tribal Funds

Question. It is my understanding that in prior years in reference to appropriations by Congress of tribal funds that a limitation or restriction has been placed upon such appropriations which prohibit such funds from being used to purchase fee lands to be put in trust status in Nevada, Oregon, Washington, and Wyoming. Some 25 years ago there was appropriated $1 million which could be used by Indians on the Wind River Reservation without such restrictions. Most of this appropriation has been expended, and I understand that some very desirable land has been acquired through this means. I also understand that our Wyoming Indians could acquire further land if such restrictions were not provided.

With these comments in mind, I would like to ask:

(1) What is the history behind such restrictive language and what was the reason for it originally?

(2) What purpose does it serve today?

Answer. Restrictive language relating to the use of tribal funds for the purchase of land and improvements originally appeared in the act of July 1, 1946 (60 Stat. 348), appropriating funds for the Department of the Interior for the fiscal year ending June 30, 1947. This act included an item for $350,000 of tribal funds for the purchase of land and improvements; lease of lands and water rights; and necessary expenses incident thereto, with title to and land or improvements to be taken in the name of the United States in trust for the tribe for which purchased, provided that no part of the appropriation should be used for the acquisition of land or water rights within the States of Nevada and Oregon either inside or outside the boundaries of existing Indian reservations. The language was designed primarily for two purposes; namely, to preclude the enlargement of Indian reservations within those States through the acquisition of lands outside the boundaries of existing reservations, and to prevent the removal of additional land from the local tax rolls.

However, the practice of including in an appropriation item language restricting the purchase of land for Indians outside the boundaries of Indian reservations was established several years before, and appeared regularly in the item appropriating funds for the purchase of lands and improvements thereon under authority contained in section 5 of the Indian Reorganization Act of June 18, 1934 (48 Stat. 984; 25 U.S.C. 465). In fact, the first appropriation of funds for the purchase of lands under this authority was contained in the Interior Department Appropriation Act of May 9, 1935 (49 Stat. 176), for the fiscal year ending June 30, 1936, which provided that no part of the sum appropriated for this purpose should be used for the acquisition of lands outside the boundaries of existing Indian reservations in the States of Arizona and Wyoming.

A slight but important change in the language of the annual item appropriating tribal funds for land purchases appeared in the Interior Department Appropriation Act for the fiscal year ending June 30, 1954, which made available the sum of $3,040,000 of tribal funds for the purchase of land and improvements for Indian tribes with title to be taken in the name of the United States in trust; provided that no part of the appropriation or other tribal funds could be used for the acquisition of land or water rights within the States of Nevada, Oregon, Washington, and Wyoming, either inside or outside the boundaries of existing Indian reservations, if such acquisition results in the property being exempted from taxation.

Although it would appear that the present restrictive language in the Interior Department Appropriation Act for the fiscal year ending June 30, 1965, with regard to the "tribal funds" item, was designed solely for the purpose of preventing the use of tribal funds of the Indians in the States of Nevada, Oregon, Washington, and Wyoming for the purchase of land and the removal of such land from the local tax rolls, this restrictive language still serves today the same purposes for which similar language was originally designed. Consequently, with the exception of a few tribes for whose benefit special legislation has been enacted, no tribal funds of the Indians residing on reservations within the four States mentioned in the 1965 appropriation act are being used for the purchase of land under that authority.

WINSLOW BORDERTOWN DORMITORY

Chairman HAYDEN. With regard to the dormitory at Winslow, Ariz., I will place in the record letters addressed to me by Hon. George Senner, a Representative from Arizona, from the area director, Bureau of Indian Affairs, Gallup, N. Mex., and from the Navajo County Democratic Committee, Winslow, Ariz.

(The letters referred to follow:)

HOUSE OF REPRESENTATIVES,
Washington, D.C., February 24, 1965.

Hon. CARL HAYDEN,
Chairman, Interior Appropriations Subcommittee,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: I appreciate very much this opportunity to submit a statement concerning the need for a multipurpose room facility at Winslow Bordertown Dormitory, Winslow, Ariz., to help carry out the education and recreation program more efficiently and effectively.

As you are aware, the Winslow Bordertown Dormitory is under management of the Bureau of Indian Affairs. There are 300 Indian students attending grades 1 through 10 at the Winslow public schools who reside in this dormitory. They are mostly from the Fort Defiance and Chinle areas.

When the dormitory was built, the overall plans for operation were so inadequate that it became apparent almost immediately that certain basic needs of the youngsters, besides sleeping and eating, would not be met.

Indian students with limited knowledge of the English language would most benefit from activities which supplement the academic program, such as 4–H, scouting, science, and arts and crafts clubs. Many interested residents of Winslow have offered to sponsor these activities but the space necessary to carry out these projects is not available in the present dormitory.

A multipurpose room with a musical instrument practice room, a hobby room, a small kitchen, and administrative unit, and counseling rooms is needed. New sidewalks to connect with the existing facilities, fencing, and equipment are also included. Land is available in the present BIA complex. Estimated cost is $300,000.

I earnestly solicit your subcommittee's careful and favorable consideration of this request.

With best personal regards, I am,
As always,

GEORGE F. SENNER, Jr.

DEPARTMENT OF THE INTERIOR,
BUREAU OF INDIAN AFFAIRS,
GALLUP AREA OFFICE,
Gallup, N. Mex., January 26, 1965.

Hon. CARL HAYDEN,
U.S. Senate,
Washington, D.C.

DEAR SENATOR HAYDEN: Reference is made to your letter of January 13, 1965, with regard to a letter you had received from Charlaine Adkins pointing out the need for a gymnasium and adequate space for a study hall at the Winslow dormitory.

In our letter to you of January 12, 1965, a review of the space situation at this facility was given. Space is limited and every room is utilized in day-to-day

operation. The dining hall has been used as a study hall at night in the absence of more satisfactory space.

The shortage of space and facilities such as multipurpose rooms, study halls, etc., at several of our school locations is known. Construction projects have been submitted by agencies to correct these deficiencies for several years past. The need for classroom space in which to put out-of-school children has been so great on the Navajo Reservation that projects providing classroom seating have been given priority over such ones as the Winslow multipurpose room. Now that we are rapidly approaching the time when a seat is available for every Indian child we can begin to correct some of the deficiencies about which Charlaine Adkins writes.

Sincerely yours,

WALTER N. SLEPP,
Acting Assistant Area Director.

STATE OF ARIZONA,
NAVAJO COUNTY DEMOCRATIC COMMITTEE
February 5, 1965.

Hon. CARL HAYDEN,
U.S. Senator,
U.S. Senate, Washington, D.C.
Hon. GEORGE F. SENNER,
U.S. Congressman, Third District,
Washington, D.C.

HONORABLE SIRS: You have had previous correspondence and recommendations regarding auxiliary buildings for the Winslow Indian dormitory program from other individuals and organizations in Winslow.

As you are aware, the Winslow dormitory program is under the management of the Bureau of Indian Affairs and has an approved enrollment of 300 Navajo boys and girls. These children are in grades 1 through 12, and have an age range from 6 to 20 years. When the dormitory was built, the overall plans for this operation were so inadequate that two phases of dormitory living met the minimum needs of the children. Eating on a shift basis and sleeping in a barrack-type dormitory are the two parts of the plan that was considered as meeting these minimum needs.

The children attend the Winslow public schools, of which the academic standars are high for boys and girls that speak and understand the English language well. The Navajo boys and girls, with a limited knowledge of the English language need additional rooms or buildings for supporting activities of the academic program such as 4–H, scouting, English, science and arts with craft clubs. People in Winslow have offered to sponsor these clubs but the present dormitory does not have space (or room) in their limited buildings. It has been suggested that they should have a gymnasium with added rooms for showers, storage and bleachers. This gymnasium should have a play area of 70 by 90 feet. The clubrooms (similar to regular classrooms) could be constructed on the side of the gym, along with the showers and storage. There should also be bleachers to accommodate 300 people. The overall size of the building would need to be approximately 120 feet wide and 150 feet long. The estimated cost of this building and equipment would be $250,000 to $300,000. Land is available for this project in the present BIA complex.

We recommend that steps be taken so that this project may be accomplished immediately. This undertaking would bring needed relief to the depressed condition which Winslow is now suffering.

Respectfully submitted.

ANNE SUTHERLAND,
W. S. HODGE,
Vice Chairmen, Navajo County Democratic Committee.
T. R. JENKINS,
Navajo County Supervisor.

ADJOURNMENT OF SUBCOMMITTEE

Chairman HAYDEN. We will adjourn until 10 a.m., Thursday, February 25, 1965, when we will consider the budget of the Forest Service.

(Whereupon, at 12:45 p.m., Wednesday, February 24, 1965, the subcommittee recessed, to reconvene at 10 a.m., Thursday, February 25, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

THURSDAY, FEBRUARY 25, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden, presiding.

Present: Chairman Hayden, Senators Bible, Byrd, Bartlett, Proxmire, and Mundt.

U.S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE

STATEMENTS OF JOHN A. BAKER, ASSISTANT SECRETARY OF AGRICULTURE; E. P. CLIFF, CHIEF, FOREST SERVICE; C. W. HENDEE, DEPUTY CHIEF; V. L. HARPER, DEPUTY CHIEF; A. W. GREELEY, DEPUTY CHIEF; M. M. NELSON, DEPUTY CHIEF; B. L. RASMUSSEN, DEPUTY CHIEF; G. M. JEMISON, ASSOCIATE DEPUTY CHIEF; E. W. SCHULTZ, ASSOCIATE DEPUTY CHIEF; B. H. PAYNE, ASSOCIATE DEPUTY CHIEF; G. D. FOX, ASSOCIATE DEPUTY CHIEF; A. R. SPILLERS, ASSOCIATE DEPUTY CHIEF; I. J. MASON, FORESTER; R. D. McCULLEY, FORESTER; B. B. BEATTIE, FORESTER; R. J. COSTLEY, FORESTER; J. J. BYRNE, ENGINEER; W. M. IRBY, BUDGET OFFICER; AND HARRY B. WIRIN, DEPUTY BUDGET OFFICER, DEPARTMENT OF AGRICULTURE

FOREST SERVICE 60TH ANNIVERSARY

Chairman HAYDEN. As we welcome the Forest Service here today, I am glad to note its 60th anniversary. I knew the Forest Service when it was born 60 years ago and have watched it grow to maturity.

In fact, I have assisted it over that period and like to believe that I have helped in making the organization what it is today.

So, wishing you a happy birthday, we shall start the hearings.

I understand Assistant Secretary Baker has a statement.

Mr. BAKER. Mr. Chairman, we appreciate this opportunity to appear before your committee to discuss the proposed budget of the Forest Service. We appreciate the comments you just made in introducing the hearing and we join with your many friends in expressing our appreciation for the work that you and your committee have

done these years in helping make the Forest Service the fine organization it is.

STATEMENT OF ASSISTANT SECRETARY BAKER

Chairman HAYDEN. You may present your statement, sir.

Mr. BAKER. All right, sir.

First of all, we are all aware of the current emphasis this year on financing only those programs essential to the national welfare. That has been our objective in working with your committee in previous years and I am confident that it will continue to be our mutual objective in future years ahead.

We know full well, Mr. Chairman, that the success and development of the forest resources of the country would not have worked out as well as they have if it had not been for the effective support of the Forest Service programs by this subcommittee. In the year ahead, for which this budget is presented, we are facing recordbreaking pressures of all kinds.

ACCOMPLISHMENTS ATTAINED

Timber business and the recreation business are at alltime record highs on the national forests. They will be still higher in fiscal year 1966. Roadbuilding, fire and pest protection, cooperative State and private forestry programs, research projects and construction, land exchanges, and range, watershed, and wildlife habitat improvement are all required at a higher level to meet these record high demands of timber sales and recreation use and other demands on the resources in the national forests.

NEW IMPACTS

Several new developments that come along with the inauguration of the Job Corps, the enactment of the Land and Water Conservation Fund Act and its implementation. Increasing efforts are required in interdepartmental coordination in the fields of outdoor recreation and water developments, and similar factors will generate impacts that will have to be accommodated along with our rising level of general volume of business in the national forests. We are prepared to do this.

Our budget request has strong justification on the basis of production of work, jobs in areas where they are needed to bolster rural economic strength. For example, the 11.4 billion board feet of timber we expect to harvest in 1966 will result in a total of 700,000 man-years of employment. For every one of the $133 million of receipts this timber harvest will generate, we know that $24 of value will be added in harvesting, processing, transporting, marketing, et cetera. This is an economic multiplier of no mean proportion. And, you are well aware of the employment and income directly resulting from recreation use, resource development, and all the rest.

JOB CORPS PROGRAM

The Job Corps program on the national forests should be nearing full swing in fiscal year 1966. I want to emphasize that we are glad to be participating in this effort to provide training and useful work experience for these young people. Our concern here today, of course,

is how these camps and the conservation and development work performed by these enrollees relate to our fiscal year 1966 budget requests.

The work accomplished by enrollees will not and should not supplant any of the regular on-going Forest Service programs included in the proposed budget we are discussing here today. There are many reasons why we believe this to be true.

First, the level of funds requested for recreation facility development, reforestation, timber stand improvement, et cetera, is already below what is actually needed and scheduled in the development program for the national forests. We will still be well behind schedule if our 1966 budget requests are fully met, and if the Job Corps program thrives as we all hope it will.

AREA RURAL EMPLOYMENT NOT DISPLACED BY JOB CORPS

Secondly, as you know, many rural people depend on employment gained from our resource development, protection, and related work. It is the desire of the Job Corps and it is all of our purpose that the location of Job Corps centers will not replace the normal employment that would otherwise be provided.

Most of these areas are among the pockets of poverty where each job that we now have is desperately needed. Laying off of local people in these cases because of their proximity to a Job Corps center does not seem to be a desirable result of this limit of the war on poverty and would not be what we would want to do.

The limited number of Job Corps camps, the limited skills of enrollees, and the limited radius of travel to worksites, make it clear that only a small fraction of the acreage in the national forest system can be developed or improved through this program. At this time we cannot forecast how much forestry work will be accomplished.

We do know that even with the top figure of 56 camps by the end of fiscal year 1966 only 7 percent or so of the national forest system will be affected. And very importantly and correctly, the emphasis in the Job Corps and the Job Corps conservation centers, the focus is on the boys. It is on their development, their education and training, and the work accomplishment is a secondary consideration.

In brief, our view is that the camps may help some in reducing the backlog of development work to be done on the national forests. Yet, we believe that it is necessary and desirable to retain the momentum of our regular, going programs.

EARTHQUAKE AND FLOOD DAMAGE

Within the past year six of our States experienced the most disastrous earthquakes or floods in their recent history. The earthquake in Alaska and floods in Idaho, Montana, California, Oregon, and Washington wreaked havoc throughout the tremor and storm areas. About 25 national forests sustained major damage and more than 20 others were damaged to a lesser degree.

Forest road and trail systems were especially hard hit. Bridges and culverts were washed out, as well as large stretches of roadbed.

Numerous heavily used recreation sites and facilities were completely destroyed, severely damaged, or covered with debris. Ranger stations, cabins, water and sewer systems, and other administrative improvements were flooded and badly damaged.

Improvement restoration work in Alaska, Montana, and Idaho is progressing very satisfactorily. The big job of rehabilitating and restoring improvements damaged in northern California and the Pacific Northwest is underway. It is most urgent that the damages be repaired as soon as possible, especially those involving the transportation system.

These transportation facilities are vital feeder routes from the national forest lands to county, State, and Federal highway systems.

Purchase and Lease of Data Processing Equipment

We have completed an intensive study of the need for replacing our computers and updating data processing capability in four of our western regional offices. The present equipment has served its purpose well. Our personnel have learned to use computer techniques to solve complex problems and handle huge volumes of data. However, the limited capacity of this equipment has made it necessary for us to rent equipment for the more complex problems and to handle the overflow.

Substantial savings will be realized through outright purchase of the computers at time of installation at an investment cost of $1.75 million in fiscal year 1966. A break-even point, purchase versus lease, will occur in 44.1 months. Immediate savings through release of rental equipment and elimination of outside contracting will reduce financing requirements of $1.6 million. This sum will be recovered through charges to projects and activities which benefit from use of the computers.

Mr. Chairman, as you know, both the areas of the country where national forests are located and where a large proportion of the privately owned land is forestry, coincide on an overlay with areas where we have serious problems of unemployment, low income and severe need for rural area development.

Stabilization of Farm-Forest Communities

These are areas that have the highest rate of school dropouts. They are areas for relatively poor agriculture land and small resident ownership both of farms and of forests. It has been my experience and my more recent observations that in those areas where national forest operations have been stabilized and the full value of multiple use sustained yield management has gone into effect, these local communities have become economically stabilized and are some of the more attractive communities in the country.

With continued sustained support for the various activities covered in this budget before you, it is our feeling, both in the private sector and with relation to the national forests, we can build more of these attractive stabilized farm-forest communities in our rural areas that will be an important adjunct to the building of the Great Society.

Mr. Chairman, I thank you for this opportunity and I would like to ask Chief Cliff to mention two or three other developments if we may.

PURPOSE STATEMENT AND JUSTIFICATION

Chairman HAYDEN. I will place in the record a "purpose" statement supplied by the Forest Service with its budget justifications.

(The statement and justification referred to follow:)

PURPOSE STATEMENT

The Forest Service was established February 1, 1905, pursuant to the Transfer Act of February 1, 1905, which provided for the transfer of the forest reserves from the Department of the Interior to the Department of Agriculture. Forest reserves and the Bureau of Forestry were established by other acts prior to the Transfer Act. By the act of March 4, 1907, the name "forest reserves" was changed to "national forests" and the latter name has been used since that time.

The Forest Service is responsible for promoting the conservation and wise use of the country's forest and related watershed lands, which comprise one-third of the total land area of the United States. To meet its responsibility the Forest Service engages in three main lines of work, as follows:

1. Management, protection, and development of the national forests and national grasslands.—The 186 million acres of national forests and national grasslands are managed under multiple use and for sustained yield. Under these principles natural resources of outdoor recreation, range, timber, watershed, and wildlife are utilized in a planned combination that will best meet the needs of the Nation without impairing the productivity of the land. These management and utilization principles were recognized in the Multiple Use-Sustained Yield Act of June 12, 1960 (74 Stat. 215).

In managing the national forests, technical forestry is applied to the growing and harvesting of timber crops. Grazing use is managed to obtain proper range conservation along with utilization of the annual growth of forage. Watersheds are managed to regulate streamflow, prevent floods, and provide water for power, irrigation, navigation, and municipalities. Management includes the handling of 135 million visits of people to the national forests for recreation purposes. Wildlife habitat is managed to provide a suitable land and water environment for both game and nongame wildlife.

Under the multiple-use principles most areas are used for, or serve, more than one purpose or objective. For example, about 50 percent of the area within the national forests serves five different purposes: (1) timber production, (2) watershed protection, (3) forage production, (4) wildlife production, and (5) recreation. An additional 28 percent serves four purposes in varying combinations. Of the remainder, 21 percent of the total serves three purposes with only 1 percent of the total reserved exclusively for a single purpose, mainly campgrounds and special use areas, such as summer homesites, pastures, corrals, etc. The varied interests which frequently conflict and which must be reconciled, and the vast areas covered, clearly require careful planning and skillful management of the national forest properties.

Gross area within unit boundaries encompasses about 226 million acres in 44 States and Puerto Rico, of which some 186 million acres are under Forest Service administration. Protection from fire and trespass is made difficult by the large area to be protected, the general inaccessability, the many thousands of miles of exterior boundary, the intermingled public and private land, the impossibility of taking preventive action with such a problem as lightning-caused fires, and the rapidly increasing public utilization of these lands and their associated resources.

The protection of the national forests includes the control of forest fires, the control of tree disease and insect epidemics, and the prevention of trespass.

The major development activities of the national forests are reforestation; timber stand improvement; revegetation; construction of roads, recreational facilities, range, and other necessary improvements; and land acquisition and exchanges.

The economic importance of the national forests and national grasslands is evident when it is considered that—

(*a*) They produced a cash income in the fiscal year 1964 of over $137.5 million. The following table summarizes cash receipts:

Class of receipts	1963 actual	1964 actual	1965 estimated	1966 estimated
Timber sales	$117,387,497	$127,959,538	$130,300,000	$132,700,000
Grazing	3,385,978	3,181,940	3,300,000	3,400,000
Land uses	3,738,160	4,580,180	4,800,000	5,000,000
National grasslands	1,712,565	1,792,840	1,800,000	1,850,000
Total receipts	126,224,200	137,514,498	140,200,000	142,950,000
Above amounts include—				
Suspense account, Alaska [1]	(820,828)	(915,812)	(925,000)	(925,000)
Suspense account, O. & C. Lands [2]	(4,341,916)	(4,154,700)	(4,000,000)	(4,000,000)

[1] Account established pending settlement of Indian rights on Tongass National Forest, Alaska.
[2] Account established for Oregon and California railroad grant lands, for which receipts are transferred to Department of the Interior for distribution under the acts of August 28, 1937, June 24, 1954, and August 3, 1961 (43 U.S.C. 1181f-g).

Approximately 65 percent of this amount is credited to the general fund in the Federal Treasury (miscellaneous receipts). The remainder is distributed in accordance with special acts of Congress, including 25 percent to the States or counties in which lands are located, and 10 percent made available for construction and maintenance of the Forest Service system of roads and trails. In addition to these cash receipts, there are the even greater economic values which result from the processing of end products derived from this utilization of national forest timber, forage, minerals, etc. There are also the important values of water, recreation, and wildlife which cannot be readily expressed in monetary terms.

(*b*) The area within national forest boundaries is equivalent to some 10 percent of the area of the continental United States. Over 40 percent of this land is within areas now experiencing severe economic distress. Proper management, development, and utilization of these lands are important factors in permanent improvement of these local economies. Millions of people who live in and near the national forests are supported in whole or in part through the economic development arising from the forests and their resources.

(*c*) The national forests supplied 11 billion board feet of timber in fiscal year 1964 to the Nation's forest products industries. This is expected to increase to 11.2 billion board feet in 1965. Dependence of the forest products industries on national forest timber continues to increase as the result of depletion of good quality timber on private lands.

(*d*) About 6 million head of domestic livestock (including calves and lambs) are grazed on the national forests and grasslands.

(*e*) These lands provide protection to municipal water supplies for nearly all western cities and towns and many in the East, to irrigation water used on about 20 million acres of western lands, and to many streams with waterpower developments. They provide flood protection to thousands of acres of rich valley lands and help to prevent more rapid siltation of reservoirs and stream channels.

(*f*) They provide a habitat for a large part of the big game animal population, for birds, for millions of small game animals and furbearers, and for fish.

(*g*) They provide opportunities for healthful outdoor recreation, with a minimum of restrictions, for millions of people who yearly visit the national forests.

2. *Forestry research.*—The Forest Service conducts research in the entire field of forestry and the management of forest and related ranges. This includes the growth and harvesting of timber, its protection from fire, insects, and diseases, the protection and management of watersheds, and improved methods for development and management of recreation resources. It conducts studies in forest economics, marketing of forest products, and a survey of the present extent and potential growth and use of the Nation's forest resources. It also conducts research to develop new and improved products from wood, to increase efficiency of utilizing forest products, and to advance the efficiency and mechanization of forestry operations. Results of research are made available to owners of private forest and rangelands, to public agencies which administer such lands, to forest products industries, and to consumers. The program has a twofold objective: (1) to backstop the national forest development program by devising more efficient practices for protecting, managing, and utilizing forest

resources and (2) to develop new and improved practices that will lead to sounder uses of forests in other public and private ownerships and more efficient and profitable utilization and marketing of forest products.

The Forest Service also cooperates with the Agricultural Research Service of the Department by reviewing and appraising for technical adequacy forest research projects beneficial to the United States which are conducted abroad. These projects are carried out with foreign currencies under section 104(k) of Public Law 480, as amended, and the dollar expenses of the Forest Service in connection with this work are paid from the appropriation "Forest protection and utilization."

3. *Cooperation with State and private forest landowners.*—The Forest Service cooperates with State agencies and private forest owners to (*a*) better protect the 440 million acres of State and privately owned forests and critical watersheds against fire, insects, and diseases; (*b*) encourage better forest practices, both for resource conservation and profit, on the 358 million acres of private forest land; (*c*) aid in the distribution of planting stock for forests, shelterbelts, and woodlots; (*d*) stimulate development and proper management of State, county, and community forests.

The Forest Service is also responsible for carrying out the provisions of section 401 of the Agricultural Act of 1956 (16 U.S.C. 568e), by providing assistance to the State forester or equivalent State official, through advice, technical assistance, and financial contributions for increased tree planting and reforestation work, in accordance with plans submitted by the State and approved by the Secretary of Agriculture.

Proper administration, protection, and development of these forest resources is essential as they must be so managed as to yield the maximum resource potential. In many rural areas, the forestry resource is the key to the establishment and maintenance of sound local economies. The State and private forestry programs of the Forest Service are a vital part of the Department of Agriculture's overall rural area development program.

Other work related to forestry includes:

4. *Insect and disease control.*—Activities to suppress and control destructive insects and diseases that threaten timber areas include two types of work carried on jointly by Federal, State, and private agencies: (*a*) Surveys on forest lands to detect and evaluate infestations of forest insects and infections of tree diseases and determination of protective measures to be taken, and (*b*) control operations to suppress or eradicate forest insects and diseases, including white pine blister rust.

5. *Flood prevention and watershed protection.*—On national forest lands and on non-Federal forest lands within the watersheds authorized for treatment by the Department of Agriculture under the Flood Control Act of December 22, 1944, the Forest Service plans and installs watershed improvement measures, in the form of minor physical structures, cultural measures, and intensified fire control, to retard runoff and reduce floodwater and sediment damage. Work on non-Federal land is carried on in cooperation with the Soil Conservation Service and the appropriate State and local agencies.

The Forest Service also cooperates with the Soil Conservation Service, appropriate State agencies, and the local organizations sponsoring small watershed protection and flood prevention projects initiated under the Watershed Protection and Flood Prevention Act of 1954, as amended, in planning and installing forestry and related measures on the watersheds and in interagency studies of proposed water and land resource developments on river basins for the purpose of obtaining integrated resources development programs.

6. *Work performed for others.*—The Forest Service is frequently called upon to perform services for other Federal, State, or private agencies on a reimbursable or advance payment basis. Examples of these activities are:

(*a*) Protection of other Federal and non-Federal forest lands intermingled with the national forests.

(*b*) Disposal of slash resulting from sales of timber and the rehabilitation of such areas.

(*c*) Construction and maintenance of roads, and other improvements.

(*d*) Research investigations in forest, range, and water management and utilization problems.

(*e*) Cooperative survey, mapping, administrative, and reforestation projects, etc.

(*f*) Cooperation with defense and mobilization agencies on forest production and utilization projects, and related work.

(*g*) Acquire lands for outdoor recreation purposes under the Land and Water Conservation Fund Act.

(*h*) Construct, equip, and operate Job Corps centers to carry out part of the youth program authorized by the Economic Opportunity Act.

7. *Rural fire defense.*—The Forest Service, as a part of its regular programs, also directs Federal activities and provides technical guidance and training to States concerned with the prevention and control of fires which might be caused by an enemy attack in rural areas of the United States.

The Forest Service maintains its central office in Washington, with program activities decentralized to 10 regional offices, 130 forest supervisors' offices, 823 district rangers' offices, 10 forest and range experiment stations, the Institute of Tropical Forestry, and the Forest Products Laboratory.

1966 BUDGET ESTIMATES AND 1965 RECEIPTS

Chairman HAYDEN. There will also be included a summary table of estimated 1966 appropriations and receipts for fiscal year 1965. The total of this estimate, excluding permanent appropriations, is $292,887,000, which is $14,698,000 greater than the amount appropriated in fiscal year 1965.

(The table referred to follows:)

SUMMARY

	Estimated available, 1965	Budget estimates, 1966	Increase (+) or decrease (−)
APPROPRIATIONS			
Forest protection and utilization:			
Forest land management	[1] $153,499,000	$162,378,000	+$8,879,000
Forest research	34,285,000	32,554,000	−1,731,000
State and private forestry cooperation	17,013,000	17,513,000	+500,000
Total, forest protection and utilization	[2] 204,797,000	212,445,000	+7,648,000
Forest roads and trails	[1] 71,472,000	78,672,000	+7,200,000
Acquisition of lands for national forests, special acts	70,000	70,000	
Acquisition of lands for Wasatch National Forest	150,000		−150,000
Cooperative range improvements	700,000	700,000	
Assistance to States for tree planting	[1] 1,000,000	1,000,000	
Expenses, brush disposal (permanent)	9,500,000	9,500,000	
Roads and trails for States (permanent)	13,141,263	13,400,000	+258,737
Forest fire prevention (permanent)	[1] 25,000	30,000	+5,000
Restoration of forest lands and improvements (permanent)	[1] 100,000	100,000	
Payment to Minnesota (permanent)	137,763	138,000	+237
Payments to counties, national grasslands (permanent)	450,000	450,000	
Payments to school funds, Arizona and New Mexico (permanent)	108,205	110,000	+1,795
Payments to States, national forests fund (permanent)	32,837,416	33,540,000	+702,584
Total	334,488,647	350,155,000	+15,666,353
Deduct permanent appropriations (shown in detail above)	56,299,647	57,268,000	968,353
Total, (excluding permanent appropriations)	278,189,000	292,887,000	14,698,000
RECEIPTS			
Forest resource utilization	140,200,000	142,950,000	+2,750,000

[1] In addition, prior year balances are available.
[2] Exclusive of $411,000 transferred to General Services Administration.

STATEMENT OF MR. CLIFF

Chairman HAYDEN. Now, Mr. Cliff, if you have a written statement, will you please place it in the record and summarize it for the subcommittee?

Mr. CLIFF. Mr. Chairman and members of the committee, we do appreciate this opportunity to discuss our budget request with this

committee. Mr. Chairman, I want to thank you for your recognition of our 60th anniversary. It was on February 1, 1905, that President Theodore Roosevelt signed the act which transferred the then existing forest reserves to the Department of Agriculture from the Department of Interior.

Later in the year, the names of these reserves were changed to national forests and still at another time the name of the Bureau of Forestry was changed to the Forest Service and remained that way. I think, Senator Hayden, you are the only Member of Congress that has observed and actively participated in the development of the Forest Service from the beginning.

I know of no Member of the House or the Senate who has made a greater contribution to the development of our work than you have, and we deeply appreciate it. It has been a great privilege to work with you, and we look forward to a continuation of this relationship.

Chairman HAYDEN. It has afforded me much pleasure.

Mr. CLIFF. I do have a written statement which I will file for the record. I would like to mention a few highlights as a preface to some of the things that are in the budget.

(The statement referred to follows:)

STATEMENT OF EDWARD P. CLIFF

Mr. Chairman, I, too, am pleased to be here this morning. Before getting into the details of the proposed budget before you, may I take 5 minutes to lay before you some pertinent background information.

In a few weeks each of you will receive a copy of our new analysis of the national timber situation. We call it "Timber Trends in the United States." I think that you will find it to be a useful reference tool. A few highlights seem appropriate as a backdrop for your consideration here today.

This 2-year study has revealed substantial progress in improving the Nation's timber supply outlook since 1952. At the same time there is convincing evidence that much remains to be done to provide the amounts and kinds and quality of timber that industries can profitably use in supplying tomorrow's markets for timber products.

Although total growth exceeds cut at this time, much of the volume being added is on small trees, defective or low-grade material, and in species or locations of doubtful merchantability. The cut of larger sizes and higher qualities of species used for plywood and lumber still exceeds the growth of such material.

Our current projections of demand indicate that by the year 2000, consumption of pulp, paper, and board may triple; use of plywood and veneer more than double; and use of lumber increase roughly 50 percent. Demand for all products combined is expected to about double.

These prospective demands cannot be met without significant strengthening of timber programs. There is continuing need for timber stand improvement measures; reforestation, improved harvesting practices, better protection of timber stands from fire and pests, and better road systems.

On the national forests

This "Timber Trends" study reinforces the justification for the timber elements of the development program for the national forests. National forests and other public lands now contain about half of the remaining supply of sawtimber. They supply an increasing share of the total industrial roundwood requirements. By 1966, we anticipate that the national forests will supply nearly one-fourth of that total—and nearly one-third of all sawtimber harvested. More intensive development and management of these public properties is needed now to meet prospective timber needs.

On State and private forest lands

This study supports the need for increased cooperative fire and pest control efforts, more technical assistance to woodland owners, timber processors, and wood-using industries to protect and improve timber growth on the 78 percent of

the Nation's commercial forests that are in State and private ownership. We are currently appraising the significance of the "Timber Trends" study in terms of these and other aspects of our cooperative forestry programs.

In forest research

The "Timber Trends" study confirms the importance of research in forest products utilization, forest engineering, forest products marketing, timber resource protection, and timber management. Results of the "Timber Trends" study were considered in developing the 10-year national forestry research program sent to the Congress by Secretary Freeman last year. The study also underscored the need for an intensified forest survey to provide a continuing source of reliable resource data.

In brief, this new appraisal helps us to sharpen the timber elements of each of our three major programs.

I would like to take a moment to comment on our new item, "Water Resources Development Related Activities." In the past we have tried to meet our responsibilities in connection with reservoir areas with funds appropriated for a variety of activities. We have fallen far short of the level of participation and development needed.

The striking increase in planning and construction of water resource developments affecting national forest lands is unprecedented. Actions required of the Forest Service far surpass the level provided for in the development program for the national forests and the timing and location of these actions is not controlled by us.

We are sure that this separate treatment will make possible more efficient and better coordinated planning and development of these projects on national forest lands.

I would also like to mention the relationship of the Land and Water Conservation Fund Act to our regular land acquisition programs. This act offers an expanded opportunity to acquire key tracts of land having primary value for public recreation. Our request today for funds for land acquisition under the Weeks law, covers other lands which do not have primary recreation value. These tracts are highly important to an overall management of the national forests. They do not qualify for purchase under the Land and Water Conservation Fund Act.

One last item, we are requesting an increase in the dollar limitation for the temporary employment of experts and consultants from $25,000 to $50,000. The number of jobs requiring these services has increased during the past few years. This increase is expected to continue. The increase we are requesting will provide sufficient flexibility to obtain these outside services when necessary.

In concluding these opening remarks, I would like to state that we are making strenuous efforts now, and have been for some time, to improve our management practices in the interest of economy and efficiency. I am proud of the job that our team is doing. We have been working on this and making gains—I pledge our continued efforts in this direction.

Thank you.

SURVEY OF NATIONAL FORESTS

Mr. CLIFF. We have just completed a 2-year survey of the national forestry situation on all forest lands in this country. This is a periodic undertaking. This present study, you will have a report in your hands in the next few weeks, indicates that we are in a much improved situation from the standpoint of overall wood production than we were in 1952.

The outlook is much more encouraging. There still remains a big job to be done if we are going to meet our projected needs for forest products in the years ahead. The use is going to grow. It is going to be according to our projections, more than double by the year 2000, or about double.

There is a big job of improving quality of timber that we have grown and finding markets for the lower quality products. This study underlines the importance of our national forestry research program, the national forest development program, and provides us with a sound basis for making recommendations for an up-dated State and private forestry program.

Water Resources Development: Related Activities

Another thing that I would like to mention is the appearance in the budget this year of a new line item which we call water resources development related activities. This is a new item in the budget breakdown but it is not a new activity.

This relates to the work we have to do in coordinating national forest management with the construction agencies when reservoirs are constructed in or near the national forests. They often create great impacts. We have no control over the timing of the construction of the reservoirs.

That is controlled by other agencies. It becomes necessary for us to work with them to make studies of impacts such as increased recreation loads, transportation systems, fire protection, and so forth. We have been doing this with some of our regular funds but they have been inadequate to meet the total job, so this year we have included in the budget structure a separate item recognizing the importance of this work.

Land and Water Conservation Fund

The "Land and water conservation fund" estimates include funds this year, for acquisition of recreation lands for the national forests. But in this budget we have included the regular Weeks law acquisition funds. The reason for that is that the land and water conservation funds are not available for purchase of lands which are needed for anything except those areas primarily valuable for recreation.

There are lands within the national forests, key areas, that should be acquired for purposes other than recreation. So, we need to continue the Weeks law purchase in addition to the land and water conservation fund purchase.

I think that is all of the special items, Mr. Chairman. We are ready to answer any questions that the committee might have on our budget requests.

Development Program for National Forests

Chairman Hayden. Included in your volume of explanatory notes is a table showing the status of financing of the development program for the national forests. That table will be printed in the record.

(The table referred to follows:)

STATUS OF FINANCING

Cumulative fiscal years 1963, 1964 and 1965 [1]

[In thousands of dollars]

	1963–65 planned level	1963–65 available			Difference	Percent financed
		Forest Service appropriation	Public works	Total		
Forest management:						
National forest protection and management:						
Timber resource management:						
(a) Sales administration and management	83,576	82,610	----------	82,610	−966	98.8
(b) Reforestation and stand improvement	80,608	47,967	5,294	53,261	−27,347	66.1
Recreation-public use	130,343	75,705	10,611	86,316	−44,027	66.2
Wildlife habitat management	14,232	10,775	1,637	12,412	−1,820	87.2
Range resource management:						
(a) Management	16,106	15,118	----------	15,118	−988	93.9
(b) Revegetation	8,767	8,180	46	8,226	−541	93.8
(c) Improvements	11,760	9,809	1,986	11,795	35	100.3
Soil and water management	23,555	15,123	1,206	16,329	−7,226	69.3
Mineral claims, leases, and special uses	12,507	11,273	----------	11,273	−1,234	90.1
Land classification, adjustments, and surveys	16,648	11,569	----------	11,569	−5,079	69.5
Forest fire protection	80,080	68,380	1,187	69,567	−10,513	86.9
Structural improvements for fire and general purposes (construction and maintenance)	43,972	33,899	16,715	50,614	6,642	115.1
Total, national forest protection and management	522,154	390,408	38,682	429,090	−93,064	82.2
Insect and disease control:						
White pine blister rust control	11,712	10,697	51	10,748	−964	91.8
Other pest control	20,788	24,401	146	24,547	3,759	118.1
Total, insect and disease control [2]	32,500	35,098	197	35,295	2,795	108.6
Acquisition of lands, Weeks and special acts	12,530	4,712	----------	4,712	−7,818	37.6
Forest roads and trails (including all related appropriations) (obligating authority)	297,742	223,472	18,719	242,191	−55,551	81.3
Total	864,926	653,690	57,598	711,288	−153,638	82.2

[1] Excludes fiscal years 1964–65 supplemental appropriations and obligating authority for Alaska earthquake damages: Montana and Idaho flood damages. Includes 1965 Pay Act supplemental.
[2] Includes $7,200,000 for lands not administered by the Forest Service.

SUBSTANTIAL ACCOMPLISHMENTS BELOW PROJECTIONS

Chairman HAYDEN. Would you care to comment on the progress being made with regard to this program in comparison with the proposed schedules?

Mr. CLIFF. Yes, Mr. Chairman. The development program for the national forests as you know is a projection of needs for a 10-year period beginning with fiscal year 1963 and submitted to the Congress by President Kennedy in September 1961. As of the end of fiscal year 1965, we will be about 82 percent on schedule when we include the accelerated public works program accomplishments as well as regular programs.

We are not up to that level on all activities. Some have proceeded at a more rapid rate than others. We are gratified at this progress.

I don't think we are satisfied with it, because we think that our projections were sound and they are proving to be sound.

We realize the reasons that we couldn't get full financing. By the end of fiscal year 1966 the program did call for an acceleration in the work. And if the budget that we have before us is approved, it will mean that for fiscal year 1966 we will be only 61 percent of our proposed accomplishment level.

We are not keeping up with what we had projected or what we had hoped that we would be able to accomplish. Nevertheless, the accomplishments are substantial. We appreciate the support of this subcommittee in helping us get where we are.

We have set our sights high and we naturally would like to be further along in the attainment of our goals.

Economic Advisability of Procuring ADP Computers

Chairman Hayden. With reference to a statement on the ADP computers planned for purchase from fiscal year 1966 funds, the committee would like your assurance that this need has been studied thoroughly, including use of computers presently in Government or other ownership, and that the purchase is the most feasible and economic method of doing this work.

Mr. Cliff. Yes, sir; it has been studied very thoroughly and I would like Mr. Hendee, who headed up this work to comment on it if you don't mind.

Mr. Hendee. Mr. Chairman, we have been using ADP equipment for a good many years. Due to the large number of applications that we have had for our existing equipment and equipment that is available for rental to be used to do the work, we made a study assisted by the Department and experts in the Budget Bureau in connection with the need for these computers. These four computers will allow us to update and modernize our approach to the handling of large amounts of data that we have in the Forest Service.

As one example, by the use of computers and photointerpretations in our road engineering work, we are currently saving around 100 man-years, roughly $1 million a year saving. These four computers will allow us to more nearly meet the needs that we have and to move into additional areas.

The Budget Bureau in their study have recommended purchase rather than rental where you pay out on computers within a 72-month period. Actually, in this case we will pay out in 44.1 months. So, it is a very good proposal from the standpoint of total cost to the Government.

It will allow us to do a great deal more work with less people.

Forest Protection and Utilization

Chairman Hayden. I will insert in the record the justifications for your budget estimate of $212,445,000 for "Forest protection and utilization." This is an increase of $7,648,000 over the amount available to you last year, but the increase includes almost $4 million of pay act supplemental which you have requested but have not yet received.

(The justification referred to follows:)

PROPOSED CHANGE IN ACTIVITY STRUCTURE

Present structure (1965 budget)	Proposed structure
FOREST PROTECTION AND UTILIZATION	FOREST PROTECTION AND UTILIZATION
1. Forest land management: (a) National forest protection and management. (b) Fighting forest fires. (c) Insect and disease control. (d) Acquisition of lands.	1. Forest land management: (a) National forest protection and management. (b) Water resource development related activities. (c) Fighting forest fires. (d) Insect and disease control. (e) Acquisition of lands.

EXPLANATION OF NEED FOR ADDITIONAL ACTIVITY

The unprecedented increase in planning and construction of water resource developments requires a corresponding increase of activity by the Forest Service which is substantially beyond that provided for in the development program for the national forests. The decision to construct these reservoir projects, with their resulting impact on national forest land both in terms of timing and location, is made by other agencies and organizations rather than the Forest Service. These would include hydro electric, reclamation, irrigation, flood control and similar installations by State, private and other Federal agencies.

In prior years national forest responsibilities related to water resource development such as impact surveys, construction liaison, and reservoir associated public access, use and management facilities were financed from funds appropriated for a variety of actiivties such as "Recreation-public use" and "Soil and water management." These water resource developments involve land management activities normally conducted by the Forest Service. Participation in this work has been limited to those tasks which could not be postponed. It fell far short of the needed level of participants to achieve the objectives of water resource development within the national forest multiple use environment.

The Bureau of the Budget requested the land managing agency to request funds for reservoir associated cost in their agency budget rather than through the construction agency budget. Therefore, a separate activity is proposed to implement that decision and to provide the funds required for impact surveys, construction liaison, and public access, use and management facilities required because of the reservoir projects on a time and intensity level which permits a fully coordinated planning and development of water and related land resource projects associated with national forest system lands.

Project items have been adjusted as shown below to reflect the proposed change.

[In thousands of dollars]

	1964	1965	1966
Forest protection and utilization:			
Forest land management: National forest protection and management:			
Recreation—public use	−1,094	−1,231	----------
Soil and water management	−606	−656	----------
Water resource development: Related activities	1,700	1,887	4,532

(a) Forest protection and utilization

	Forest land management	Forest research	State and private forestry cooperation	Total
Appropriation Act, 1965	[1] $150,744,000	[2] $33,585,000	$16,955,000	[2] $201,284,000
Transferred to "operating expenses, public buildings service, General Services Administration" for space rental	−407,000	−4,000		−411,000
Proposed supplemental, 1965, for increased pay costs	+3,162,000	+704,000	+58,000	+3,924,000
Base for 1966	[3] 153,499,000	34,285,000	17,013,000	[3] 204,797,000
Budget estimate, 1966	[3] 162,378,000	32,554,000	17,513,000	[3] 212,445,000
Increase or decrease	+8,879,000	−1,731,000	+500,000	+7,648,000

[1] Includes $800,000 appropriated in the Supplemental Appropriation Act, 1965.
[2] Includes $1,900,000 supplemental appropriation appropriated in the Department of Agriculture and Related Agencies Appropriation Act, 1965.
[3] In addition, $700,000 is available by transfer from "Cooperative range improvements."

Summary of increases and decreases

	1965 available	Increase (+) or decrease (−)	1966 estimate
Forest land management:			
Timber sales administration and management to increase volume of timber cut and sold	$30,097,000	+$165,000	$30,262,000
Accelerate rate of reforestation	16,876,000	+615,000	17,491,000
Operation, maintenance and developments of recreation areas and facilities	25,410,000	+2,100,000	27,510,000
Conduct hydrologic surveys and prepare plans of management to increase quality of water yield, etc	5,146,000	+1,000,000	6,146,000
Increase verification, recovery and monumentation of property corners	4,012,000	+500,000	4,512,000
Additional payments to employees' compensation fund	615,000	+54,000	669,000
Meet costs associated with water development projects built by other agencies	1,887,000	+2,645,000	4,532,000
Meet increased costs of applying and monitoring nonpersistent pesticides	7,135,000	+1,800,000	8,935,000
All other	62,321,000		62,321,000
Total, forest land management	153,499,000	+8,879,000	162,378,000
Forest research:			
For forest fire research to strengthen basic laboratory research that will provide new knowledge fundamental to development of fire prevention and control techniques	1,897,000	+350,000	2,247,000
For forest products utilization research to improve performance of wood and improve basis for determining wood quality	5,401,000	+489,000	5,890,000
For investigations aimed at expanding and strengthening markets for timber products	1,139,000	+325,000	1,464,000
Reduction in timber management research due to closure of projects in New Jersey, Indiana, and California	7,687,000	−141,000	7,546,000
Reduction in watershed management research due to closure of one project	3,151,000	−21,000	3,130,000
Reduction in range management research due to closure of one project in Southwest	1,240,000	−50,000	1,190,000
Reduction for nonrecurring forest research construction projects	4,001,000	−2,683,000	1,318,000
All other	9,769,000		9,769,000
Total, forest research	34,285,000	−1,731,000	32,554,000
State and private forestry cooperation:			
For cooperation in forest management and processing to provide technical assistance to additional small private forest owners, loggers, sawmill and processing plant operators	3,027,000	+500,000	3,527,000
All other	13,986,000		13,986,000
Total, State and private forestry cooperation	17,013,000	+500,000	17,513,000
Total, forest protection and utilization	204,797,000	+7,648,000	212,445,000

Project statement

Project	1964	1965 (estimated)	Increase (+) and decrease (−)	1966 (estimated)
FOREST LAND MANAGEMENT				
National forest protection and management:				
1. Timber resource management:				
(a) Sales administration and management	$28,611,018	$30,097,000	+$165,000	$30,262,000
(b) Reforestation and stand improvement	14,587,233	16,876,000	+615,000	17,491,000
2. Recreation-public use	24,959,256	25,410,000	+2,100,000	27,510,000
3. Wildlife habitat management	3,130,458	3,808,000		3,808,000
4. Range resource management:				
(a) Management	5,207,985	5,254,000		5,254,000
(b) Revegetation	2,560,620	2,780,000		2,780,000
(c) Improvements	3,174,098	3,339,000		3,339,000
5. Soil and water management	4,342,057	5,146,000	+1,000,000	6,146,000
6. Mineral claims leases, and special uses	3,782,594	3,904,000		3,904,000
7. Land classification, adjustments, and surveys	4,170,372	4,012,000	[2] +500,000	4,512,000
8. Forest fire protection	20,880,637	23,564,000		23,564,000
9. Structural improvements for fire and general purposes (construction and maintenance)	[1] 13,099,406	11,052,000		11,052,000
10. Payments to employees' compensation fund	519,655	615,000	+54,000	669,000
Subtotal	129,025,389	135,857,000	+4,434,000	140,291,000
Amount advanced from "Cooperative range improvements"	−700,000	−700,000		−700,000
Subtotal, national forest protection and management	128,325,389	135,157,000	+4,434,000	139,591,000
11. Water resource development related activities	1,700,000	1,887,000	+2,645,000	4,532,000
12. Fighting forest fires	17,416,958	5,000,000		5,000,000
13. Insect and disease control:				
(a) White pine blister rust control	3,417,167	[3] 3,640,000		[3] 3,640,000
(b) Other pest control	6,855,148	[4] 7,135,000	+1,800,000	[4] 8,935,000
Subtotal, insect and disease control	[3] 10,272,315	10,775,000	+1,800,000	12,575,000
14. Acquisition of lands (Weeks Act)	960,780	680,000		680,000
Total, forest land management	[1] 158,675,442	153,499,000	+8,879,000	162,378,000
FOREST RESEARCH				
Forest and range management research:				
15. Timber management research	6,540,517	7,687,000	−141,000	7,546,000
16. Watershed management research	2,654,275	3,151,000	−21,000	3,130,000
17. Range management research	1,114,587	1,240,000	−50,000	1,190,000
18. Wildlife habitat research	605,038	691,000		691,000
19. Forest recreation research	409,551	432,000		432,000
Subtotal, forest and range management research	11,323,968	13,201,000	−212,000	12,989,000
Forest protection research:				
20. Forest fire research	1,754,559	1,897,000	+350,000	2,247,000
21. Forest insect research	2,036,533	3,735,000		3,735,000
22. Forest disease research	1,702,947	2,043,000		2,043,000
Subtotal, forest protection research	5,494,039	7,675,000	+350,000	8,025,000
Forest products and engineering research:				
23. Forest products utilization research	4,887,694	5,401,000	+489,000	5,890,000
24. Forest engineering research	262,359	409,000		409,000
Subtotal, Forest products and engineering research	5,150,053	5,810,000	+489,000	6,299,000
Forest resource economics research:				
25. Forest survey	1,602,086	1,903,000		1,903,000
26. Forest products marketing research	829,258	1,139,000	+325,000	1,464,000
27. Forest economics research	564,714	556,000		556,000
Subtotal, Forest resource economics research	2,996,058	3,598,000	+325,000	3,923,000
28. Forest research construction	717,558	4,001,000	−2,683,000	1,318,000
Total, forest research	25,681,676	34,285,000	−1,731,000	32,554,000

Project	1964	1965 (estimated)	Increase (+) and decrease (−)	1966 (estimated)
STATE AND PRIVATE FORESTRY COOPERATION				
29. Cooperation in forest fire control	$12,464,509	$12,783,000	----------	$12,783,000
30. Cooperation in forest tree planting	297,515	300,000	----------	300,000
31. Cooperation in forest management and processing	2,508,140	3,027,000	+$500,000	3,527,000
32. General forestry assistance	585,812	903,000	----------	903,000
Total, State and private forestry cooperation	15,855,976	17,013,000	+500,000	17,513,000
Total, forest protection and utilization	[1] [2] 200,213,094	204,797,000	+7,648,000	212,445,000
Unobligated balance lapsing	1,833,024	----------	----------	----------
Total increased pay costs (Public Law 88-426)	(----------)	(5,078,000)	(+260,000)	(5,338,000)
Total available or estimate	202,046,118	204,797,000	+7,648,000	212,445,000

[1] Includes $650,000 provided by Deficiency Appropriation Act, Public Law 88-317, approved June 9, 1964, for: recreation-public use, $100,000; structural improvements for fire and general purposes, $550,000. These amounts will be obligated in fiscal year 1965.

[2] To be allocated to the Department of the Interior.

[3] Includes allocation to the Department of the Interior: 1965, $352,000; 1966, $346,000.

[4] Includes allocation to the Department of the Interior: 1965, $919,000; 1966, $730,000.

[5] Excludes obligations of $1,672,261, incurred in 1964 against funds provided by supplemental appropriation, Public Law 88-25, approved May 17, 1963. Summary follows:

Obligations, fiscal year 1963	$1,284,336
Obligations, fiscal year 1964	1,672,261
Unobligated balance lapsing	43,403
Total appropriated	3,000,000

[6] Represents obligations as follows:

Obligated, fiscal year 1964 (excluding $414,373 comparative transfer)	$199,563,094
Estimated obligations, fiscal year 1965, per (1) above	650,000

JUSTIFICATION OF 1966 ESTIMATES

(1) TIMBER RESOURCE MANAGEMENT

(a) Sales administration and management, $30,262,000

A program increase of $165,000 is proposed for fiscal year 1966. This will permit the harvest of an estimated 11.4 billion board feet of national forest timber, an increase of 200 million board feet over fiscal year 1965. The volume planned for sale is 12.0 billion board feet.

An increasingly larger proportion of the total industrial roundwood produced in the United States comes from the national forests. If the present trend continues, national forests will be supplying nearly one-fourth of the total industrial roundwood produced in the United States and nearly one-third of the total sawtimber production in fiscal year 1966, compared to about 20 percent and 28 percent, respectively, in 1963. The national forests are capable of meeting these needs in accordance with sound forest management principles and within sustained-yield capacity.

The Forest Service goal is to provide for these increasing needs by offering timber for sale at the full allowable cut rates wherever practicable. This goal must be achieved to keep mills going, provide employment, and contribute substantially to the general economy.

In response to strong demands from timber purchasers and the forest products trade associations, work has been underway with an industry committee on a complete reorganization of the contract terms for the sale of national forest timber. This project was started in November 1963. It is now approaching completion. The new contract form and procedures are scheduled to be put into use at the beginning of fiscal year 1966.

A complete review and revision of contractual relationships and procedures of contract administration have been made. Timber purchasers insist that many difficulties have developed because of the contractual relationships established by the present Forest Service contract form. Necessarily a contract which permits a purchaser, in using his right to cut standing timber, to build roads, to fell trees and to drag them from the stump to a roadside loading point, must contain detailed performance specifications and safeguards to insure protection

of residual timberstands and other national forest uses and values and to provide for forest regeneration and erosion control. The system used in the present contract is to require performance by timber purchasers as directed by the Forest Service. With the cost-price squeeze which most timber purchasers are experiencing, this subjective system is now highly objectionable to the forest products industry.

The new contract provides for objective standards of performance of the logging process and the observance of precautions against unnecessary disturbance of vegetation, soil, and water, and the installation of corrective measures. Timber sale administration under this form of contracttual relationship requires many more estimates of work quantities to be done in connection with these required procedures and much more careful observation and supervision to obtain performance to the established objective standards as compared to present procedures with purchasers obligated, within broad guidelines, to perform to the satisfaction of the Forest Service.

The new contract form also provides for amortization of the roads a purchaser must build for timber removal through a system under which payment rates for timber are those appropriate as if such roads were in place. The estimated cost of the roads the purchaser builds is considered the equivalent of a payment for stumpage. There are material advantages in this new method both to the Government and the timber purchaser. Administration of this procedure will require closer inspection of road construction progress, including monthly estimates of work completed, than has been needed under present contract procedures.

There is a major task in training and indoctrination of the Forest Service timber sale personnel in the use of and procedures under the new contract. The requested program increase will be used to cover part of the costs of the additional training needed to implement the new contract. These additional costs have been included in the following estimates for the total program for fiscal year 1966:

Sale preparation 12 billion board feet at $0.69 per thousand	$8,300,000
Sale administration 11.4 billion board feet at $1.77 per thousand	20,160,000
Advance sale preparation 1.5 billion board feet at $0.20 per thousand	300,000
Timber inventories and management plans	1,502,000
Total	30,262,000

(*b*) *Reforestation and stand improvement, $17,491,000*

An increase of $615,000 would be used to make needed progress on reforesting nonstocked timberland by tree planting on the national forests.

There were approximately 4.4 million acres of nonstocked and poorly stocked timberland in the national forests as of 1962. It was determined at that time from projection of timber growth and timber use that 3.8 million acres of this land should be reforested and timber stand improvement should be completed on 10 million acres of young growth by 1972. This rate of accomplishment is needed on the national forests to help maintain continued production of the country's total annual requirements for industrial wood. The level of timber harvesting on the national forests and the maintenance of thrifty growth in forest stands are dependent on timely reforestation and timber stand improvement operations. Genetically improved tree seed also contributes to increased timber growth and better timber quality.

Accomplishments, completed and scheduled for the period 1963–66, are considerably short of meeting the above stated 10-year objectives. The $615,000 increase for 1966 provides for an increase of 10,000 acres of tree planting. This is offset by a 10,000-acre decrease in seeding to result in no increase in the total area of reforestation. The entire appropriation increase will be used for the higher cost tree planting program to utilize trees in nurseries that otherwise would have to be destroyed. Trees for the 1966 planting program were started in nurseries 2 and 3 years ago in anticipation of an expanding reforestation program. Areas requiring planting cannot be successfully reforested by seeding; therefore, seeding and planting programs must be planned separately. Continued progress at the 1965 level of accomplishment will require 30 more years to complete the planned 10-year program.

Summary of total program proposed for fiscal year 1966

Reforest 151,000 acres of potentially productive commercial forest land including cost of seed and trees, site preparation, and other requisite operations	$11,120,000
Developed and improve tree nurseries at 10 locations and seed orchards and tree production areas at 240 locations	1,400,000
Release and weed, thin or otherwise improve conditions for future timber growth on 200,000 acres of young timber stands	4,971,000
Total	17,491,000

(2) RECREATION-PUBLIC USE, $27,510,000

An increase of $2,100,000 for recreation-public use would be used to provide improved operation, sanitation, cleanup, and maintenance of recreation facilities; to develop new sites to alleviate some of the overcrowding; to provide necessary visitor information services; and to install a system of user charges as required by the Land and Water Conservation Fund Act.

The national forests provide ever-increasing opportunities for outdoor recreation. Their use for this purpose has increased from 35 million in 1953, to 122.5 million in 1963 (over 300 percent), to 135 million visits in calendar year 1964 and to nearly 200 million visits by 1972.

As of June 30, 1962, overuse of developed national forest campground and picnic facilities amounted to 70 percent beyond their capacity. With several thousand new family units constructed during fiscal year 1963 and 1964, a total of 75,400 family camp and picnic units having a safe capacity of 31 million visitor-days camp and picnic use were in place in the national forests as of June 30, 1964. However, use is also going up so that with an expected 47.5 million camp and picnic days of use in 1964 the overuse will be 53 percent. Even with the development of 4,820 family units in fiscal year 1965 the overuse will amount to 60 percent because of an expected 5 million camp and picnic visitor-days use in 1965. This overuse accelerates deterioration of facilities, degradation of the site, and reduces the comfort and enjoyment of the public. Strangely, as experience demonstrates, it also leads to vandalism.

To meet this quantity of use 8,000 family camp and picnic units and 4,000 other types of recreation facilities must be available by 1971. At the 1965 appropriation level it would take over 30 years to provide these needed facilities. Failure to build to this level on timely basis will result in critical overuse, disproportionately increased costs for operation and maintenance, creation of major sanitation, stream pollution and user-safety problems, and will jeopardize other forest resources by forcing people into inappropriate locations where they create a fire threat and additional problems.

The importance of providing all national forests with visitor services is reemphasized each year by the increasing use of the forests for recreation by the people of the United States. Visitor information services, by providing information, education, and interpretation to the forest visitor, makes him aware of the many benefits of forest lands and appreciative of the need to protect and use these lands wisely. The expanding population continues to make greater demands on the vital timber, range, wildlife, water, and recreation resources of our public lands. Through the visitor information services program, visitor services ranging from simple nature trails to visitor centers housing exhibits and other interpretive facilities must be expanded to serve this increasing visitor use.

The proposed 1966 recreation budget would provide for the following:

Operation and maintenance.—Adequate sanitation, cleanup, and maintenance would be provided at the estimated 8,400 assorted recreation sites that will have been developed as of June 30, 1965. These tasks are of first priority in recreation administration and must be done daily on many sites. The problems of sanitation and care resulting from an estimated 145 million visits of all kinds in calendar year 1965 cannot be delayed or postponed.

A system of charging users at national forest camp and picnic grounds and associated recreation facilities would be installed. This system would require purchasing and erecting equipment to collect the fees, relocating traffic patterns, providing necessary control to assure payment of required fees, and otherwise implementing the charge requirement of the Land and Water Conservation Fund Act.

Betterment and rehabilitation of old facilities.—By July 1, 1965, most of the rehabilitation of CCC-built facilities will have been accomplished, but the need for betterment work continues. For example, gravity or pumped water systems, and flush toilets are essential to meet modern user loads in many campgrounds and picnic sites. Public health and antipollution measures require improved sanitation and other facilities in organization, winter sports, swimming, and boating sites, and recreation reservoir areas.

Construction of new recreation facilities.—The development of additional facilities is needed to accommodate at least some of the rapidly increasing public recreation demands. The proposed financing would provide for the construction of 5,370 family camp and picnic units, which will accommodate nearly 27,500 persons at one time, and one new recreation site at a cavern.

Recreation management plans.—Recreation management plans completed for each national forest by or before the end of fiscal year 1965 are the basis for recreation area plans which allocate suitable lands to various types of recreation and prescribe specific types of development or classification. More than half of the needed plans should be completed by the end of fiscal year 1965. Through proposed 1966 financing approximately 500 additional plans will be completed by the end of fiscal year 1966 to cover the recreation areas and site complexes needed to satisfy public demands by the year 1972.

Visitor information services.—Development is planned as follows, in addition to operation and maintenance of present facilities:

(*a*) Visitor centers at:

1. Cape Perpetua visitor center, Siuslaw National Forest, Oreg. ($136,000).
2. Blanchard Springs Cave visitor center, Ozark National Forest, Ark., main section ($50,000).

(*b*) Guided and selfguided facilities: Trails, auto tours, and boat tours in and near recreation complexes. A total of 45 units of these types is planned. (Examples are: Tenderfoot Trail, Chugach National Forest, Alaska; Buckeye Trail, Wayne National Forest, Ohio; Nelder Gove Trail, Sierra National Forest, Calif.; and Cherry Run area, Allegheny National Forest, Pa.)

(*c*) Other facilities and services: A total of 29 units of additional vistas, overlooks, wayside exhibits, campsite circles, and interpretive singing are planned for fiscal year 1966. (Examples are: Campfire circle, Sinclair Lake, Oconee National Forest, Ga.; and overlook, Pawnee national grassland unit, Roosevelt National Forest, Colo.)

(3) WILDLIFE HABITAT MANAGEMENT, $3,808,000

No program increase is proposed for fiscal year 1966.

The more than 186 million acres of national forests and national grasslands produce one-third of the Nation's crop of big-game animals and a substantial portion of small game and other forms of wildlife. These forests give rise to more than 80,000 miles of fishing streams, comprising a major part of the cold-water streams of the country. Hunting and fishing on these lands increased by more than 2 million visits in 1963, and the same upward trend is expected to continue.

Productive habitat is the key to wildlife production. Wildlife habitat can be improved by planned coordination with other resources and activities, by direct cultural practices, and through physical improvements. Under the proposed 1966 budget it is estimated that the following wildlife work will be accomplished:

Improving wildlife food and cover	acres	63,000
Providing new water facilities	units	1,000
Installing fish stream improvements	miles	370
Constructing lake improvements	acres	1,500

(4) RANGE RESOURCE MANAGEMENT

(*a*) *Management, $5,254,000*

No program increase is proposed for fiscal year 1966.

Approximately two-thirds of the 186 million acres of Federal land administered as national forests and national grasslands is contained within 11,500 grazing allotments. An increase to 11,600 is expected by the end of fiscal year 1966. Upon these lands graze a total of about 6 million head of sheep and cattle owned

by more than 19,000 ranchers and farmers. Paid permits are issued for 1.3 million cattle and 2.3 million sheep; the remainder of the 6 million livestock is predominantly offspring of the mature animals for which a fee is charged.

Because the national forests and national grasslands provide important supplies of seasonal forage, ranch operations and the economy of local communities have been built around the use of these lands. Grazing on the Federal lands enables Forest Service grazing permittees to make optimum use of an estimated 88 million acres of associated private lands for sustained livestock production. This combined use of public and dependent private lands makes an important contribution to the income and tax base of many local communities. It is estimated that holders of Forest Service paid grazing permits own land, livestock, and buildings valued at $2.1 billion. In 1962, the use of Forest Service lands contributed an estimated $80 million to the gross value of livestock production for these grazing permittees.

Sustained progress is now being made toward full and proper use of the national forests and national grasslands for livestock grazing. Systems of management are being installed using facts obtained from range allotment analysis. The need continues high for assembling up to date basic facts about all grazing allotments through range analysis.

The 1966 budget request provides for completion of 688 units of range allotment analysis work. This accomplishment would bring the current analysis task to about 72 percent of completion. Periodic reevaluation of range condition and its trend and other analysis determinations needed as an integral part of multiple-use management would be a part of the 1966 work on a portion of the 11,600 grazing allotments.

(*b*) *Range revegetation, $2,780,000*

No program increase is proposed for fiscal year 1966.

Revegetating and controlling noxious and poisonous plants is needed on 4 million acres of rangeland during fiscal years 1963–72 for substantial progress toward the long-range objective to achieve intensive management on all range allotments. An estimated 782,000 acres will be rehabilitated by fiscal year 1965. Funding at the 1965 level through the remainder of the 10-year period would result in revegetation of approximately 1.7 million additional acres, or a total of 2.5 million acres for the 10-year period.

Administering the forest rangelands so as to best coordinate grazing use with the increased demand for livestock purposes and other uses is calling for continually improving the range resource and the level of management. The lands must be managed to realize their full potential. This requires, among other things, high forage production. Overstocking and other mistakes in management, some of which occurred prior to the establishment of the national forests, resulted in changes in kinds and amounts of plant cover. Overly dense brush stands, invasions of poor forage plants and bare areas have occurred. These lands are being restored to good forage production and watershed condition by proper rehabilitation treatment. Methods used to rehabilitate rangeland include plant control through application of herbicides or mechanical means, ground preparation and seeding, controlled burning, water spreading, and controlling rodents and noxious farm weeds.

(*c*) *Range improvements, $3,339,000*

No program increase is proposed for fiscal year 1966.

Range improvement programs are being put into effect after careful study of each forest range. Range allotment analysis currently being made includes information on the location of fences and water developments that are necessary to achieve intensive management on all range allotments. In addition, the existing 50,000 miles of fence and 28,200 water developments must be brought into serviceable condition and properly maintained. These necessary facilities cannot be adequately maintained each year, even with present $1 million annual contributions from range users.

Range improvements are necessary to get the kind of range use that is needed and is compatible with other resources and uses. For example, livestock normally prefer certain portions of the range and will often overgraze these areas unless something is done to distribute the animals more evenly. Properly located fences and watering places are primary means of controlling livestock so that damage does not occur to the soil and vegetation, and thus depreciate watershed, wildlife, and other values.

(5) SOIL AND WATER MANAGEMENT, $6,146,000

An increase of $1 million is needed for the program activities which aim to improve the quality and timing of water yields from national forest watersheds; to increase the usable quantity of water yield; to reduce flood threat; and to diminish damage to national forest watersheds resulting from such surface-disturbing activities as road construction, timber harvest, mining, and recreation development. The water yield from the national forests and national grasslands is a basic requirement of a sustained or improved economy, particularly in the rural areas of the Nation. In the 11 Western States these watersheds yield about 53 percent of total runoff. This water is a direct source of supply for more than 1,000 communities and for a major segment of the agricultural, recreational, and industrial water needs.

The increase would be used to conduct hydrologic surveys and prepare plans of management on 60 selected watesheds where available water supplies are fully utilized and further economic growth of the locality is dependent upon increased water supplies which can be made available by improved watershed management techniques. These surveys and plans will establish technical criteria and standards of soil management and watershed protection to be used as guides in carrying out the multiple use objectives for which the national forest and national grasslands are managed. On the basis of these plans the annual amount of usable water yield will be increased, with particular emphasis on low flow augmentation, and improved water quality. It is proposed to initiate treatment programs on five watersheds. Technical watershed protection specifications will be prepared for an estimated 800 surface-disturbing activities which could seriously disturb the soil mantle. This will prevent serious damage to the watershed and to the quality of the water yielded.

(6) MINERAL CLAIMS, LEASES, AND SPECIAL USES, $3,904,000

No program increase is proposed for fiscal year 1966.

This program provides for supervision, administration, regulation, and control of the special land uses and mineral disposal on national forest lands.

The work involves mineral examination of mining claims included in patent applications and occupancy trespass action, determination of surface rights under Public Law 84–167, mineral leasing, mineral reservation and outstanding rights administration, and special uses (other than recreation). Occupancy and use of national forest land for development and disposal of minerals is necessary and desirable as a part of sound multiple use management. However, strict and adequate control of occupany and mineral operations is necessary to protect forest resources from damage and to assure the highest use of the land consistent with good management of all other resources.

Mineral examination of applications for patents for mining claims must be kept current. The detection and elimination of unauthorized use of mining claims which constitutes trespass and interferes with the orderly administration of the national forests is an important activity and must be aggressively handled. Approximately 9,000 cases of occupancy occurring on mining claims should be reviewed within the next 7 years to determine whether the use being made of the claim is authorized under the mining laws. These occupancies include all types of residential use (permanent, seasonal, and transient) where a cabin or similar structure exists on a mining claim. Failure to aggressively pursue such cases further complicates the problem, as it encourages disregard of the mining laws. The Church-Johnson Act (Public Law 87–851) for the relief of mining claimants has also increased the mineral examination and occupancy activity on mining claims.

There are close to 17,500 active mineral permits and leases in force, covering several million acres of land. Rentals and royalties are in excess of $16 million per year. The work must be kept current to protect the public's interest. Between 7,000 and 7,300 mineral applications must be reviewed comprehensively and procesed annually. The volume of mineral leases has steadily increased from 5,200 in 1951 to an estimated 17,500 in 1966. In addition, some 140 mineral reservations are being actively operated, covering 98,000 acres on which the owner retained the mineral rights when the land was purchased by the Government. The public values in the surface of the land must be fully protected

Recently developed electric-generating plants using coal along with new methods of mining have caused a big increase in coal-mining operations. New methods of processing and upgrading of iron ore and taconite will make economic

the removal of many low-grade deposits. These factors have caused a stepup in leasing and in the mining of privately owned minerals under lands acquired by the Forest Service. Much of this activity is in areas now experiencing economic depressions where underground coal and iron mining have steadily declined with a resulting decrease in employment. Development of the mineral resource is important in providing livelihood and bringing about an expanded economy in these areas.

Advanced technology and modernization of mining machinery now permits mineral exploration and development on many areas and for many deposits not formerly considered operable. An estimated 300,000 acres of national forest and national grassland in the Idaho-Utah-Wyoming area are underlain with phosphate. Geologic faulting makes surface mining the only practicable method to remove many of these deposits. An estimated 25,000 to 40,000 acres may be involved.

Adequate control must be maintained over exploration and development under mineral lease and necessary guidance and assistance given operators under mineral reservations and outstanding rights to protect the other forest resources, such as water, recreation, and timber; to provide for their effective utilization; and to restore mined lands to productivity for surface management, resource development, and use.

Special use permits (other than recreation) for the use of national forest lands have increased. There are approximately 37,100 permits and easements covering 4,700,000 acres of land and 56,000 miles of rights-of-way. These permits must be properly supervised and failure to administer them could result in serious damage to the national forests and a direct monetary loss to the Government.

Competition for television, radioelectronic and similar uses for sites continues to increase. These uses require mountain peaks for advantageous coverage and many of these sites occur in the national forests.

(7) LAND CLASSIFICATION, ADJUSTMENTS, AND SURVEYS, $4,512,000

An increase of $500,000 would be used to increase the verification recovery, and monumentation of property corners through cadastral surveys by the Bureau of Land Management. This increase would be allocated to the Bureau of Land Management to carry out this work on problem areas related to the national forests.

Other aspects of the program are concerned with the study and classification of lands as to their suitability for inclusion or exclusion from the national forests, national grasslands, and other land areas administered by the Forest Service; adjustment of landownership in these areas through exchange, donation, purchase, and transfer; establishment of property lines; maintenance of accurate ownership and status records for all lands administered by the Forest Service and the reproduction of essential administrative maps. These functions are basic to the Forest Service land management program. Ownership patterns are a first consideration in planning and installing improvements and land treatment measures and in carrying out protection work.

Landline location.—This program was started in 1958 to locate and perpetuate the 1,132,353 property corners and 281,168 miles of property lines for lands administered by the Forest Service. The program was needed to prevent loss of corners costly to relocate by cadastral surveys, to provide accurate location of property lines in connection with the phenomenal increase in multiple uses, and to cooperate with adjoining owners in timely landline work of common benefit. Prior to this there was no provision for maintenance of corners and lines by the United States. The accumulated results of deterioration since the original monumentation become more pronounced with each passing year.

Since 1958, search has been made for 84,386 corners and 31,903 have been monumented or remonumented. Also, 5,294 miles of property line were marked to full standard and 20,072 miles to less than full standard. Each year since the program was started we are finding a lower percentage of corners with acceptable evidence of such corners. At current level of financing, it will take at least 40 years to complete this program.

During calendar year 1963 the following was accomplished:

Field search for property corners	20,918
Corners monumented with metal pipe and caps	9,912
Property lines marked and posted to standard	[1] 764
Property lines marked and posted to partial standard	[1] 1,431

[1] Miles.

It is estimated that during calendar year 1964 field search will be made for 21,000 corners and 10,000 corners will be monumented or remonumented.

It is estimated that 10,000 property corners are being lost annually due to the ravages of time and lack of maintenance. At current costs, it is estimated that cadastral surveys to relocate these corners would cost $1,000 per corner; annual loss, $10 million.

An increase of $500,000 appropriation to the Bureau of Land Management to carry out its official duties in corner verification, recovery, and monumentation will reduce this loss an estimated 30 percent or $2,400,000.

There are other frustrating losses to the United States that will be heavily reduced by the $500,000 increase.

These are occurring mainly in timber and occupancy trespass. They occur where the property lines were either never located, or are so obscure that work by BLM is required to prevent trespass and to establish an adequate basis for court action to recover damages and abate trespass. The Forest Service does not have a complete inventory of such trespasses which cannot be established before completion of the search for 554,000 property corners for which BLM has responsibility. Search by the Forest Service thus far indicates that significant timber trespass may have occurred in some locations. Collection from larger owners can be made if timber volumes can be established. However, current experience is that by the time BLM surveys are made, the cutting is so old that timber volumes and values cannot be established to the satisfaction of the court, or the trespasser is unknown or without assets. It is estimated that annual losses are from $1 to $5 million—mainly in California, Oregon, Washington, Idaho, and Montana. This loss can be reduced at least 50 percent by the proposed increase in appropriation. Frustrations in day-to-day administration of lands of the United States where their location is uncertain are very real, although hard to measure in dollars. The most efficient and timely development of resources cannot be planned. Confidence in public administrators is impaired. Adjoining owners question the neighborliness of the United States as a land-managing neighbor.

Work proposed for fiscal year 1966:

Field search for property corners	22,000
Corners monumented or remonumented	[1] 10,200
Identify, survey, and post landlines (miles)	1,350
Maintain landines (miles)	2,500

[1] 8,500 of these corners are on land reserved from the public domain where it is the function and responsibility of the Bureau of Land Management to do the actual monumenting.

Land exchange and ownership adjustments.—There is a continuing need for the Forest Service to trade lands with private owners to consolidate the land it administers. Such trades, properly carried out, benefit both the Government and the private owner. They promote greater efficiency in national forest administration. Land exchange proposals by private owners currently exceed the volume of such work that the Forest Service can handle.

The scattered pattern of national forest ownership that exists in many areas is a major problem in multiple-use resource management. Purchase of key intermingled private tracts facilitates management but the only practical means of obtaining better consolidation in many areas is by land exchange. The objective for the current 10-year period (1963–72) is to exchange 1.5 million acres of national forest lands for key private tracts which are better suited to national forest purposes and contribute to ownership consolidation. This requires examination and appraisal of 350,000 to 400,000 acres of land each year because this work must be done for lands both given and received in exchange.

Following is the work planned with the 1966 budget as proposed:

	Acres
Examine lands for exchange (130,000 acres offered; 120,000 acres selected)	250,000
Complete land exchange appraisals (85,000 acres offered; 65,000 acres selected)	150,000

Efforts to increase the land exchange program accomplishments are beginning to show significant results. A total of 124 cases were approved in fiscal year 1964, an increase of 49 percent over fiscal year 1963. In these exchanges the United States will grant 124,800 acres of land and timber valued at $12,757,394, and will receive 120,108 acres of land and timber valued at $13,905,556. The approved exchanges include a number of complex transactions often involving values in excess of a million dollars and requiring high technical competence in the appraisal job.

Land status records.—Unit managers on all the approximately 1,100 field units of the Forest Service need currently accurate status records showing all ownerships (fee, reservations, outstanding rights, encumbrances, etc.) and use restrictions. Old status records are neither complete nor accurate. Good status records are required to administer the property ownerships of the United States in neighborly harmony with adjoining owners and to fully protect the interests of the United States.

Work on a revised system was started in 1962. All actions affecting ownership status will be ascertained. A central unit in each of the 10 Forest Service regions will produce, keep current, and furnish the status records to all field units in the region. About 10 percent of the revised system has been completed. At the present rate of progress it will require over 20 years to complete this job.

Some 17,000 townships (or equivalent area units) in the national forest system are involved. Work thus far is revealing about two serious omissions or errors per township, and many lesser, but significant errors.

Land classification: A continuing analysis of the exterior boundaries and interior landownership patterns of the national forest system is conducted to promote effective national land conservation and development programs. Studies are conducted to determine and recommend changes in landownership or jurisdiction that would enhance opportunities for public programs to provide outdoor recreation, wildlife habitat, timber products, livestock forage, and protection of water resources. Analyses include consideration of potential purchase areas, land transfers (legislative and administrative) or exchanges. Careful consideration is given to changing patterns in land use, especially on private lands, public need for the resources and uses national forests offer, opportunities for improving the efficiency of public land administration, and the probable effects on local economies.

Joint study with the National Park Service, Department of the Interior, is being made of the Sawtooth Mountain area in Idaho for purposes of recommending administration and management that will be in the best interests of the public. The study area approximates 570,000 acres and includes parts of three national forests. Field analyses include the assembling of basic information to assist in ascertaining optimum use and development of the area, whether more restrictive dedications to recreational use are warranted, and the feasibilities, costs, and economic impacts of a desirable managment program under respective alternative agency jurisdictions of the land. The Bureau of Outdoor Recreation is cooperating in some aspects of the study.

Cooperative studies are continuing with the Bureau of Land Management, Department of the Interior, relative to opportunities for more efficient management of lands through specific transfers of jurisdiction in the Western States, with special emphasis on enclaves of unreserved public domain inside national forest boundaries.

Agreement on policies for administration of recreation and other resources at Department of the Army water resource projects affecting national forests, and for related transfers of land jurisdiction, was signed by the Secretary of the Army and Secretary of Agriculture. This agreement will promote resolution of land and resource jurisdiction questions at over 20 existing or authorized water resource projects and numerous others being planned.

As a followup on recommendations of the Bureau of Outdoor Recreation, concurred in by the President's Recreation Advisory Council, arrangements for Forest Service administration of recreation resources at Allegheny Reservoir in

Pennsylvania and subsequent transfer of lands were completed. It is proposed to extend the national forest boundary to encompass all of the reservoir-related lands.

Analysis of the extent, urgency for acquiring, and relative availabilities of private lands located in classified wilderness areas was made in the interest of directing attention to the problem and pointing up acquisition programs. Similar planning for other implementation of the land and water conservation fund is in progress.

Joint studies are continuing relevant to establishment of national recreation areas which include national forest lands in California, Utah, Virginia, and West Virginia. These involve selection of jurisdictional boundaries, suitability of lands, and related programing for acquisition and development of lands having important recreational values.

Mapping.—Adequate maps are essential for multiple-use planning and for the special recordation of resource information. Accurate contour maps are of great value in planning transportation systems and planning timber sales. At present contour maps adequate for these uses are only available on 38 percent of the approximately 617,000 square miles in the national forest system. It is necessary that the Forest Service maintain a mapping program to meet Forest Service priorities for use.

The funds requested for fiscal year 1966 would be used to procure mapping aerial photography, establish horizontal and vertical control, produce map manuscripts, and make field check of map manuscripts for an equivalent 3,800 square miles of contour maps; an equivalent 15,000 square miles of planimetric maps; and compile map manuscripts for photolithographic reproduction of 15 forest maps to a scale of one-half inch equals 1 mile.

Fiscal year 1965 estimated accomplishments are 1,946 square miles contour maps completed and an additional work equivalency of 1,900 square miles; 5,000 square miles planimetric mapping completed and more than half completed on an additional 10,000 acres; produce 15 national forest maps.

Reliable planimetric maps meeting the requirements for accelerated management activities are now available for about 52 percent of total requirements for administering the national forests and grasslands. Topographic maps are available for approximately 38 percent of the required coverage.

(8) FOREST FIRE PROTECTION, $23,564,000

No program increase is proposed for fiscal year 1966.

Forest fires damage and destroy the resources of the national forests as well as threaten the personal safety of firefighters and forest users. Resources losses have averaged more than $22 million during the past 5 years in Forest Service protection areas. In these 5 years 67 firefighters have lost their lives fighting these same fires. In addition to the loss of resources and human life, firefighting costs have averaged more than $27 million annually during the same period. Acceptable fire protection can be accomplished if fire hazards are removed, man-caused fires reduced, and fires that start are promptly detected and rapidly and aggressively attacked. The risk of man-caused fires grows each year as the use of the national forests increases. Fire protection must be correspondingly strengthened to meet this impact.

For fires that do start, rapid and sufficient initial attack can control such fires with a minimum of cost and resource loss. The long-term objective is to hold fire losses below the level which will seriously interfere with the needed productivity and usefulness of the national forests and grasslands.

Fire control is a highly technical and scientific job. Continuing research and development provide numerous technical changes. These changes, together with improved direction and leadership, must be aggressively applied for successful fire control. Periodic reappraisal of the fire control program is a necessary and regular part of Forest Service management. This appraisal aims to study in depth the needs and application of fire control, using current data, research, new techniques, and equipment. It evaluates present nationwide forest values and established performance requirements and standards commensurate with resource needs and management objectives. Such an appraisal is underway in all units.

The proposed 1966 budget would provide for the following estimated protection measures:

Fire prevention	$3,430,000
Fire detection	3,260,000
Fire attack forces	13,340,000
Air operations	2,130,000
Fuel modification	300,000
Equipment development	600,000
Studies, surveys, plans, and special training	504,000
Total	23,564,000

(9) STRUCTURAL IMPROVEMENTS FOR FIRE AND GENERAL PURPOSES, $11,052,000

No program increase is proposed for fiscal year 1966.

Many ranger district headquarters and field projects are located in remote areas or small communities where adequate housing is not available. Unless adequate housing is provided, it is not possible to headquarter needed personnel at these work locations. Program costs are increased excessively and the job of managing the lands and serving the public would suffer severely. There is also an urgent need for additional fire control structures such as aerial bases, service buildings, and offices in outlying locations.

Adequate communications facilities are essential for national forest protection and administration. Obsolete telephone systems are being converted to radio networks. Inadequate radio systems are being improved to meet communications needs.

Landing fields, helispots, and heliports are highly essential to the effectiveness of the fire control program and multiple use management of the national forests in making the best use of aerial operations and air equipment. They greatly facilitate rapid initial attack on forest fires, thereby increasing the chance for early control at small size which would result in a reduction of both suppression costs and resource losses. Construction and reconstruction of airport facilities, such as airports, airfields, heliports, and helispots are urgently needed.

The following facilities would be constructed in fiscal year 1966:

Dwellings and barracks (65)	$1,150,000
Fire lookouts (20)	200,000
Service and storage buildings (90)	1,792,000
Airstrips and helispots (170)	300,000
Betterment of existing structures, site improvements, landscaping, and other miscellaneous construction	600,000
Water supply and sewer systems	500,000
Site acquisition	100,000
Communication facilities	1,050,000
Major structures:	
Arcadia Equipment Development Center, California	130,000
Redmond Airbase, Oreg	100,000
West Yellowstone Airbase, Mont. (Forest Service share for a fire control air attack base which will be built and used jointly with the Park Service of the Department of the Interior)	130,000

CONSTRUCTION AND MAINTENANCE OF STRUCTURAL IMPROVEMENTS

Construction funds were used to provide new buildings and facilities to meet the most urgent needs of the expanding national forest programs. Emphasis continues on construction of dwellings and barracks to provide housing and crew quarters at locations where private rentals are not available to meet the needs. Field headquarters offices are being provided and obsolete offices replaced to provide adequate working space. Construction of service buildings such as warehouses, shops, and storage buildings at ranger stations has proceeded to fill the most urgent program needs. In addition to financing available from regular Forest Service appropriations, accelerated public works funds were used for construction and maintenance of structural improvements.

Following is a summary of the major fiscal year 1964 accomplishments (including all funds):

	Number of units	
	Construction	Betterment
Dwellings and barracks	195	120
Fire lookouts	55	31
Service and storage buildings	347	176
Airfields, heliports, and helispots	1,004	61

The rate of progress is less than is needed to provide adequate facilities in a timely manner. There are 521 ranger districts needing additional housing for 2,405 employees presently working but living in unsatisfactory private housing or with long commutes. At the rate of construction from fiscal year 1963 to 1965, it would take 24 years to construct housing to meet present needs and expected expansion to 1972. Similar needs exist in service and storage buildings and fire lookouts.

Approximately 36 percent of the 1964 construction was done with national forest protection and management funds, 60 percent from accelerated public works, and 4 percent from other appropriations.

High-priority maintenance was accomplished on existing general administrative improvements, consisting of 1,870 fire lookouts, 5,800 dwellings, barracks, and cabins, 700 offices, 6,800 service buildings and related utility systems, and airports.

The communication network was improved by addition of radiophones. Maintenance was provided for 19,500 radiophones and approximately 15,000 miles of telephone line.

It is planned to construct the following facilities in fiscal year 1965 with these funds:

Dwellings and barracks	51
Fire lookouts	21
Service and storage buildings	72
Airfields, heliports, and helispots	421

(10) PAYMENTS TO EMPLOYEES' COMPENSATION FUND, $669,000

An increase of $54,000 for Bureau of Employees' Compensation is required to reimburse the employee's compensation fund, Department of Labor, in accordance with Public Law 86-767 (5 U.S.C. 785), which was enacted September 13, 1960, for benefit payments made from that fund to employees of the Forest Service who are injured while in the performance of duty. The 1966 payment will be $688,586. The payment for 1965 will be $614,581.

(11) WATER RESOURCES DEVELOPMENT RELATED ACTIVITIES, $4,532,000

An increase of $2,645,000 would be used to meet the most pressing Forest Service costs associated with water resource development projects built by other agencies within the national forest to achieve the administration policy of optimum multipurpose development. These financial obligations are project induced in a time sequence and proportion different from and greatly in excess of that provided for in the development program for the national forests.

Attainment of this objective requires a detailed analysis of the interrelationship between a project proposal and the multiple use property within which it is situated. It requires provision for public access, use and management facilities, sediment reduction and improved water control capability on tributary lands, and similar activities necessary to optimize the purpose of the water and related land resource project.

The work proposed for accomplishment during fiscal year 1966 includes:

1. Comprehensive field analysis and reports of the effect of each proposed water development project on all land-related resources and activities, prescribe the measures needed to maximize project benefits, and furnish liaison with the construction agency on projects under construction. Some of the major proj-

ects are Libby in Montana, Dworshak and High Mountain Sheep in Idaho, Ruedi in Colorado, Maxwell in Arizona, Joes Valley in Utah, Bullards Bar in California, Allegheny in Pennsylvania, Royal Glen in West Virginia, Lauren Shoals in Georgia, Toledo Bend in Texas and Louisiana, and Patoka in Indiana.

2. Provision of public access, use and management facilities on major water resource development projects completed or nearing completion such as Ruedi in Colorado, Mogollon Rim Lakes in Arizona, Flaming Gorge in Utah, Shasta-Trinity in California, Allegheny in Pennsylvania, Sam Rayburn in Texas, and Monroe in Indiana.

3. Improvement of soil and cover condition on lands tributary to selected water resource development projects to reduce sediment and modify water yields to increase the effectiveness of the project installation and prolong its useful life.

Construction liaison expedites the work of the construction agencies, insures proper installation of project facilities, and reduces resource losses and interference with regular protection and management activities of the Forest Service. Among the projects for which construction liaison was furnished in fiscal year 1964 were Allegheny, Packwood, Sam Rayburn, Monroe, Blue River, Upper American River, and Toledo Bend.

Public access, use, and management facilities

Major emphasis was placed on developing public access and use facilities at Flaming Gorge, Allegheny, Shasta, and Trinity Reservoirs during 1964. Some funds were reprogramed to permit initial development of these major reservoirs. Approximately 10 percent of the total Forest Service recreation facility construction expenditure in fiscal year 1964 was at reservoirs.

Even though a substantial share of the national forest recreation facility construction budget was allocated to water resources development projects, this effort financed only a small part of the needed public access and use facilities. Additional facilities are needed at Flaming Gorge, Allegheny, Shasta, Trinity, and Lewiston Reservoirs and many other existing reservoirs do not have facilities to accommodate the public use they are attracting. Several major reservoirs under construction create an additional need for public access and use facilities.

Soil stabilization and cover improvement

Funds available in fiscal year 1964 were insufficient to improve conditions on lands tributary to most water resource development projects and only a nominal amount of such work was done.

Treatment is needed at several projects to reduce sediment production and improve water control capability on tributary lands. This work will prolong the useful life of the water resource developments and improve the quality of water for recreation, fish, and other purposes.

(12) FIGHTING FOREST FIRES, $5 MILLION

No program increase is proopsed for fiscal year 1966.

This program provides for forest firefighting on the national forests and grasslands. It permits employment of emergency forces when weather conditions are severe. The costs for the regular fire protection organization are paid from the national forest protection appropriation. When critical fire conditions occur, it is regular practice to build up temporary forces in the most threatened areas. Long experience shows that material savings are made by having such a strengthened force ready to discover and attack fast-spreading fires. Damage and suppression costs are thus materially reduced over what might be expected from normal crew strength.

The calendar year 1963 fire season.—The southern and eastern regions of the country had drought conditions that resulted in a severe fire season in both the spring and fall. The spring of 1963 in this area was probably the most critical of the past 20 years.

The western fire season in 1963 was late because of favorable weather. Montana, Idaho, and Utah had dry conditions with heavy lightning activity. Early fall rain, especially in southern California, reduced fire danger and the usual fall season did not materialize.

There were 12,740 fires that burned 127,571 acres on the national forests and grasslands in 1963. This was up from the all-time record low year of 1962 when

85,457 acres burned, but it is well under the 5-year (1958–62) average of 227,841 acres.

Man's activities caused 6,269 of these fires. This is a significant increase over 1962, when there were 5,193 man-caused fires. During the 1958–62 period there was an average of 4,789 man-caused fires.

There were only two fatalities connected with firefighting activities in 1963. An air tanker pilot was killed in California and a firefighter was hit by retardant in Montana.

The calendar year 1964 fire season.—The eastern spring fire season was normal or below in most areas. There were 2,100 forest fires through October that burned 25,000 acres. This compares to the 5-year average of 2,257 fires that burned 32,243 acres for the same period. The number of man-caused fires through October in the East was 1,800. This is a substantial reduction from 1963 when 3,244 fires had been started by man through October.

The western fire season, including Alaska, was normal or below through October despite the fact that drought conditions prevailed through parts of Oregon and California. There were 6,700 fires that burned 166,000 acres through October. The 5-year average shows 9,485 fires burned 190,024 acres during the same period.

There were five firefighting fatalities recorded through October 1964. Two air tanker pilots were killed in separate accidents. A helicopter pilot was killed when returning from delivering a firefighter to a fire. One firefighter was fatally burned and another walked into a helicopter rotor.

There was a total of 8,800 fires on the national forests and grasslands that burned 191,000 acres through October. This compares favorably with the 1959–63 5-year average of 11,742 fires that burned 222,267 acres.

(13) INSECT AND DISEASE CONTROL, $12,575,000

An increase of $1,800,000 for control of forest insects and diseases other than white pine blister rust would be used (*a*) to find substitutes for DDT, a persistent chlorinated hydrocarbon pesticide, now widely used against defoliators and the cause of mounting public concern; (*b*) to place less reliance on broad spectrum chemicals and greater reliance on more expensive nonpersistent selective pesticides; and (*c*) to expand monitoring services on aerial spraying projects.

As the use of DDT is phased out, control of defoliating insects with nonpersistent insecticides will be several times more expensive. For example, nonpersistent insecticides currently cost about three times more; application by helicopter for greater accuracy of spray deposit costs about three times more than application by fixed-wing aircraft; monitoring of the environment to determine residues and adverse effects of pesticides will be greatly expanded and will be costly; and the search for and testing of substitutes for the persistent DDT must be sharply expanded and accelerated.

Following are the 1966 objectives for the white pine blister rust control and the other pest control programs:

Disease control:		
(1) White pine blister rust control:		
(*a*) Perform maintenance surveys on	acres	1,940,000
(*b*) Eradicate ribes bushes from	do	220,000
(*c*) Apply antibiotic fungicides to	trees	[1] 17,000,000
(2) Oak wilt control:		
(*a*) Surveys of oak forests to locate infected trees	acres	47,000,000
(*b*) Destroy or treat nfected trees	trees	[1] 5,000
(3) Dwarf-mistletoe control:		
(*a*) Intensive surveys on pine stands to locate infected trees	acres	225,000
(*b*) Control disease on	do	3,000
(4) Other disease surveys	do	128,000
Insect control:		
(1) Bark beetle control—Treat infested trees, cull logs, stumps, and slash	units	[2] 1,400,000
(2) Defoliator control—Aerial application of insecticides on	acres	920,000
(3) Plantation insect control—Aerial or ground treatment on	do	25,000

[1] Trees.
[2] Units.

OBLIGATIONS, INSECT AND DISEASE CONTROL FUNDS (EXCLUSIVE OF WHITE PINE BLISTER RUST CONTROL)

Fiscal year 1964 and estimates for fiscal years 1965 and 1966

Project	1964	1965 (estimated) [1]	1966 (estimated) [1]
Forest insects feeding on or under the bark: [2]			
Northern Rocky Mountain States	$21,101	$40,000	$50,000
Rocky Mountain States	1,442,072	810,000	767,000
Southwestern States	150,567	151,000	90,000
Intermountain States	1,697,106	762,000	700,000
California	399,489	300,000	300,000
Pacific Northwest States	14,650	10,000	20,000
Eastern States	13,031	10,000	10,000
Southern States	739,237	400,000	546,000
Forest insects feeding on cones, seeds, buds, shoots, or foliage: [3]			
Northern Rocky Mountain States	295,672	410,000	1,000,000
Rocky Mountain States		5,000	200,000
Southwestern States	6,495	50,000	347,000
Intermountain States	485,505	420,000	1,114,000
California	8,499	150,000	150,000
Pacific Northwest States	78,240	29,000	140,000
Eastern States	27,699	10,000	10,000
Southern States			10,000
North-Central States	18,762	50,000	50,000
Alaska	5,200		
Forest tree diseases: [4]			
Northern Rocky Mountain States	20,100	40,000	40,000
Rocky Mountain States	12,000	6,000	6,000
Southwestern States	500	11,000	11,000
Intermountain States	10,502	6,000	6,000
California	63,954	100,000	100,000
Pacific Northwest States	62,499	70,000	70,000
Eastern States	107,448	65,000	65,000
Southern States	22,899	43,000	43,000
Alaska	20,100		
Detection and evaluation	981,561	990,000	990,000
Cooperative surveys with States	58,300	240,000	240,000
Methods improvement [5]	60,000	175,000	225,000
Equipment development	40,930	52,000	75,000
Forest Pest Control Act administration	717,060	830,000	830,000
Department of Interior forest insect and disease projects	1,036,231	900,000	730,000
Total available or estimated	[6] 8,527,409	7,135,000	8,935,000

[1] Estimates of project needs are forecast a year or more in advance of anticipated needs and are always subject to fluctuations. Adjustments are made between projects as necessary, depending on discovery of new outbreaks and expanded needs on approved projects.

[2] Includes Black Hills, mountain pine, western pine, southern pine, Engelmann spruce, black turpentine beetles, ips, flatheaded borers, balsam woolly aphid, and scale insects.

[3] Includes spruce budworm, jackpine budworm, Douglas-fir tussock moth, elm spanworm, sawflies, Saratoga spittlebug, European pine shoot moth, white pine reproduction weevil, seed and cone insects.

[4] Includes oak wilt, dwarf-mistletoe, and Fomes annosus root rot.

[5] This item provides for initial implementation of a chemical pesticide screening unit, jointly financed with Forest Pest Control Act and research funds. Work on the unit was started Jan. 2, 1964, and will be further expanded in fiscal years 1965 and 1966. Its purpose is to screen and field test selective nonpersistent chemicals in search of replacements for persistent chemicals currently used in forest insect control.

[6] Includes $1,672,261 of the fiscal year 1963-64 supplemental appropriation.

(14) ACQUISITION OF LANDS (WEEKS ACT), $680,000

No program increase is proposed for fiscal year 1966.

Funds would be used to purchase about 27,500 acres of land. Actionable offers from private landowners anxious to sell their properties far exceed the amount that could be purchased with these funds.

The objective in the present 10-year period (1963–72) is to purchase 967,000 acres of key inholdings of land for national forest purposes. These are lands valuable for watershed and timber production purposes. This estimate of program needs excludes land primarily valuable for recreation purposes.

The highest priority tracts for purchase include key tracts of inholdings which fill in irregular ownership patterns in present national forests and provide more efficient management, protection and administration of water and wildlife resources.

Weeks Act purchases approved in fiscal year 1964 by the National Forest Resservation Commission involved 257 properties containing 26,699 acres in 15 national forests located in 14 States. The approved prices averaged $34.08 per

acre. Included in these acres were 148 tracts needed in special Skyline Scenic Drives in Arkansas, Oklahoma, and Georgia. These latter tracts will, in some instances, require initiation of condemnation actions. Two such actions involving 15 properties were prepared and filed in fiscal year 1964.

Approximately 17,000 acres will be purchased in fiscal year 1965. This includes properties needed for completion of the Skyline Drive project in Arkansas-Oklahoma, Ouachita National Forest. An outstanding property having frontage on the Black River, Clark National Forest, will also be acquired. For these two projects, $80,000 and $100,000 respectively was provided by the Congress.

(15) TIMBER MANAGEMENT RESEARCH, $7,546,000

A decrease of $141,000 is made possible by closing out research projects in hardwood silviculture in New Jersey and Indiana and tree physiology studies in California. This reduction is made to achieve economies in the overall program and to provide for consolidating small isolated projects at locations with a better scientific environment and more adequate research facilities.

Timber management research develops cheaper and more effective methods of establishing, managing, and improving forests for the production of timber and timber-related products. The core of this research is determining the proper culture for over a hundred different commercial timber species in the United States. This silvicultural research includes seed production, seeding, planting, thinning, pruning, and stand regeneration measures. It involves the control of brush and other competing vegetation, and the protection of the new stand from animals. Other phases of the program deal with soil and site improvement for timber production, and the development of improved strains of trees through selection and breeding of superior types.

Timber management research also provides forest managers with information on the yield of forests in terms of various products such as lumber, plywood, poles, piling, and pulpwood, and the influence of cultural practices on the yield and quality of the stand. The program also includes research on methods of producing timber-related forest crops such as gum naval stores, maple sap, Christmas trees, and other income-producing natural products from forests.

This production-oriented research is backstopped by fundamental research on the physiological growth requirements of forest trees, on variation and inheritance in tree characteristics that have economic value, and on new approaches to difficult measurement problems involved in the management of forest properties.

In all of this research the aim is to meet the Nation's need for production of timber and related forest crops. In view of the inroads on forest lands being made by urban expansion, highways, parks, and other developments, these future needs will not be met at reasonable cost unless technological progress in timber management is increased. Better methods must be found to reforest deforested acres, to keep existing forest lands continuously productive, to reduce the cost of growing the crop, and to increase its value for industrial use.

(16) WATERSHED MANAGEMENT RESEARCH, $3,130,000

A decrease of $21,000 will result from closing one project aimed at developing principles for managing municipal watersheds in the mid-Atlantic States. This project will be consolidated in the near future with other research at the new headquarters laboratories of the Northeastern Forest Experiment Station at Radnor, Pa., now being planned. Greater efficiency in support services will result.

Watershed management investigations are aimed at development of methods and techniques for managing forest and related range watersheds to: (*a*) increase water yields or improve the timing of water yields under a variety of climatic, soil, geologic, vegetative, and topographic conditions by changing the pattern, density, or type of forest cover; (*b*) give adequate protection to soil and water resources while forest and related rangelands are being used for timber production, grazing of domestic livestock and big game, wildlife habitat and forest recreation; (*c*) rehabilitate forest and related rangeland watersheds that constitute serious sources of damaging flood runoff and sediments; and (*d*) aid forest soil development and improvement.

Between one-half and three-fourths of the waterflow of the United States originates in forests, associated rangelands, and alpine regions which form the headwaters of all major river systems. Generally accepted estimates of water demand indicate a doubling by 1980, and the most logical place to look for additional sup-

plies of good quality water is in these headwater regions. However, there is ever-increasing demand to use these lands for other products and services, and the manner of their management can make the difference between beneficial, well-regulated, sustained streamflow of good quality or erratic and silt-laden flow of destructive character.

(17) RANGE MANAGEMENT RESEARCH, $1,190,000

A decrease of $50,000 is made possible by discontinuing an aerial range pelletized-seeding research project in the Southwest. Research to date has not shown that aerial seeding of rangelands using pelletized seed is as cheap or effective as other ground seeding methods. This research is of less immediate importance than other high-priority range improvement research yet to be done.

Range management research aims to find the best and most practical means to manage, improve, and maintain the productivity of forests and related lands used for grazing domestic livestock. It encompasses a variety of activities including: (*a*) determination of management systems and grazing intensities for the many different range types and conditions and properly coordinated with other uses, (*b*) development of range improvement measures such as conversion of low-value vegetation to desirable forage plants through prescribed burning, (*c*) determination of characteristics, responses, and requirements of range vegetation and classification of range condition and trend through studies of plant ecology, physiology, and taxonomy, and (*d*) determination of the identity and ecological relations of rodents, insects, and diseases to range vegetation as a basis for indirect and inexpensive control.

Grazing is the largest single use of land in the United States and as such constitutes a substantial portion of our agricultural economy. About half of the total land area of the contiguous 48 States, some 940 million acres, is grazed by domestic livestock, and all of it is important for its wildlife values. These lands furnish forage for about one-half of the beef cattle and three-fourths of the sheep for at least 6 months of the year. A total of 560 million acres is forested or forest-related rangeland. Some 240 million acres of this is in Federal ownership and blankets the headwaters of the major rivers.

Vast areas, particularly in the western mountains, have been damaged by past land use practices to the point where grazing is seriously affecting the quantity and quality of water produced. Moreover, present range forage production is on the average only half or less of potential, and falls far short of meeting the demands for livestock and game grazing. Demands on the forest ranges for all uses are sharply increasing. As a result, difficult problems continuously arise in the conservation and coordination of use of these lands. In the West, these lands pose many problems because of the variables and often droughty climate, highly erodible soils, and vegetation that will not withstand close grazing use. In the South, integration of grazing with timber production poses serious problems, particularly to small woodland owners. Furthermore, use by wildlife on all lands has to be carefully correlated with livestock grazing. Superimposed on top of this, particularly in the West, is the fact that nearly every forest range acre is of importance as watershed, either as a producer of water or as a potential producer of debilitating sediment.

Methods of management must be found to allow the forage to continuously renew itself in keeping with other uses. Also sorely needed are surefooted but less costly methods of range-watershed rehabilitation and sharper criteria and methods for use by the range administrator and rancher in judging trends in range improvement or deterioration. Range research must be planned and carried out so that its results can be coordinated with and add to the findings of other Forest Service research on wildlife, timber production, watershed management, and recreation. The results are needed to harmonize multiple-use management.

(18) WILDLIFE HABITAT RESEARCH, $691,000

No program increase is proposed for fiscal year 1966.

Wildlife habitat research is concerned with the development of management and improvement practices to support optimum populations of game and fish in harmony with production of timber, water, and livestock on forest and related rangelands. Each kind of animal has specific habitat requirements that must be balanced against requirements for production of water, timber, and forage for livestock. As a basis for successful integration of wildlife, livestock, and timber

production, the nature and degree of competition between wildlife and livestock are determined for various types of forest and rangelands, as well as effects of silvicultural and timber harvesting practices on food and cover plants and reciprocal effects of forage production and wildlife grazing on timber reproduction and growth. Research studies the effect of forage utilization and environmental factors on seedling establishment and survival. Special practices are developed for increasing food and cover for both big and small game by seeding, planting, burning, spraying, and fertilizing. Research on fish habitat improvement includes studies of regulating shade and water temperatures through manipulation of streamside vegetation, creation of gravel-spawning beds, and stabilization of channels. The wildlife habitat research program involves active cooperation with Federal (particularly the Fish and Wildlife Service) and State fish and game agencies and educational institutions.

Although habitat conditions on some areas are suitable for supporting high wildlife and fish populations, the capacity of most forest and related rangelands can be greatly increased. Some of the low-producing areas are the result of damage from logging, fire, or overuse by livestock or big game, whereas others are due to the natural development of vegetation that is unproductive for wildlife. In some areas, deterioration of the vegetation cover and accelerated soil erosion have resulted in unfavorable water temperatures, excessive stream siltation, unstable channels, and exposed banks. Consequently, many streams flowing through these lands are below their potential for fish production. In some western mountain streams, dense shade from riparian vegetation maintains water temperatures too cold for trout.

In the West, emphasis is placed on studies concerned with rehabilitation of big-game winter ranges; integration of wildlife and timber production, competition and resolution of conflicts between big game and livestock, and habitat management to improve game distribution and allow efficient utilization of available forage and cover, and manipulating livestock range improvement practices such as sagebrush and juniper control to provide for food and cover plant needs of big and small game. In the South and Southeast, studies include the integration of deer and small game with timber and livestock production. In the Northeast and the Lake States, major emphasis is on studies to improve habitat and reduce wildlife damage to northern hardwood species through modification of silvicultural practices. In the Central States, studies are concerned mainly with small upland game habitat management and revegetation of forest openings with suitable food and cover plants. In the Appalachian States research will include management and habitat improvement for turkey, grouse, and deer. In the Northern Lake States, research will be undertaken on upland game habitat in the northern hardwoods and related swamp types. In the Missouri Ozarks, research will be focused on wildlife habitat evaluation, improvement and management of upland game and integration of wildlife and timber production. On national forests and other public lands research emphasizes how best to improve habitat and at the same time to integrate wildlife use with use of the land for timber and livestock production.

(19) FOREST RECREATION RESEARCH, $432,000

No program increase is proposed for fiscal year 1966.

Forest recreation, once considered a minor use of the forest, has become a major use and has created many problems that cannot be effectively solved without supporting studies that are soundly organized and carried out. In 1940, the national forests received 16 million visits. Last year this number increased to 123 million. Millions more are visiting other public and privately owned forest recreation areas—and the upward trend will continue. This buildup must be fitted into increasing demands for water, timber products, wildlife, forage, and other forest resources. Also, as part of the Department of Agriculture's program to aid farmers, especially in economically depressed rural areas; forest recreation studies are aimed at identifying and evaluating opportunities for income-producing recreation by the small woodland owners.

Forest recreation research is underway at 8 of the 10 regional forest experiment stations. Current studies are pointed toward (*a*) the management of the recreation site—to determine how campgrounds, picnic areas, and other developed areas receiving heavy use may best be planned and managed to prevent damage to soils and vegetation and be maintained without costly rehabilitation of wornout sites; (*b*) to better understand the essential requirements for recrea-

tional habitat and developments of those who use the recreation areas; and (c) to identify and explore the economic opportunities for developing income-producing recreation enterprises on privately owned (often farmer owned) woodlands—with particular emphasis on economically depressed rural areas.

(20) FOREST FIRE RESEARCH, $2,247,000

An increase of $350,000 would be used to more fully utilize the facilities of the forest fire laboratories at Riverside, Calif., Missoula, Mont., and Macon, Ga., which were constructed for the specific purpose of supplying new knowledge fundamental to development of prevention and control techniques that will improve protection of the forests from fire. These laboratories have unique equipment and the preliminary work accomplished with it shows high promise. If now pursued more aggressively, the result will be important new techniques for more efficient forest fire prevention and control. The results of basic laboratory research would be used at field stations in the West to analyze the fire control impact of the changes in forest fuels that result from converting overmature timber to second growth, so that new methods and criteria for planning prevention and control systems can be devised that will meet local needs; in the East to determine the amount and form of fire prevention and control measures required for systematic protection of the forests, to develop new applications of research results to provide that protection and to improve methods of appraising fire damage to hardwoods.

Forest fire research is aimed at the development of new technology needed by State, private, and Federal forest protection agencies throughout the United States. These agencies annually combat some 100,000 forest fires. The annual forest fire control costs are more than $140 million. The fire damages amount to a much larger sum. To meet present-day requirements for the protection of forest resources and for the safeguarding of human lives and property endangered by fires, better methods are urgently needed for fire prevention and control.

Study of forest fire problems throughout the Nation has shown specific research needs and the opportunities to develop new technology. The research already accomplished has led to significant advances in resource protection. The first phase of a new fire danger rating system is assisting forestry agencies throughout the country in fire control planning and management. Fire fighting chemicals are being applied from tank trucks and aircraft. New hazard reduction techniques are reducing the danger of fires in cutover forests, plantations, and recreation areas. Helicopters and fixed-wing aircraft are being used more effectively in fire control operations.

An accelerated and strengthened research program now has a unique opportunity to provide more effective solutions to these critical fire problems. The planned research for fiscal year 1966 includes the following:

(*a*) *Electronic fire detection.*—Development of a system in which patrol aircraft equipped with heat sensing infrared scanners will detect fires either night or day and transmit the precise location of fires to dispatching centers. This system could speed up fire detection and reduce the chances for dangerous fires to have time to develop into costly conflagrations.

(*b*) *Lighting fires.*—Development of radar and electronic system techniques for tracking lightning storms and measuring their fire-setting potential.

(*c*) *Fire behavior.*—With the aid of wind tunnels and combustion chambers now available in the forest fire laboratories development will proceed of methods to determine fire ignition and spread according to variations in wind, humidity, temperature, and forest fuel conditions. The resulting fire behavior knowledge from this type of research can provide fire control agencies with basic guides for improved planning and management.

(*d*) *Firefighting methods.*—Development of new techniques for use of firefighting chemicals and of air and ground fire attack systems to meet specific forest conditions in the various regions of the United States.

(*e*) *Hazard reduction.*—Development of techniques for reducing the fire hazards in various forest types including the controlled use of fire to remove unneeded vegetation, mechanical chipping of residue material, and the reduction of dangerous fuel complexes with fire breaks or replacement with less hazardous plants. The prevention and control of conflagrations in many parts of the country require solution of problems of eliminating massive bodies of fuels which are a threat to valuable forest resources and to human life and property.

(21) FOREST INSECT RESEARCH, $3,735,000

No program increase is proposed for fiscal year 1966.

Research on forest insects is directed toward the prevention and control of destructive insect attack on forests and forest products. Damage by insects enters into all phases of forest management from the seed to the mature forest. The development of effective and economical methods of direct and indirect control is dependent upon thorough knowledge of life histories and habits of forest insects, including the interrelationships between the insects and their environments. Control of forest insects by indirect methods such as the use of native or introduced parasites, predators, and diseases of insects; by silvicultural practices designed to prevent the buildup of insect epidemics; and by radiation and chemosterilization techniques, offers promise and is being given major emphasis in the research program. Investigations on direct control methods involve mechanical and chemical methods, including development of safer chemical insecticides and systemics.

Included among the many insects under investigation are (1) those that kill trees outright, such as the bark bettles which cause heavy losses in the West and South; (2) a wide variety of species that feed on the foliage of trees and either kill them outright or reduce their vigor and growth, such as the spruce budworm and gypsy moth; (3) species that damage or destroy the flowers, seeds, and cones of trees; (4) borers that tunnel into the wood and reduce its value through degrade; (5) borers such as termites that damage or destroy valuable forest products, such as logs, lumber, and pulpwood; and (6) various species that damage or destroy young trees in forest plantations, such as the European pine shoot moth. No part of the country is immune to the ravages of these insects, and no year passes without one or more of them occurring in the form of outbreaks.

During an average year insects kill enough commercial sawtimber to build some 600,000 average-size homes; during periods of outbreak, which occur at frequent but unpredictable intervals, these losses are much more severe, often bordering on the catastrophic. In addition, insects kill a billion cubic feet of timber below sawtimber size and cause a growth loss of three-quarters of a billion cubic feet each year. Forest insect outbreaks also result in increased fire danger and often set the stage for destruction fires which impair valuable watersheds and wildlife habitats. They jeopardize the success of seed orchards and tree-planting programs; they destroy enormous volumes of forest products, such as logs, lumber, and pulpwood; and they reduct the carrying capacities of forest-related ranges for livestock and big game. Insect-caused losses such as these show no signs of decreasing. Instead they seem to be increasing in severity year by year. Public demands for relief from them are becoming increasingly insistent.

The program for fiscal year 1966 will deal with research on the causes of outbreaks of some of the most destructive forest insect pests as a basis for developing safer, cheaper, and longer lasting methods of preventive control. In this program, special emphasis will be placed on studies of biological control factors such as insect parasites, predators, and disease pathogens. Emphasis will likewise be placed on (a) studies of other environmental factors affecting insect populations, such as stand age, condition, and density; (b) on determining factors of tree resistance to insects as a basis for developing resistant strains or hybrids for use in planting programs; and (c) on exploring possibilities of control through the use of chemosterilants, irradiation, and attractants and repellents, and for the development through genetic manipulation of more effective strains of insect parasites and predators. Studies in chemical control will be continued with emphasis on determining modes of action of chemicals on and in both insect pests and their host trees, as a basis for developing (a) safer and more selective materials and formulations and (b) safer and more effective means of application.

(22) FOREST DISEASE RESEARCH, $2,043,000

No program increase is proposed for 1966.

Research on diseases in forests, forest tree nurseries, and on decays and strains of forest products provides the basic information on the causes of diseases and on practicable and effective method of combating them. Included is identification of pathogens and investigations of their life histories; determination of the environmental conditions that result in disease epidemics in forests;

development of direct control by chemical and mechanical methods, and indirect control through silvicultural practices and genetic resistance; and improvement of disease survey techniques. In the products field, research is directed to the determination of methods of handling logs and lumber to prevent fungus infection; of the proper use of naturally durable or treated wood in high-hazard locations; and of improved structural design to reduce decay of wood in service.

Forest disease research develops the scientific knowledge on which prevention and control of a wide variety of pathogens rests. Detailed knowledge of tree diseases, their preferred hosts and favored environments, permits several sound approaches to control; development of cultural practices favorable to forest trees but unfavorable to disease; selection and breeding amongst the hosts for genetic resistance; recognition of potentially dangerous foreign pathogens that they may be excluded by effective quarantines, thus avoiding another disaster or costly control program such as the chestnut blight or white pine blister rust; and direct preventive or curative treatments.

Emphasis in research on disease control is placed on cultural practices that can be incorporated at minimum cost into daily stand management practices, but all approaches are explored where appropriate. For example, research has shown that prevention of fire, reduction of logging wounds, and lowered ages at which timber is harvested will drastically reduce losses from some of the heart rots, which as a group are the No. 1 disease problem; that ribes eradication will control white pine blister rust, and more recently that proper recognition of climatic influences will drastically reduce the needed control area in the Lake States and in California; biologic and economic studies show where thinning and pruning for dwarf mistletoe control can best be combined with other timber stand improvement measures to improve future yields; good progress has been made in selecting and breeding for genetic resistance to white pine blister rust, fusiform rust, and chestnut blight; and direct application of chemicals has reduced losses tremendously in forest tree nurseries.

In spite of substantial progress in lessening the impact of diseases on forests we still lose billions of board feet of timber each year to an array of organisms such as bacteria, fungi, viruses, nematodes, and even flowering plants. In some situations, we are committed to long-continuing high annual disease control expenditures, such as for white pine blister rust, until better methods are found. Intensive forestry, now gaining in the South and West especially, is continuously harassed with disease problems. Soil-borne diseases and related root rots are presently less understood than any other category of forest tree diseases. Yet, the upsurge in reforestation and afforestation, often by planting a single species over extensive areas, is intensifying these and other plantation diseases.

The program for 1966 will emphasize the search for sounder and more effective controls of forest tree diseases based on better knowledge of the organisms and how they are affected by various environments, how antibiotics suppress fungus infections in trees, and how soil organisms interrelate and operate to cause root rots. Work will continue on developing an understanding and control of heart-rots, vascular diseases such as oak wilt, rusts, leaf-destroying fungi, and the dwarf-mistletoes of western conifers. Research on preventing decay to wood used in structures also will be emphasized.

(23) FOREST PRODUCTS UTILIZATION RESEARCH, $5,890,000

An increase of $489,000 would be used to give increased emphasis to critical utilization problems, including those in such distressed and underdeveloped areas as Appalachia and the Northern Lake States. The planned research would provide a sounder basis for determining the quality and improving the performance of wood in relation to its use, in order to aid industry in overcoming growing competition from other materials and in retaining or increasing markets for woodbased products. Included would be research to improve performance of wood in housing; performance standards for transmission poles, bridge timbers, laminated beams, and other structural timbers; and major emphasis on improved and new uses for low-grade hardwoods. Some program readjustment will be made for greater efficiency in the overall work.

The aim of the forest products research program, which is centered at the Forest Products Laboratory with a field project at each of the regional forest and range experiment stations, is to contribute to the solution of national and regional utilization problems of all types, especially to problems of rural area development that often are related to improved utilization of the timber resource; to reduce unused woods and mill residues to a minimum by finding uses for

present residues; to develop new products; and to improve the serviceability and lower the costs of existing products. Its broad aim, in brief, is to develop new utilization outlets for thinnings, unpopular and little-used species of timber, logging and milling residues, and to make the whole timber crop on farms and other forest lands go further and give better service in a wide variety of uses for lumber, paper, chemicals, and other products derived from wood.

The timber-using industry is an important part of our present economy. In 1959, the total value of shipments from timber-based primary manufacturing industries amounted to over $10 billion. About 5 percent of the gross national product originated in timber-based industries. One out of every twenty people employed in the United States worked in these industries. A raw material base for a greatly expanded industry is available in little-used species, in low-value timber, and in logging and milling residues. Research in forest products utilization is needed not only to give stability to the present industry but also to develop a technical basis for new industries.

The Federal Government has a strong interest and responsibility in the public aspects of forest products utilization research. The industry in general is a complex of many small companies. Even the largest are small in comparison to those of other basic industries with whom they compete, i.e., aluminum, steel, plastics, and petroleum. One single large petroleum-using company employs more researchers than the entire timber-using industry. There are very few forest products companies who can finance a research program. Those that do are largely interested in product developments which will give them a competitive advantage; they pay little attention to finding uses for the poorer species and sizes of trees often in abundance.

More complete use of the timber crop is essential for profitable forestry. The problem is especially acute on the considerable acreage of timber in small ownership. Here the continued "creaming off" of the better timber has resulted in a residual stand of low value under present use standards. Research is needed to develop uses for this presently unmarketable timber. Many of the areas currently experiencing severe economic distress must look to full and effective use of their timber resources as the primary means for permanent improvement of their economic situation. The Federal Government itself markets over $150 million worth of timber each year. The value of this timber can be greatly enhanced by the development of more profitable uses. Also proper forest management will be facilitated by developing markets for thinnings and other low-value timber.

The 1966 program will support basic and applied research in forest products utilization, aimed at furthering intelligent and profitable use of the timber crop. The work involves the development of new and improved processes and uses, the improvement in the serviceability of wood in use, and characterization of timber and timber products for specific end uses. Attention will be focused on the problems of developing new and improved industries for areas now experiencing economic distress. Emphasis will be given to the utilization of hardwoods which are abundant in most of these depressed rural areas. More attention will be given to applied and developmental research which would result in the early establishment of new industries.

(24) FOREST ENGINEERING RESEARCH, $409,000

No program increase is proposed for fiscal year 1966.

Forest engineering research involves developing new systems and techniques of forest resource production, protection, and utilization designed to lower costs and improve the efficiency of operations. It is concerned with better engineered performance and mechanization in the more complex aspects of multiple-use practices. Multiple-use requirements dictate that new and sometimes revolutionary systems be developed to facilitate protection and optimum production for all uses of the forest under intensive management practices.

Vastly improved transport and harvesting methods are needed to assure protection of soil and water resources, to harmonize timber harvesting with other multiple-use requirements such as scenic values or recreation ,and to avoid loss of timber-growing areas to road rights-of-way. Industrial research in engineering for forestry purposes has been confined to specific equipment for scattered unrelated projects with relatively limited objectives in contrast to research on coordinated systems required by multiple-use considerations. The Forest Service's engineering research program is designed to fill this latter need. The

relative inaccessibility of many national forest lands and their high values for recreation watersheds, wildlife, and timber require strong engineering advances.

It is estimated that in Oregon and Washington alone there are at least 28 billion board feet of timber characterized by low volumes per acre, steep terrain, or costly road access which will require special harvesting and removal techniques, such as by helicopter, systems using balloons for added lifting power, or other systems and machines specially developed to accomplish harvesting of this timber. In Alaska, there is an estimated 61 billion board feet of timber which cannot be successfully logged with conventional systems because they are either too costly to the operators or too damaging to soil, water, and scenic values. Logging systems and equipment specially designed for economical timber harvesting and cultural operations on small woodland ownerships are nearly nonexistent. Specialized equipment is urgently needed for this purpose. In eastern hardwoods, some 74 percent of the total volume is considered low grade and culls. Vastly cheaper harvesting methods must be developed if such low-quality timber is to be removed economically and the sites replanted to better species. Moreover, sharply reduced nursery and planting costs are needed to accelerate the job of replanting idle or poorly stocked commercial forest land.

In fiscal year 1966 emphasis will be placed on evaluation and adaptation of balloon logging systems in the Pacific Northwest and Alaska; low-cost transport of woodpulp chips by pipeline or other methods that will permit economic utilization of small-sized timber; better engineered systems of harvesting low-grade timber on small forest properties and mechanization of harvesting and site conversion.

(25) FOREST SURVEY, $1,903,000

No program increase is proposed for fiscal year 1966.

The forest survey provides a continuing inventory of the area, location, and condition of forest lands, amounts and quality of timber volumes available, rates of timber growth, timber cut and mortality, ownership of forest land and timber, and trends in timber consumption. The forest resources of the Nation, comprising some 758 million acres, vary greatly in productivity and availability for industrial use and show widely divergent trends in growth and depletion. Federal, State, and local forestry agencies need up-to-date knowledge of the changing trends in timber supplies to provide an evaluation of the effectiveness of and needs for forestry programs. Also, because of increasing pressures generated by the various uses of forest land, and rapidly changing resource and industrial conditions, forest industries rely more and more upon the forest survey for resource information essential to business decisions regarding land acquisition, wood procurement programs, and the feasibility and locations of new or expanded industrial plants.

(26) FOREST PRODUCTS MARKETING RESEARCH, $1,464,000

An increase of $325,000 would be used for investigations aimed at expanding and strengthening markets for timber products. Research would determine trends in the amount and kind of timber products and competing materials consumed in construction, manufacturing, and shipping; and ways to overcome competitive factors in wood products markets. Ways would be sought to improve those techniques of harvesting, processing, and selling forest products that influence marketability, and thus meet better the needs of consumers, making more complete use of the newly constructed facilites at Princeton, W. Va., in this research.

Forest products marketing research includes a wide variety of studies aimed at expanding uses of wood through development of more efficient arrangements and practices for harvesting, processing, selling, and distributing forest products. Marketing research also includes studies to appraise the feasibility of new or expanded timber industries, particularly plants based on low-quality timber of little-used species and the available resources in economic problem areas. Other research involves comprehensive analyses of trends in consumption and potential future demands for lumber, pulp and paper, and other wood products for construction, manufacturing, shipping, and other end uses, and the relation of prospective markets and timber supplies.

Many forest landowners fail to realize full returns from timber management and harvesting because of lack of market knowledge and ineffective timber mar-

keting systems. Moreover, inefficient processing and marketing of timber products results in low returns to many wood-processing industries and difficulties in competing with nonwood materials in many consumer markets. Development of new or expanded markets for wood products is of importance to several million landowners and wood processors and is especially needed in low-income rural areas in need of economic development. Furthermore, the studies to appraise the outlook for future timber requirements and prospective markets is of particular importance both to wood-using industries and to Federal and State forestry agencies in guiding formulation of forestry policies and programs.

Emphasis during fiscal year 1966 will be given studies of possible methods for increasing efficiency and lowering costs in the harvesting, processing, and marketing of forest products. Market development studies will determine the quantity, location, and kinds of timber available in specific areas, and the economic feasibility of establishing new or expanded wood-using industries, especially in heavily forested low-income areas. Research on timber valuation and pricing procedures will include methods for estimating logging and milling costs, end-product values, and profit allowances as a basis for improved appraisals in marketing both public and private timber. Studies also will be continued of nationwide trends in present and prospective demands for wood products and competing materials and the outlook for wood in various markets. Such information, together with projections of timber supplies, is vitally needed for judging the Nation's timber situation and outlook and the need for major forestry programs.

(27) FOREST ECONOMICS RESEARCH, $556,000

No program increase is proposed for fiscal year 1966.

Forest economics research provides information on income, prices, costs, and investment guides relating to use of the 4.5 million individual forest ownerships that make up some 60 percent of the Nation's commercial forest land, to the management of more than 60 million acres of industrial forests, and to the administration of national forests and other public lands. This research includes studies involving the economic benefits from establishing, managing, protecting, and harvesting of timber crops; the development of principles and guides for the coordinated management of timber and other land uses for water, recreation, livestock and wildlife; and the evaluation of alternative public and private forestry programs on various classes of ownership.

Pressures on both public and private forest lands for production of timber, recreational services, and other products of the land are steadily increasing, and problems of achieving efficient allocation of capital and administration of forest land have correspondingly intensified. Forest economics research serves to guide actions to achieve increased benefits from the most efficient forest enterprises, and to provide an objective basis for resolving problems and conflicts in an expanding forest economy.

Research in this activity seeks to identify the most promising opportunities for improving forest income and employment and determine possible adjustments in public forestry programs or new measures for improving the level of management and productivity on the vast forest area in small forest holdings. Research will be continued in all important forest regions to appraise the benefits realizable from investments in planting, timber stand improvement, and other land treatment measures as influenced by site, accessibility, markets, and other factors. Studies of the economic aspects of insect and disease control programs relating to white pine blister rust and dwarf-mistletoe, for example, will be continued in the West and Northeast as a guide to size and intensity of programs. Research on critical problems of multiple-use management will also be continued in the West to help resolve conflicts among recreation, timber, and other forest land uses in problem areas where there is need for improved economics criteria to guide the management of forest land.

(28) FOREST RESEARCH CONSTRUCTION, $1,318,000

A decrease of $2,683,000 is proposed in fiscal year 1966. The $1,318,000 would be used to build research facilities for which architectural plans have been completed at two locations. The proposed facilities are at locations carefully selected for research in the 10-year forestry research plan. At each of these locations the Forest Service now has some research underway. The proposed construction is designed to accommodate these present programs and to serve research expansions that are planned to permit more intensive work on critically urgent problems.

A. Forestry Sciences Laboratory, Morgantown, W. Va., $468,000

Architectural and engineering planning funds were provided for this project in 1964. The plans are scheduled for completion by February 1, 1965. The program to be housed includes research on forest engineering, forest disease, and wildlife habitat management. The objective of engineering research would be to develop new systems of logging, transporting, and handling of wood materials with special attention to safeguarding watershed values on steep mountain slopes. The disease research would be concerned with protection of hardwoods, and the wildlife habitat studies would deal with production of both small game and big game animals in the forest environment. A site for this building has been made available by West Virginia University.

B. Forest Insect and Disease Laboratory, New Haven, Conn., $850,000

Laboratory facilities provided on the campus of Yale University were destroyed by fire on March 26, 1964. Replacement space is critically needed and architectural design and plans are now being developed. Plans are scheduled for completion by February 5, 1965; thus construction can proceed in fiscal year 1966. This location is a major center for basic research on the insects and diseases of forest trees of the northeast. A building site has been purchased.

The 1965 appropriation provided for the following nonrecurring construction items:

Forest Products Laboratory, Madison, Wis	$3,800,000
Berkeley, Calif	50,000
Design and specifications for the following:	
Oxford, Miss	35,000
Fort Myers, Fla	16,000
Albuquerque, N. Mex	50,000
Carbondale, Ill	50,000
Total	4,001,000

Laboratories funded for construction in fiscal year 1963 at Tempe, Ariz.; Princeton, W. Va.; Logan, Utah; Parsons, W. Va.; and Warren, Pa., were completed. The laboratory at Alexandria, La., funded in fiscal years 1963 and 1964, was dedicated September 23, 1964.

The architectural and engineering planning funded in fiscal year 1964 for laboratories at Morgantown, W. Va.; Sewanee, Tenn.; Missoula, Mont.; Houghton, Mich.; and Fort Collins, Colo., is being completed. Plans will be available so that construction can begin as soon as funds are provided. The architectural and engineering work on a replacement for the fire-destroyed insect and disease laboratory at New Haven, Conn., is being completed on an emergency basis so that construction can proceed in fiscal year 1966.

A construction contract for the laboratory at Madison, Wis., funded in fiscal year 1965, is scheduled to be let in early spring 1965.

Laboratory planning funded in fiscal year 1965 is on schedule.

(29) COOPERATION IN FOREST FIRE CONTROL, $12,783,000

No program increase is proposed for fiscal year 1966.

Protection is essential to the wood, water, forage, wildlife, and recreation resources on the State and private lands of the Nation. These resources play a key role, not only in the national economy, but also as a base for the economic well-being of people and communities in rural America.

The fire situation in 1963 gave dramatic testimony to the inadequacy of fire protection for areas where cooperative forest fire control is authorized by the Clarke-McNary Act of 1924. In 1963, 153,000 fires burned 7 million acres of State and private forest land and nonforest watershed areas; a devastation nearly equal in size to both Connecticut and Massachusetts. The number of fires in 1963 exceeded the previous 5-year annual average by over 65 percent. The area burned was 133 percent greater.

In a worse than normal fire weather year such as 1963, and it is known that these can be expected at least once each decade, firefighting forces are overwhelmed. It is essential that their capabilities be increased so that such critical situations, whether due to adverse weather or national emergency, can be more adequately dealt with. The Nation cannot afford to sustain these recurrent peak losses—the potential for example of what happened in New

Jersey in 1963—the death of 5 people, injury to 257 people, destruction of 237 homes, and 358 other buildings, and the burning of 202,116 acres.

The Food and Agriculture Act of 1962 and the Department's rural areas development program provide the base for moving ahead on a broad front to develop opportunities and solve problems in rural America. Control of fires on forest land and watershed lands is essential to the success of these programs. Rural welfare is closely tied to the watershed, timber, recreation, water, and wildlife resources on private lands. Especially is this true in the economically distressed areas. Failure to provide adequate protection can result in the destruction of these resources.

The cooperative forest fire control program is currently aiding the economy of rural communities by the employment of nearly 100,000 local people in rural areas full or part time in the various preparedness phases of forest fire control, such as building construction, and use and maintenance of trucks, tractors, telephones, and radios.

Fire control forces adequate to meet critical peacetime fire conditions provide the base for meeting possible wartime emergency rural fire situations.

The calendar year 1963 compilation of data from each State shows a total of 453 million acres in the Clarke-McNary cooperative program. In 1957 it was estimated that adequate protection for the area than within the program would cost about $83.5 million. In fiscal year 1963 total expenditures, Federal, State, and private, were $65,828,266. Of this total the direct Federal contribution was $11,632,266. The Clarke-McNary Act authorizes a 50 percent sharing by Federal funds as an appropriate measure of national interest. From 1954 to 1963 the annual level of State and private expenditures has increased $23.7 million; during the same period Federal appropriations increased $3 million. In 1954 the Federal share of costs was 23 percent; in 1963 it was less then 18 percent.

More lands need protection.—Studies made periodically in each State have as one objective a redetermination of the area which should be included within the Clarke-McNary program. Increasing resource values, especially water resources, have resulted (each time such a study is made) in recognition that additional areas of nonforest watershed lands should be given organized protection. Watershed protection to insure the continued production of regulated flows of high quality water is essential to the growth of the Nation. These benefits are for the most part "off site"; they do not accrue primarily to the landowner. More than this, they are most commonly "interstate." Disastrous fires on watershed lands in major river headwaters in one State may result in loss of values in a State or States far downstream.

Current resource values, including outdoor recreation, justify higher standards of protection at greater cost than was the case even as recently as 1957. More people are using the woods. This means more fires, but fire protection agencies should not have to resort to excluding the public from use and enjoyment of the woods as a substitute for firefighting forces. Increased costs of doing business are being experienced in fire control as in other activities.

Emphasis will be placed on prevention of man-caused fires in the South.—The continuing high level of man-caused fire occurrence in the South poses a threat to the long-range economic and social stability of this important resource area. Only limited progress has been made in solving the problem because incendiarism is a major cause. The year 1963 saw the second year of adverse trend in the rate of man-caused fire incidence in the Southern States. In that year the number of fires rose to approximately the level experienced 10 years ago and accounted for 62 percent of the total fires on State and private lands in the Nation.

State foresters have been leaders in the development of the national cooperative forest fire prevention (Smokey Bear) program. The annual value of the contribution of the Nation's advertisers and media outlets has been estimated at $15 million in support of this national program. Recently a regional cooperative forest fire prevention campaign has been established for the Southern States by the Forest Service and the State foresters. These two mass media campaigns for fire prevention have been extremely effective and should be expanded. The general public is now more aware of the need and prepared to support a more direct action program. The present challenge is to solve the hard core of the problem at the grass roots level. Cooperating Southern States will be encouraged to divert funds and effort from other fire control work to meet this high priority need.

Alaska—a special situation.—Alaska will eventually obtain title to more than 100 million acres of public domain and other Federal lands. Fire protection for these lands has in the past been provided through appropriation to the responsible agency; primarily the Bureau of Land Management. In fiscal year 1963 State expenditures for fire protection were $188,569 to protect the 6 million acres already placed under State administration. As the transfer program accelerates, the State faces the need to build and finance a supervisory fire control organization and field forces to replace the protection formerly supported by direct appropriation.

Following is a table showing the amounts for cooperative fire protection, by States:

	State and private funds expended, fiscal year 1963	Federal allotments, fiscal year 1963	Federal allotments, fiscal year 1965 [1]
Alabama	$1,134,546	$403,400	$397,500
Alaska	188,569	47,000	47,000
Arkansas	1,103,773	349,800	383,300
California	16,537,366	1,152,300	1,112,000
Colorado	123,891	47,000	48,200
Connecticut	311,514	57,500	85,300
Delaware	15,264	15,500	15,500
Florida	3,231,441	582,500	573,100
Georgia	3,035,464	563,200	575,400
Hawaii	33,065	25,000	35,000
Idaho	449,556	196,500	206,100
Illinois	135,888	70,500	68,100
Indiana	114,825	53,700	52,000
Iowa	81,328	47,000	47,000
Kansas	8,908	5,000	47,000
Kentucky	791,423	226,900	246,400
Louisiana	1,704,659	460,300	477,100
Maine	981,953	326,200	330,300
Maryland	451,061	155,200	149,800
Massachusetts	387,369	132,800	133,500
Michigan	1,964,735	485,200	483,500
Minnesota	751,900	313,800	302,900
Mississippi	1,868,567	474,200	477,200
Missouri	823,679	268,900	279,300
Montana	372,929	142,200	153,400
Nebraska	15,909	9,000	47,000
Nevada	250,015	49,400	67,400
New Hampshire	239,633	88,200	93,000
New Jersey	503,717	134,800	133,200
New Mexico	92,371	47,000	47,000
New York	828,397	300,200	289,700
North Carolina	1,591,100	421,900	451,900
North Dakota	9,234	14,000	14,000
Ohio	322,755	123,100	121,700
Oklahoma	203,428	174,900	168,800
Oregon	2,436,856	559,400	544,200
Pennsylvania	1,159,609	246,300	273,200
Rhode Island	118,797	47,000	47,000
South Carolina	1,408,155	391,800	408,000
South Dakota	65,832	47,000	47,000
Tennessee	1,158,529	336,800	375,300
Texas	869,450	350,300	338,100
Utah	117,491	47,000	47,500
Vermont	55,545	47,000	47,000
Virginia	1,155,517	358,300	363,600
Washington	2,940,095	557,300	553,500
West Virginia	366,697	161,600	167,200
Wisconsin	1,641,810	439,100	423,800
Wyoming	41,385	47,000	47,000
Administration, inspection, prevention, and special services to States		865,500	941,000
Grand totals	54,196,000	12,465,500	12,783,000

[1] While the amount available to a State may, if the allotment is small, exceed previously computed expenditures by that State, the actual payment to a State never exceeds State and private funds expended by or under the control of the State.

(30) COOPERATION IN FOREST TREE PLANTING, $300,000

No program increase is proposed for fiscal year 1966.

The Forest Service cooperates with the States through financial assistance and technical and other services in the production, acquisition, and distribution of tree planting stock for forest and wind barrier plantings. Current estimates indicate that there are 70 million acres of unproductive lands in private and non-Federal ownerships in need of forestation through planting and seeding. At the current forestation rate, it will take about 70 years to accomplish this forestation. The rate of reforestation needs to be at least doubled or possibly tripled to put this 70 million acres in productive condition to meet the need for a wide variety of uses including timber production, wildlife, watershed, recreation, and special forest products. Federal leadership and financial participation is necessary to restore these unproductive lands to productivity and meet the Nation's timber resource needs and strengthen the basis for stronger local economic stability. Tree planting stock will be needed also to plant land converted from cropland use under the Food and Agricultural Act of 1962 and the resource conservation development and rural renewal programs. The war on poverty will need trees for planting in impoverished rural counties to provide employment and develop the woodlands in these areas. The 1966 objective is to assist the State in production of 650 million high-quality seedlings for distribution to private landowners for reforestation of approximately 1 million acres.

The number of trees shipped to landowners during each of the past 5 fiscal years in comparison with all forest and shelterbelt trees produced by public and private nurseries is as follows:

	Federal-State cooperative program	Other State distribution	Total output, all nurseries
Year:			
1960	844,599,000	522,830,000	1,918,746,000
1961	744,159,000	248,186,000	1,537,558,000
1962	670,000,000	28,000,000	1,100,000,000
1963	587,647,000	30,607,000	1,008,000,000
1964	535,429,000	43,174,000	948,312,000

(31) COOPERATION IN FOREST MANAGEMENT AND PROCESSING, $3,527,000

An increase of $500,000 would be used to improve the present and the future income opportunities of the owners of the Nation's small private woodlands, loggers, operators of small sawmills and plants processing primary forest products, and many others whose livelihood is dependent upon the multiple-use management of these woodlands. At the same time it would help to strengthen the resource base for the Nation's forest products and services industries' future needs.

There are 4.5 million small woodland ownerships. They own 265 million acres or 53 percent of the Nation's commercial forest land, and produce about half of its forest products. If this large acreage of forest land is to make its full contribution to the income of its owners and to the needed increase in employment and development in the rural areas, skillful application of sound multiple-use forestry practices is necessary. Few woodland owners are aware of the opportunities or have the necessary technical skills to profitably manage forest lands for their many alternative uses, or to market timber and special forest products. Conservative estimates indicate that 500,000 of these owners should be receiving technical help each year in managing their forest lands for timber, water, wildlife, forage, recreation, and other uses. Many of the loggers harvesting products from these lands need help in improving their techniques, and many of the 50,000 operators of small sawmills and processing plants depending on forest-produced raw material needs help in finding adequate markets and improving their manufacturing skills and techniques to meet market requirements. The Forest Service therefore cooperates with 49 States and Puerto Rico in this program. Under it, State-employed service foresters work directly with landowners and processors in their woodlands and at their plants.

An appropriation of $3,527,000 is needed for the fiscal year 1966. When matched with State funds, this will make it possible to provide assistance to 154,000 woodland owners and 13,700 processors.

(32) GENERAL FORESTRY ASSISTANCE $903,000

No program increase is proposed for fiscal year 1966.

The Forest Service provides specialized technical services to improve timber harvesting, processing, and utilization techniques, and to expand the markets for forest products in support of rural areas development. The results of these services help improve economic conditions and the utilization of manpower in economically distressed rural areas.

Specialists in utilization and marketing provide on-the-ground services to forest landowners, loggers, and processors of forest products and maintain close working relationships with experiment stations and forest products laboratories, Federal, State, and private.

Funds are used to a limited extent to reimburse State foresters' organizations for special rural areas development activities and for employment of utilization and marketing specialists to provide special services in particular areas at request of Forest Service.

Utilization and marketing specialists provide assistance to landowners, loggers, and processors of forest products for the purpose of improving logging, manufacturing, and utilization techniques and to expand markets for forest products. Special forest products, as well as timber products, are included. Assistance consists of services in handling, processing, and marketing requiring a broad State and regional knowledge of resource availability and market potentials. They provide information needed by forest industries regarding availability of raw materials, industrial sites, transportation routings, labor supplies, and outlets for manufactured or partially manufactured products.

General forestry assistance also provides specialized technical assistance to State forestry organizations, universities, industrial and consulting foresters, private owners of large forest properties, and to other Federal forest property owners. It performs forest management work in the Virgin Islands and cooperates with defense agencies to provide emergency supplies of timber and other forest products. It provides for services to rural areas development committees and other local economic development groups.

The appropriation of $903,000 needed for the fiscal year of 1966 will make it possible to give technical assistance to landowners, loggers, and processors of forest products; to serve State and local rural areas development groups and to bring about improved forest management on millions of acres of large private ownerships and forest lands under the administration of State and Federal agencies.

* * * * * * *

CHANGE IN LANGUAGE

Changes in the language of this item are proposed as follows (new language is italicized, and deleted matter is enclosed in brackets):

"For expenses necessary for forest protection and utilization, as follows: Forest land management: For necessary expenses of the Forest Service, not otherwise provided for, * * * Provided, That not more than $680,000 *of this appropriation* may be used for acquisition of land under the Act of March 1, 1911, as amended (16 U.S.C. 513–519) * * *."

This would make it clear that only moneys appropriated for Weeks Act acquisition under this appropriation item are limited and that the limitation would not apply to acquisition with any funds made available under the Land and Water Conservation Fund Act, enacted on September 3, 1964, even though such lands are purchased under the Weeks Act authority.

TIMBER RESOURCE MANAGEMENT

Chairman HAYDEN. Under the "Timber resource management" subactivity, for which you ask $30,262,000, there is proposed an increase of $165,000 for timber sales. Would you explain how you propose to use this increase?

Mr. CLIFF. Mr. Greeley will respond to that.

Mr. GREELEY. Senator Hayden, we plan for fiscal year 1966 to cut 11.4 billion board feet and to continue our present rate of sell which is 12 billion board feet. This is a slight rate increase in our rate of business.

WALNUT TIMBER RESEARCH

Chairman HAYDEN. I will place in the record a letter addressed to me by Mr. Paul C. Johnson, editorial director of the Illinois Prairie Farmer, in which he urges an increase in the research program to determine ways of growing better walnut timber. I will furnish you a copy of this letter and I would appreciate your preparing a statement for inclusion in the record indicating your reaction to Mr. Johnson's letter.

Mr. CLIFF. We will be glad to do that, Senator.

(The document and statement follow:)

LETTER FROM PAUL C. JOHNSON, EDITORIAL DIRECTOR OF THE ILLINOIS PRAIRIE FARMER

CHICAGO, ILL., *February 16, 1965.*

Hon. CARL HAYDEN,
Chairman, Senate Subcommittee on Appropriations for the Department of Interior and Related Agencies, Senate Office Building, Washington, D.C.

DEAR SENATOR HAYDEN: My purpose in writing to you is to recommend that you and your subcommittee provide funds for the U.S. Forest Service to undertake a major research program to find better ways to grow walnut timber.

From personal experience I know that the supply of this treasured native hardwood timber is running out. I know, too, that the prices walnut timber owners are receiving for good standing walnut trees have increased sharply in the past few years. Because of the heavy demand, short supply, and high prices, planting and growing walnut trees may be a profitable undertaking for farmers and woodland owners throughout the midwest where this species of tree grows the best.

The growing of walnut may offer a fine opportunity for farmers to divert profitably some of their land to growing a crop not now nor likely to be in surplus in the future. Growing walnut at a profit may also be possible in some parts of economically depressed areas of the Midwest and Appalachia such as southern Illinois and Indiana and eastern Kentucky. In addition, many young walnut trees have seeded in the hardwood forests that are located on farms and other properties in central United States. If research can find how to manipulate these trees for rapid growth and the production of high-quality wood, this may offer a profitable way for the owners to practice an intensive type of forestry.

As a personal sidelight on this matter, my hobby is woodworking and walnut is my favorite of all our native hardwoods. In recent years I have obtained my walnut lumber from a sawmill in central Illinois. The millowner has discussed with me the difficulty he has in obtaining a supply of good trees and the high prices he must pay for them. So, in a small way at least, I have direct knowledge of this situation.

I believe the first and most fundamental step to improving the volume and quality of walnut timber is one of undertaking a comprehensive research program that will give the facts and guidelines we need. The effectiveness of such research programs in plant sciences has been abundantly demonstrated in many agricultural crops; they could be just as effective in growing walnut timber as they have been growing corn. The research program I recommend should, I think, include: (1) genetics—selection, crossing, and production of superior strains of walnut trees; (2) culture of naturally occurring trees in our native forests—weeding, thinning, releasing, and pruning.

I do not know how much a program of this magnitude would cost annually, but I would estimate around $200,000. Undoubtedly the Forest Service could give you a very close estimate. As you probably know, the Forest Service has a research station at Carbondale, Ill., that is operated in cooperation with Southern Illinois University. I am acquainted with the work of this office and feel that the walnut research program I have recommended should be located there.

I sincerely hope and urge that you provide funds for the Forest Service to start walnut-growing research in the next fiscal year. If you have questions or desire further information about the work I have recommended, please let me know.

Sincerely yours,

PAUL C. JOHNSON,
Editorial Director, Indiana Prairie Farmer, Illinois Prairie Farmer, Wallaces Farmer, Wisconsin Agriculturist.

DEPARTMENT STATEMENT

Mr. Paul C. Johnson's letter contains a clear analysis of the current problem and needed research on growing walnut timber to meet national needs.

We agree that the current shortage of walnut is a critical problem—a shortage that requires that we should do everything feasible to increase the future supply. Prices being paid for walnut timber have continued to climb to high levels. Some buyers are even using helicopters to locate black walnut trees for harvest.

We also agree with Mr .Johnson's view that growing walnut could offer a fine income opportunity for farmers and other landowners, particularly in Appalachia and neighboring areas where additional income would help the local economy. Growing walnut should also fit into the concept of converting unneeded cropland to this use.

But as Mr. Johnson points out, better technical information is needed to grow walnut timber in sufficient quantity and of suitable quality for the walnut-using industries. A few of the older walnut plantations have reached merchantable size for timber, but their yield and quality have been variable and on the whole rather disappointing. Some of the plantations were established on unsuitable soils, most of them lacked cultural attention while they were growing, and all of them were started with unimproved trees of wild origin.

Repetition of these indifferent results could be avoided by the type of research program proposed by Mr. Johnson. There is a need to improve native black walnut trees through selecting and breeding for high quality and good growth, as we are already doing for other important timber trees. The investment in developing better walnut trees for timber should be paralleled by research on walnut culture. This involves careful study of soil requirements for best growth, and development of intensive cultural methods for both natural and planted stands.

The proposed research could be conducted effectively at Carbondale, Ill., where we have facilities for research in timber production in cooperation with the School of Forestry, Southern Illinois University. A program that would permit good progress of research on walnut timber-growing problems would require $200,000 annually.

REVISION OF NATIONAL FOREST TIMBER SALES CONTRACT

Chairman HAYDEN. I note on page 14 that a revision of the contract terms for the sale of national forest timber is in the offing, and that the new terms will probably be put into use at the beginning of the next fiscal year. Would you explain to the committee just what is contemplated in connection with this revision?

Mr. CLIFF. Mr. Greeley.

Mr. GREELEY. Senator Hayden, we have completely revised the standard timber sale contract for sale of national forest timber. This is a project which has been going on between a negotiating committee representing the forest industry and a team from the Forest Service for about a year and a half.

There had grown up over a long period of time a good many administration practices in connection with our timber sales business which the industry people felt caused them undue problems and caused uncertainties in the kind of job that they understood they were taking on when they bid on a piece of timber. They felt there were too many ways in which decisions in the administration of sale were left to the judgment of the officer on the ground and that the state of knowledge has advanced to the point that we could spell these out more specifically in the contract.

So, the revised contract is actually a completely new contract. It is an effort to spell out more precisely what Government will do, what the purchaser will do, and what the standards are by which it will be determined that the work of the purchaser is adequate.

The use of this new contract will require more painstaking sales preparation on our part, our costs of administration will be somewhat higher. We are at this point only guessing as to how much higher they will be because we haven't put this contract into effect.

Chairman HAYDEN. You will get more money in the end.

Mr. GREELEY. Well, we will do a better job in the end. And if our timber business keeps going on up, which we anticipate it will do, we will get more money.

DECEMBER FLOODS—EFFECT ON NORTHWESTERN NATIONAL FORESTS TIMBER

Chairman HAYDEN. What affect did the December floods in the Northwestern part of the United States have on timber production in the national forests?

Mr. CLIFF. Mr. Greeley.

Mr. GREELEY. Mr. Chairman, the floods in the Northwestern part of the country were very seriously disruptive in a good many respects. Of course, the principal damage immediately was to communities and to homes and to businesses. As we all know there were pictures in the papers of situations where the floods came down a river valley and destroyed a mill and took out its log supply.

The Klamath River, and the Eel River both in California are examples of that, and there are a good many others. Our own Forest Service people were out in the forests prior to the start of that rain. The weather bureau had warned us there was heavy rain coming and our people were engaged in repairing damage to drainage structures and doing whatever they could to get ready for a serious onslaught of floodwater.

As soon as there was a need for search and rescue work our people all over the West became involved in that. As soon as that had passed we began to examine damage to communities and national forest roads and other facilities.

Our estimates are that there are something like 2 billion board feet of timber under contract on 18 national forests where this flood damage was concentrated and where damage to the roads has blocked access to the timber.

There are very close to 200 sawmills and plywood plants and other types of operating companies who hold these sales and whose production is affected by the damage incurred by the storm. This is the damage to the industry that is dependent on national forest operations, sir

USER CHARGES—LAND AND WATER CONSERVATION FUND

Chairman HAYDEN. One of the needs which you list for the increase in "Recreation, public use" subactivity is installation of a system of user charges as required by the Land and Water Conservation Fund Act.

What particular comment do you have with regard to user charges which you will establish?

Mr. GREELEY. Mr. Chairman, we are going to incur some increased costs in connection with installing the user charge system. It is inevitable. We are hoping to be able to do this in a way to minimize manpower. We will have to have some more men but we are going to base this very largely on the use of vending machines that sell a

ticket, just as when you go into the parking lot at National Airport you buy a ticket from a vending machine. That principle is what we intend to use.

Of course, the law provides for bumper stickers on automobiles. That also will be honored. By use of stickers and the tickets that could be sold by machines, and by policing on the basis of the same kind of philosophy that a State fish and game department checks on hunting or fishing licenses, we hope to minimize the impact on the public and ourselves. Game wardens check on the license rather than making the men go through a turnstile and present their licenses.

We plan to use that same principle. We have about $700,000 of this requested increase earmarked for meeting some of the cost in connection with installation of the fee system. I think it will probably cost us more than this.

Prevention of Duplication Criteria

Chairman Hayden. Has the Forest Service and the Bureau of Outdoor Recreation agreed on any particular criteria to assure that there will be no overlapping between the functions of the Forest Service and those of the Bureau of Outdoor Recreation in connection with lands to be acquired by the Bureau of Outdoor Recreation for your service?

Mr. Cliff. We are working very closely, Senator, with the Bureau of Outdoor Recreation, so that our work will be coordinated and so that there will be a minimum of duplication and overlapping.

Now, under the land and water conservation fund bill the money which will be appropriated to the Forest Service will be used by the Forest Service in buying lands for recreation purposes. And we will be handling those funds.

There will be no conflict with the other purchases that will be made under the land and water conservation fund bill.

As you know, up to 60 percent of the money will be made available to the States by the Bureau of Outdoor Recreation for purchase and development of State areas. These, of course, will be outside the national forests and in areas where such purchases are justified by State needs.

Some other parts of the fund will be made available to the National Park Service and the Fish and Wildlife Service for purchase of lands in these areas. I don't anticipate there will be any difficulty or duplication or overlapping in this respect. We will make sure that there isn't.

Chairman Hayden. In your contacts with the States, do you have very close cooperation?

Mr. Cliff. Yes, sir.

Restoration of Montana National Forest Recreation Facilities

Chairman Hayden. A supplemental appropriation was provided for restoration of recreation facilities in the Montana national forest because of the damage from the flood last year.

What is the status of the repair work for which this money was provided?

Mr. Cliff. Mr. Hendee.

Mr. HENDEE. Mr. Chairman, the restoration work at the moment is progressing very satisfactorily. The greatest damages were to forest roads, trails and bridges and about half of this work has been accomplished to date or has been contracted for. The remaining road and trail restoration job is programed for early completion.

The restoration of recreation facilities will be completed this spring. So, we have made very good progress with this work.

ACCELERATION OF MINNESOTA BOUNDARY WATERS CANOE AREA

Chairman HAYDEN. We noted recently the Secretary of Agriculture announced that he was stepping up the program in the boundary waters canoe area in northern Minnesota. What effect does this action have on the fiscal year 1966 budget?

Mr. CLIFF. Mr. Greeley will answer that.

Mr. GREELEY. Senator, we have earmarked or we have in the fiscal year 1966 budget an item of $100,000 to do additional work in the area of recreation activities in the Superior National Forest as a result of this decision by Secretary Freeman.

This decision was made after our publication was put out showing the geographic distribution of funds included in the fiscal year 1966 budget. So we are going to have to make some corrections there. This item of $100,000 will provide a start on what actually is a much bigger program than is indicated by that amount.

SALT AND VERDE RIVERS, ARIZ., WATERSHED MANAGEMENT

Chairman HAYDEN. I know that the Forest Service and the Salt River project of Arizona have entered into a cooperative agreement to accelerate watershed management practices on the Salt and Verde Rivers in Arizona. Does your budget for fiscal year 1966 provide any specific amount to meet the contribution which will be required by the Forest Service, which, I understand, will be about $250,000, the sum which the Salt River project proposes to make available?

Mr. GREELEY. Senator Hayden, yes; our fiscal year 1966 budget does include more than enough to match the amount proposed to be used by the Salt River Valley Water Users Association. Our present budget proposal includes about $300,000 in total for funds for this activity.

Chairman HAYDEN. The Forest Service does recognize, does it not, that the information gained from the work accomplished on this particular project, as well as on other projects in Arizona, is of value throughout that whole region?

Mr. CLIFF. Yes; we do, Senator. While this project is located in Arizona, the principles that are being developed there will have wide application in the entire Southwest as well as in other parts of the semiarid western countries, and in the mountainous areas where we are managing watersheds for water production and watershed protection purposes.

So, the results we get there will have significant application in other parts of the West.

PROJECT ALLOCATION BY ALBUQUERQUE REGIONAL OFFICE

Chairman HAYDEN. When allocations of this appropriation are made to your regional office in Albuquerque and the Rocky Mountain

Forest Experiment Station, are specific amounts made available for each of the projects included in the Arizona watershed program?

Mr. GREELEY. Senator Hayden, for the part that is handled by national forest personnel, we make from this office a single allocation that goes to the regional office at Albuquerque. They, in turn, allocate funds to specific projects on the basis of approved project work plans. These are plans for different kinds of work that have been developed in advance and agreed on by this office.

The folks in the region in Albuquerque make the decisions about how the allocations are to be made between work projects. We don't try to control that here.

Chairman HAYDEN. That is a practical problem that has to be determined out there.

ALLOCATIONS FOR INDIVIDUAL RESEARCH PROJECTS

Mr. HARPER. Mr. Chairman, could I add to that because there are both research and national forest management activities involved there?

Mr. Greeley has explained the national forest part of the job. On research we do make definite allocations of funds by projects. These allocations are agreed to by our Rocky Mountain Forest Experiment Station and our office at the beginning of the fiscal year when we make these allotments.

We expect our forest experiment station to stay within those allotments after they are made, because they are made on very definite plans of work which they are to carry out during that year.

BEAVER CREEK, ARIZ., WATERSHED MANAGEMENT RESEARCH PROGRAM

Chairman HAYDEN. Last year you provided a good progress report on the watershed management research program at Beaver Creek, Ariz. As you know, I am very much interested in this project and have followed it closely over the years. It is my understanding from the Arizona Water Resources Committee that an additional $150,000 is necessary to bring the program up to a desirable level.

I believe that the same information has been furnished to you. Will you please advise me whether, in your opinion, these funds are needed and how you would use them?

Mr. CLIFF. I will ask Dr. Harper to comment on that.

Mr. HARPER. Mr. Chairman, the $150,000 pertains to the Beaver Creek project. This project will require $150,000 additional funds to bring the program up to the level which would be required to take care of the accelerated data flow from the land treatment measures which are now in progress. Also, we have run into problems of use of fire which we did not anticipate and this will require some additional research.

The breakdown on the $150,000 which the Arizona Watershed Committee used we feel is valid. An estimated $90,000 is needed to bring the program of data collection and evaluation of the results, including economic interpretations, to a level commensurate with the accelerated land treatment measures now in progress on this pilot operation. In addition, $60,000 additional funds for working out better techniques on the use of fire is required.

Chairman HAYDEN. Do you have your funds in the budget to do that?

Mr. HARPER. We do not have these extra funds in the 1966 budget to do that. We have in the 1966 budget the same amount as we had last year; namely, $100,000 for the economic evaluation and data-gathering part of the job and $30,000 for the use of fire.

CURTAILMENT OF ARIZONA WATERSHED PROGRAM

Chairman HAYDEN. Concern has been expressed that, in order to meet the administrative costs particularly, and perhaps the research costs also, in connection with the Arizona watershed program, it has been necessary for your Forest Service people in Albuquerque and in Denver to curtail other activities which are desirable and which would have been carried on under the regular program. Is this true; and, if it is, what programs either in Arizona or elsewhere in region 3 have been curtailed?

Mr. HARPER. I will answer first on the research part. As I said before, we make allotments to lines of work at the beginning of the fiscal year and then we ask the stations to stay within the boundaries of these allotments because they are based on rather specific plans that are agreed to.

Now, there is considerable exchange of information and counseling among our project personnel which is a normal operating procedure. But we do not regard this as taking funds from one project to support another one.

ADMINISTRATIVE ACTIVITIES

Mr. GREELEY. Mr. Chairman, I would like to comment on that, please.

This comment that has come to you, I think, has referred to some of the activities being carried on in the administrative branch of the Forest Service there and I would like very much to comment on that.

When the program was initiated, some special financing was allocated from the national level because this project has national importance. This pattern of financing, allotting some funds from the national level, has been maintained and is being continued.

We lack precise figures because there has not been any particular reason to reconstruct the various steps. We believe at least 60 percent of the funds are represented by this kind of financing. Then, in subsequent years, part of the increased money allotted to the work was absorbed from regular funds of the region. This is justifiable because some of the project benefits are local rather than national in character.

To the extent that these funds could have been used for other activities, one could argue that other similar types of projects have not been carried on. We feel there is another way of looking at it. We feel that this project which has been carried on with Forest Service administrative personnel and with Forest Service research personnel and with the fine cooperation from the local cooperating agencies has given the best opportunity we have had to test multiple-use management under controlled conditions in which the various factors can be varied and evaluated.

We feel this is a highly worthwhile undertaking and we don't feel that there has, in fact, been an undue reduction in other activities because of what has been carried on here. In fact, I would say that we think this is one of the really worthwhile things we are doing and we are grateful to you, Senator Hayden, for your help and participation in bringing it about.

FISCAL YEARS 1965 AND 1966, ARIZONA PROJECT ALLOCATION

Chairman HAYDEN. Would you please place in the record for fiscal years 1965 and 1966 for each of the projects included in the Arizona watershed program the amounts allocated for each of the research items and the amounts allocated for the administrative program relating to each of these research items?

Mr. GREELEY. Yes, sir.

(The information requested follows:)

ARIZONA WATERSHED PROGRAM (RESEARCH)

	Fiscal year 1965	Proposed fiscal year 1966
Project and location:		
Beaver Creek economic evaluation, Flagstaff	$100,000	$100,000
Watershed research, Tempe	320,000	320,000
Controlled use of fire, Flagstaff	30,000	30,000
Total	450,000	450,000

ARIZONA WATERSHED PROGRESS PROGRAM (ADMINISTRATIVE PROGRAMS)

	Fiscal year 1965	Fiscal year 1966
Project and location:		
Beaver Creek, Coconino	$195,450	$208,000
Spruce-Fir, Apache	40,700	14,500
Chaparral, Tonto	26,085	7,000
Chaparral, Prescott	3,600	5,000
Total	265,835	234,500

NOTE.—The foregoing data are in addition to the fiscal year 1966 action program to improve water yield in the Salt-Verde Watersheds of $300,000.

REHABILITATING STRIP MINED AREAS

Chairman HAYDEN. In past years funds have been provided for rehabilitating strip mined areas. What can you tell us about the progress, if any, in solving the problem resulting from strip mining?

Mr. CLIFF. Dr. Harper has been in charge of that work and will comment on it.

Dr. HARPER. Mr. Chairman, I think we have been making rather good progress on this project. The project is located in Berea, Ky. The first undertaking of the project was to design a survey on a pilot basis first to determine the nature of the problems and some quantitative measure of the problems that we would run into in rehabilitating the disturbed areas from the strip mining operations.

The design of this survey is based on aerial photography, plus ground checks. Preliminary results from this survey for two counties in Kentucky have indicated that about 2 percent of the total land area has already been disturbed by coal operations and that of this disturbed area about 50 percent of it is represented in the deposit of the overburden onto the downslope. About half of this overburden has slumped and eroded down the mountainside.

HAUL ROADS IN FORESTED AREAS

Also, in connection with this survey, we were able to pinpoint another rather important problem and that is in connection with the haul roads for getting the coal out of the forested areas. The traditional way in which they have been built has been without very much regard to the watershed values. The drainage is often excessive and they are generators of accelerated erosion.

So, one of the first studies which we understood was to prepare guidelines and recommendations for better road construction. We have published that under the title "Tips for Constructing Coal Haul Roads."

Chairman HAYDEN. Do you get cooperation in that?

Mr. HARPER. Yes. Of course, the preparation of the publication on roads did not require much original research on our part. But it did require the pulling together of the experience that we had throughout the Forest Service on this kind of a problem and putting it together in a form which we could give coal operators, public agencies, and so forth. The design of the survey of disturbed areas from strip mining is a contribution from our research that required considerable effort to get meaningful results. In the actual survey we have had considerable cooperation from the Commonwealth of Kentucky and others, including coal companies.

Now, as I was saying, another study which we have undertaken is to find out the nature of the soils that we would be dealing with in trying to reestablish a protective and productive cover. Indications are that about 20 percent of the soils is extremely acid and will present grave problems of getting a plant and tree cover reestablished.

About 60 percent, however, does not seem to present very grave problems and we can probably use many of the techniques which we have already worked out for the western portion of the coal mining belt. And then there is a 20 percent of soils in between the extremes that may have some problems or they may not be so difficult.

We, of course, will concentrate our rehabilitation research on the 20 percent with the most difficult problems first.

EMPLOYMENT OF INFORMATION GAINED FROM RESEARCH

Mr. CLIFF. Senator Hayden, Dr. Harper outlined the work that is now underway but he didn't mention and I think it is worth mentioning, that we have been doing strip mining reclamation research work for quite a number of years in Ohio and Indiana in the flatter parts of the Ohio Valley where strip mining has been going on.

We have developed a good body of information and we have phased out that particular research. It has been pretty largely completed with satisfactory results for action programs. We have moved our ef-

forts on strip-mining research to the mountain areas in the Appalachian region where the problems are quite different. But we do have a good background of information on strip mining reclamation in the flatter lands where strip mining has been going on for a number of years.

Chairman HAYDEN. As I understand it, the surface soil is torn up, dumped, and so on, to get the coal below. That scrambles everything in such a way that it is very difficult to do anything with it.

Mr. CLIFF. Of course, they strip the surface off and sometimes this is as much as 50 or 60 feet or more of overburden. In the flatter lands, the surface is stripped off and set aside until they get to the coal vein, and then it can be put back in the excavation or leveled out.

It is possible, and they have developed methods of revegetating that land. The problems vary with the kind of soil and the chemical nature of the rock, but we have developed methods of restoration in these flatter areas that are pretty successful and feasible.

PROBLEMS IN MOUNTAINOUS COUNTRY

The big problem that remains to be explored is this mountainous country where the problems are quite different.

Mr. HARPER. In the mountainous areas, Mr. Chairman, it is not a question of removing the overburden from coal beneath and setting it aside. In mountainous areas the cut is made on the contour and where the slopes are steep there are no good places to deposit the overburden without risk of trouble for the forest values. You have to be careful how you deposit the overburden, or it will slump down the hill, as is frequently found in past operations. This is one of the big problems resulting in impairment of watershed values, pollution of streams, and in expensive rehabilitation of the areas.

Senator BYRD. Mr. Chairman, might I interpose some questions for Senator Cooper on the strip mine restoration studies?

Chairman HAYDEN. Go ahead.

Senator BYRD. Senator Cooper had to be out of town today, and he asked me to propound certain questions in connection with strip mine restoration studies.

As the members of the committee know, Senator Cooper has been intensely interested in this subject over the past several years. His interest has been joined in by several of us on the committee.

So with your indulgence, Mr. Chairman, and that of the other members of the subcommittee, I would like to pose the following queries in behalf of Senator Cooper to Chief Cliff and Dr. Harper or whomever they may designate to answer.

FORESTRY RESEARCH PROGRAM, BEREA, KY.

Having followed with interest, the forestry research program being conducted at Berea, Ky., I wonder if you could tell us what progress you are making in strip mine restoration studies there. Also, it would be helpful to the committee to know how your work can be useful in rehabilitating land affected by stripping and in helping encourage reclamation.

Mr. CLIFF. I think Dr. Harper's comments were pertinent to that question already.

Do you have anything to add?

Mr. HARPER. I could add to what I have said, Senator, but some of it may repeat what I have already related.

Senator BYRD. I would not want you to be repetitious, Dr. Harper, but I do feel compelled to ask the questions. If you want to supplement what you have said already——

Mr. HARPER. May I do for the record, please?

Senator BYRD. All right.

(The information referred to follows:)

REHABILITATION OF STRIP MINED LAND

We are pleased with the progress being made in research concerned with rehabilitation of strip mined land. The project at Berea, Ky., is now well underway. There are some 20 or more individual studies underway. These are concerned with the chemistry of spoil materials as media for growing vegetation and as sources of stream pollution, methods and species of trees and low-growing plants to use for stabilizing disturbed areas, location and construction of coal haul roads, and movement and placement of overburden from the stripping operation.

The research needed in eastern Kentucky and adjacent States is quite different from rehabilitation of coal strip mined lands to the west. The Forest Service has worked out answers to many of these problems, and the results have been successfully applied in the less mountainous areas of Illinois, Indiana, and Ohio.

An important study at Berea now nearing completion is a survey of strip mining in 30 counties in eastern Kentucky. A preliminary report covering about 262,000 acres in the Upper Cumberland River Reserve District of Letches and Harlan Counties, indicates about 2 percent (4,400 acres) of the total land area has been disturbed by strip and auger mining. All of the strip mined areas are on forested slopes, mainly upper slopes and ridgetops. Outslopes (material dumped downhill) make up about 50 percent of the disturbed acreage. It is significant that 1 out of every 4 acres of the outslope area has slumped down the mountain. We hope to determine how to reduce these slumps. The survey also revealed 132 miles of coal haul roads in these two counties, about 80 percent of which are in rough topography on steep forested slopes. We anticipate that the 30 county survey will produce significant statistics about the strip mining problem. It will also serve as a planning device for pointing out the areas and specific situations in greatest need of research. Furthermore, there is proposed legislation now in the Congress calling for a nationwide survey of all types of surface mining, including stripping. We believe that the survey techniques we have developed will be useful in doing that job.

Our research has developed techniques for predicting, prior to stripping, the probable area of outslope that will result from a stripping operation on a slope of given steepness and a high wall (depth to coal seam) of certain height. The average disturbed width of strip mines observed was 231 feet. Each mile of contour mining results in 2 acres of high wall, 16 acres of coal pit, and 10 acres of outslope, for a total of 28 acres disturbed. This information is useful in planning, before stripping, the subsequent stabilization and restoration measures needed.

Preliminary guides for proper drainage of coal haul roads have been developed and are now available to coal operators in published form. Proper drainage is essential for the maintenance of good road conditions and to prevent severe erosion and sedimentation in the streams.

Intensive research is underway on species of grasses, trees, and shrubs to plant on disturbed areas. This is one of the most difficult areas of research but one of the most important. A recent study in eastern Kentucky indicates that 60 percent of the areas disturbed by stripping will have only minor problems of restoration and revegetation but that on 20 percent of the areas sampled major difficulties will be encountered in revegetation. Spoil banks formed from strip mining on six principal coal seams in eastern Kentucky has soil texture that should support good plant growth but chemically they are often highly acid. They also contain large amounts of soluble salts which may interfere with seed germination, plant growth or uptake of water by plants. High concentration of iron, manganese, sulfur, aluminum, and copper were found, but most spoil

banks contain only about one-tenth of the exchangeable calcium considered adequate for normal plant growth.

Results of research by our Berea project will be of use directly by strip mine operators and mined area reclamation specialists. We are making findings available as rapidly as possible through publications, field trips and consultations. Our scientists have been called for technical consultation by the State of Kentucky in their development of regulations and requirements of restoration measures for compliance with the Kentucky statutes relating to strip mining and reclamation. Our objectives are: (1) To obtain facts that will permit decisions ahead, of mining, as to what uses will be made of the land after mining so that reclamation will be an integral part of the entire mining operation, and (2) to develop rapid and efficient methods of restoring strip mined lands to productive forest uses such as recreation, timber production, and fish and wildlife habitat.

STAFF EMPLOYED AT BEREA

Senator BYRD. I know that you have other research activities also under way at Berea, and I wonder if you could tell the committee what your staff totals there at present.

Mr. HARPER. The staff total at Berea is 24 at the present time. This includes the work on strip mining research as well as our research in other activities at Berea.

ADEQUACY OF OFFICE AND LABORATORY SPACE

Senator BYRD. In connection with this research, and particularly with the needs of strip mine restoration studies, do you have adequate arrangements for office and laboratory space and other facilities necessary to conduct this job?

Mr. HARPER. Unfortunately, we do not, Senator Byrd. At Berea, we have our programs housed in three or four different places. We are in quarters made available to us by the college at Berea. We also have rented quarters.

We would like when it is possible to do so to construct facilities. We rather desperately need better laboratory facilities than we have, particularly for the strip mine restoration research. At the present time we have only a small laboratory made available to us by Berea College.

Senator BYRD. Have you determined what an adequate laboratory would cost to plan and construct?

Mr. HARPER. Yes. The laboratory requirements at Berea as well as at a number of other places where we need additional research facilities were worked out at the time we made our 10-year forestry research program.

At Berea, the size of the program which we have projected, and its requirements in terms of laboratory facilities, greenhouses, and so on, would cost an estimated $500,000.

Now, this in turn will cost $40,000 for the architectural design and engineering services.

Senator BYRD. So the total would be about $540,000?

Mr. HARPER. That is approximately it; yes.

Senator BYRD. What would be your capability in fiscal year 1965?

Mr. HARPER. In fiscal year 1966, which is the coming year, we do not have anything in the budget for construction at Berea. The only items in the budget for 1966 for construction are two laboratories. One will be at Morgantown, W. Va., and the other at New Haven, Conn.

Senator BYRD. Is there anything in the budget for planning at Berea?

Mr. HARPER. No, sir.

Senator BYRD. I presume that your capability would go beyond the mere planning of the laboratory in fiscal year 1966, if you had the moneys, if they were made available.

Mr. HARPER. I think that we would prefer, and I believe this has been the customary practice with this committee and the committee on the House side, that we, where possible, do the architectural design and engineering first, and then we have a rather firm estimate of the construction costs. Following this we request the funds for the actual construction.

Senator BYRD. That was your experience in dealing with the Morgantown Engineering Research Laboratory?

Mr. HARPER. That is right.

PLANNING OF LABORATORY

Senator BYRD. So this means in fiscal year 1966 there being no moneys in the budget for the planning and design of the proposed laboratory at Berea, Ky., if the committee in its judgment were to make available $40,000, this would be adequate for the preliminary planning of the facility?

Mr. HARPER. That would be an adequate amount for the planning, yes.

Senator BYRD. This is Senator Cooper's last question: "I take it that such a building for a suitable laboratory would provide all the necessary space and scientific equipment to make the work of your present staff effective and more immediately useful, especially in nearby areas?"

Mr. HARPER. That is correct.

Senator BYRD. Thank you, Dr. Harper.

Thank you, Mr. Chairman.

MAPPING PROGRAM

Chairman HAYDEN. On page 40 of your justifications you indicate that it is necessary for the Forest Service to maintain a mapping program. How much of the budget estimate for land classification is allocated to preparation of maps?

Mr. NELSON. Mr. Chairman, I am sorry I do not have the exact figure here. It runs about $200,000 a year for drafting topographic maps. Our entire mapping program, for all types of maps, cost just over $1 million per year.

Chairman HAYDEN. Does the Forest Service do its own mapwork, or does one of the other Federal agencies do it on a reimbursable basis?

Mr. NELSON. Mr. Chairman, there are several different types of mapwork. The Geological Survey does a lot of topographic mapping which we use. We supplement the topographic mapping to about 1,900 square miles a year where we do the fieldwork. We take the photographs and make maps and these maps are coordinated with the Geological Survey's. This mapping is part of an overall coordinated plan. The Geological Survey prints, publishes, and distributes these maps.

We have planometric maps where we do about 5,000 square miles a year, and that is completely by ourselves. There is no other agency that does that type of mapwork on the national forests.

In addition to that, we publish our half-inch administrative maps and some recreation maps.

Chairman HAYDEN. It is all to Geological Survey standards?

Mr. NELSON. Yes; it is. We have a very close working relationship with the Geological Survey.

Mr. CLIFF. I assure you, Mr. Chairman, that there is the closest coordination. There is no overlapping, and the work that we do fits in perfectly with the national map standards. We have been on that basis so that our maps fit in with the Geological Survey national mapping standards.

SANTA BARBARA, CALIF., FOREST FIRE DAMAGE

Chairman HAYDEN. Last fall supplemental funds were made available to rehabilitate an area which was damaged by the large forest fire near Santa Barbara, Calif. Would you please comment on the damage which was sustained, and the land restoration measures which have been taken?

Mr. CLIFF. I would like to comment on that myself, and then I will ask Mr. Greeley or Mr. Nelson to supplement it.

This was a large and disastrous fire of the watershed that supplies water to Santa Barbara. I flew out to that fire and personally looked into the situation.

I will say it was one of the best organized, smoothly run, major fire operations that I have ever seen. They were using all of the modern firefighting techniques, and I was quite proud of the job that our organization and cooperating organizations did in handling that emergency.

Before the fire was out we had approval from the Secretary of Agriculture to start rehabilitation of the burned area. Part of this area is very steep mountain face above Santa Barbara, and posed a real flood threat.

While the fire was in its final stages, we started seeding with grass on the steep slopes in order to get an emergency cover established. Later on we used our emergency flood funds to install several debris basins on the watershed area on the back side of the Santa Ynez Mountains, and we did some work we call type conversion work, building permanent firebreaks and trying to convert the vegetation from fuel to a permanent grass cover on those soils which would support permanent grass, the objective being to break up these fuel types so that we can avoid a recurrence of this large conflagration in this kind of an area.

I cannot tell you the exact acreage that we treated in this manner, but we are trying to take advantage of this disaster to do this type conversion work and build permanent firebreaks so that we can cope with similar emergencies more effectively in the future.

REQUIREMENT FOR ADDITIONAL RESEARCH

Chairman HAYDEN. Do you believe that any other actions are necessary in connection with a problem of this kind?

Mr. CLIFF. Yes, I do, Senator. This is a real tough problem, and it is typical of the kind of problems that we have in these chaparral-covered watershed areas.

Here on the Santa Barbara face we had been able with the cooperation of local people and the State and the counties to prevent a major fire in this immediate vicinity for a long period of years. As a result, the fuels build up and hazards build up to the point where when a fire started, it was very difficult to control it under severe burning and wind conditions.

There must be a better answer than to just protect an area of that kind until fuels build up and then try to fight the fires after they start. I think we need to get into a more positive program of breaking up these fuel areas, of converting the brushland to less flammable cover on the soils where it is possible to do this.

It is not possible to do it every place on the steep rocky slopes, but there are places where the soils are deep and fertile enough to support grass cover rather than brush. We need to break up these areas and keep them broken up, so we do not have this massive fire problem.

We are doing some of this. Our research work is pointed in this direction. We are doing it wherever we can within our financing capability.

We are doing type conversion work. I think there are places, maybe, where controlled use of fire has a place, although this is a very difficult and complicated thing, because wherever things get dry enough for fires to burn, it becomes dangerous.

The vegetation in that country is not always susceptible to being replaced with something that will hold the soil as well. It is important to hold the soil in place, or you get mud and rock floods.

But I think we do need some more searching, research, and pilot testing of various methods of fire control and the actual management of these brush areas, rather than let them grow up into fire hazards resulting ultimately in conflagrations.

CONGRESSIONAL APPROPRIATION CONCURRENT WITH BURNING

Mr. GREELEY. Mr. Chairman, may I add one observation to what Chief Cliff has just said?

One of the remarkable and very, in my experience, unusual things about this Santa Barbara fire situation of last fall was that this is the only time I know of when, during the time that a fire has still been burning, it has been possible for the Congress to be taking action to appropriate funds for necessary damage prevention and rehabilitation measures in connection with it.

There had been earlier fires last year, and we had obligated the funds that were available to us for rehabilitation measures, and so had the Soil Conservation Service. Had it not been possible for the Congress to act as quickly and positively as was done, this additional $900,000, it would not have been possible to do this damage prevention work.

I think we should also point out that the Corps of Engineers and the local people out there, through the counties and municipalities took a great interest in this, and put a lot of money into it, too.

Mr. CLIFF. That is correct, the State and the county carried the large share of this expense where it involved State and county lands.

AIR TANKER SERVICE CONTRACTS

CHAIRMAN HAYDEN. Senators Mansfield and Metcalf have handed me copies of telegrams which they have received from Flick Aviation, Inc., concerning the contract offered by the Forest Service for air tanker service in connection with forest firefighting. It is indicated that the compensation offered for this service is insufficient.

Will you please inform the committee what generally is paid for this type of service, and indicate whether sufficient funds are included in your fiscal year 1966 budget. If not, how much would be required?

Mr. CLIFF. Mr. Nelson will respond to that question, Senator.

Mr. NELSON. Senator Hayden, I believe the two Senators have put their finger on a real problem with us.

As we have developed our firefighting, using more aircraft and the use of what we call air attack, we have found that more and more air operators have gotten into the business. We find then there becomes, especially on a light fire year, a price-cutting situation.

Also, a lot of the operators are of the transient-type rather than the permanent-type operators, and consequently there has developed what we consider quite a serious problem.

GUARANTEE OF MINIMUM TIME CONTRACTS

So we made a study last year to determine both from our contracting and our aircraft people what might best be done. We have arrived at a new policy in which we propose to enter into a contract where we would guarantee a certain minimum amount of time by these aircraft.

I speak here of the larger type aircraft. The minimum guarantee would be for a specified amount of time, and we would guarantee that whether a particular fire situation developed or not.

This has been taken up with the aircraft operators, because there had been a lot of dissatisfaction. Many of the Congressmen had heard from aircraft operators because they would get their tanks intalled, and then if the season was a light season, they might sit there all year and not get very much work.

Our new policy was proposed to be on a guaranteed basis. It would allow us to use the better, more permanent and experienced pilots and most suitable aircraft, but it is going to cost us some more money.

I believe that is where our situation is at the present time. Eventually, we estimate that it might cost as much as a million dollars or more. We figure that this would be saved by having a better type of operation and better aircraft and more experienced pilots and a direct reduction in the forest firefighting cost item. We could, I think, in this next year get by with about half of that cost or $500,000, on getting started.

We do have one picture here, Senator, that I might show. It is of the Santa Barbara fire. This is an indication of savings that were made by protecting improvements.

That light area of the picture shows the buildings valued at over a million dollars, maybe a million and a half dollars. Some of those homes are up in the $50,000 class.

You can see around the outside of that a red streak. That is a chemical that was dropped by aircraft around there, and then the fire you see came up into that. Because of being able to put the

chemical on, we were able to stop the fire and save that Painted Cave area, which is a tremendous area of very high value improvements.

ADDITIONAL COST FOR POLICY IMPLEMENTATION

We do have a problem which the Senators have put their finger on. It would cost more money this year to implement that new aircraft policy. The only way we can get started on it would be to reduce our prevention, protection, and our additional attack crews.

If we go too far that way, it means that some fires will get bigger because we will not discover them in time; some would start that we might have prevented; others that might have been kept small by initial attack crew might become larger. So, that is our problem.

PACIFIC NORTHWEST FLOOD DAMAGES

Chairman HAYDEN. Late last year severe floods in the Pacific Northwest caused damage to some of the national forests. Would you briefly tell the committee about this damage, and indicate whether a supplemental budget estimate will be submitted to accomplish necessary rehabilitation work?

Mr. NELSON. I have a few pictures here for the committee that we might use, indicating the type of damage.

The road damage, especially, was tremendously heavy. That is a picture of the Clackamas River Road, a road that before the flood damage and during the logging season hauls about 1 million feet of timber every day. It is a very important road to the timber economy of Portland, Oreg., and in that vicinity.

On total damages to our transportation system, we figure there are about 12,000 miles of road that have been damaged. That is almost twice as much road as we build a year.

There were 581 bridges or major culverts damaged, and nearly 5,000 miles of trail and some 47 trail bridges.

This would affect, as was stated here this morning, some of the sawmills and employment. There are 195 sawmills affected by roads that have gone out. These are at least partly dependent on national forest timber. These mills employ 20,800 employees, and so there is employment affected.

We lost a good many bridges, and this is a picture of a damaged bridge. Total damage, dollarwise, to our national forest road system was $47 million, which is our present estimate.

The next item indicates the need for relief to operators on timber sale roads. There is a possibility for relief in those Forest Service roads that are being constructed by timber sales operators, but have not yet been accepted by the Forest Service, and are, therefore, the responsibility of the timber sale operator. We have no authority at the present time to relieve the affected timber operators from this act of God type of disaster. There is a bill in the Senate, and also in the House, that would give that authority, so we have indicated, in making our estimates, that this would take about $2 million, if authorized by these bills, making a grand total of about $49 million.

Senator, you asked a question in relation to supplemental needs. The entire need for our road damage work, as well as the other damage, is being considered at the present time by the Department of

Agriculture and the Budget Bureau. I do not believe I can say just how that is going to be handled.

As for dollars this year, we estimate in the road business we would have to have at least a small supplemental if we are going to carry on the restoration work at the rate that we anticipate that we should.

AUTHORIZATION FOR COMPLETE RESTORATION

As far as authorization is concerned, we are not hurting right at the present time, because we can borrow on authorization that we have for the rest of the year. In fact, we could borrow from the next year.

But to carry on the rest of the road work for the whole overall program, there will have to be additional authorization at some time, and of course that comes before the Public Works Committee rather than this subcommittee.

The Bureau of Budget has released to us $8.4 million of authorization that they had in reserve so that has helped us get started.

Chairman HAYDEN. Unless you get that money, the damage would have an adverse effect on the Northwest budget for the next few years, would it not?

Mr. NELSON. That is correct.

REPROGRAMING AND REORIENTING PROGRAM

Mr. CLIFF. Senator, in addition to the road damages, there were damages to other kinds of improvements, such as campgrounds, water systems, administrative buildings, and other improvements.

The estimate of the damage to these kinds of structures and improvements amounts to about $5.5 million. There was also a heavy impact on our timber sale work, because, as Mr. Greeley pointed out, many of the sales where we have done all the sale preparation work, the roads were washed out, and the operators cannot get to their sale areas and it is necessary to redo, or to relocate those sales, and do the job all over again in order to keep the timber industry in business and keep employment up.

We are busily engaged in reprograming and reorienting our total program in the flood-affected area.

Chairman HAYDEN. There will be, I assume, supplemental estimates submitted.

Mr. CLIFF. We have had discussions with the Department and the Budget Bureau on this. We hope something will be recommended.

WATER RESOURCE DEVELOPMENT RELATED ACTIVITIES

Chairman HAYDEN. You have already explained the need for the water resource development related activities item, for which you are asking an increase of over $2,600,000 in fiscal year 1966. Please explain the need for this large increase over the amount which was available from other subactivities last year.

Mr. CLIFF. I am going to ask Mr. Greeley to respond to that.

Mr. GREELEY. Mr. Chairman, this represents a real serious situation in that we are up against a bigger job in connection with these reservoir activities than we had previously appreciated.

About 2 years ago we woke up to the fact that over the course of the next 8 to 10 years we were faced with the prospect of some-

thing like 300 major water developments which would be located in total or in part on national forest land, and every one of which would have some degree of impact, and many of them major degrees of impact, on the management of the national forests and the national forest resources.

These impacts would affect, singly or in combination, transportation system, stumpage availability and costs, administrative improvements, and always the need to accommodate public use or to take advantage of the recreation opportunities provided by these facilities.

Some are projects which are federally financed, such as projects of the Corps of Engineers and the Bureau of Reclamation, but many others are not federally financed. These could include projects proposed by various State organizations, State fish and game departments, or by Federal Power Commission licensees.

So, Mr. Chairman, this addition of a new line item in our budget structure, and this request for an increase of $2,645,000, is an effort on our part to recognize that in this general area we are now faced with a much bigger job than we had previously thought, and we feel we can no longer just barely get by by accommodating it in the best way we can by using inadequate funds from recreation use and from soil and water and from transportation.

What we plan to do at this time is primarily to concentrate on seven reservoirs. We will also do impact surveys, and we will do some of the other things we have been doing right along in this general area but in a more intensive manner.

Interdepartmental Reservoir Project Agreements

Chairman Hayden. The committee is aware that an agreement has been reached between the Secretaries of Defense and Agriculture for Forest Service management of recreation on Corps of Engineers reservoir projects in the national forests. Will you explain this agreement and its budgetary effects?

Mr. Greeley. Very briefly, Senator Hayden, we are quite delighted that it was possible to work out this kind of an understanding between the Department of the Army and the Department of Agriculture.

This is an overall agreement which provides that the two agencies will participate in joint planning of reservoir projects proposed by the Corps of Engineers, so that some of these impacts that I have just been talking about can be anticipated in advance.

In addition, it sets up some procedures by which the two agencies will work out problems of jurisdiction and problems of budgeting for the projects that the corps has already started which imposed to some extent or to a major extent on national forest lands.

We think it is a wonderful piece of coordinating, and we are delighted that it was possible to work this out.

Supplemental for Fighting Forest Fires, 1965

Chairman Hayden. For fighting forest fires you have made your usual request of $5 million. I understand, however, that it is necessary to request a $14 million supplemental estimate for fiscal year 1965. Do you have any particular comments on your last fire year?

Mr. NELSON. Yes, I would like to comment on that, Senator.

This year was not a particularly easy year, as is indicated by the large Santa Barbara fire that we talked about, that is, the one very large fire we had on the national forests. During that same period, the State of California was in a real serious fire situation.

The State, for example, lost about 100,000 acres in the Napa Valley area in the northern part of California.

We had another very, very serious fire situation, weatherwise, through Nevada and Idaho, where the Bureau of Land Management lost about a quarter of a million acres in fire during that period. On our national forests in Nevada, I think we had two fires of about 6,000 acres each.

So, typically it was not an easy year. We did get fewer lightning fires, however, than normal. We did place a lot of effort into our fire prevention and I am glad to say we got our man-caused fires down to the 5-year average. This is an improvement from 1963.

The amount that we have had to request in the supplemental varies from year to year from about $3 million as I recall, in 1958, up to over $34 million in 1962. So this is perhaps below the average.

As a whole in our firefighting, we reduced our burned area more than 50,000 acres from the 5-year average, and we give our new processes of air attack quite a little credit for that, as well as prevention and some of the other things we are placing emphasis on.

INSECT AND DISEASE CONTROL

Chairman HAYDEN. You are asking an increase of $1,800,000 for insect and disease control. How do you justify this increase?

Mr. CLIFF. Mr. Rasmussen is responsible for the overall supervision of our insect disease control work, and I will ask him to answer that.

Mr. RASMUSSEN. Mr. Chairman, this increase is for insect control work. It is urgently needed for the aerial spray programs for control of spruce budworm and other insects. We need to use less DDT and more other insecticides. These cost about three times as much as DDT.

We also are using additional helicopter work to more precisely place the spray.

In addition to this, we are having to monitor very carefully the air spray programs, both before and after the program. Monitoring continues for a year or two.

We must pilot test new and promising insecticides this year in order to find out if they will be effective in operational use. We also must develop and test improved methods of aerial application.

Our cost in years past has been about $1.18 an acre. With these increases, it will be about $2.88 an acre.

The big bulk of this increase will be for spruce budworm spraying.

WEEKS ACT PURCHASES

Chairman HAYDEN. Would you please place in the record a statement indicating the Weeks Act purchases during the past 2 fiscal years, showing the number of acres, the forests to which they were added, and the amount which was expended for them?

Mr. CLIFF. We will be glad to do that.

Mr. NELSON. We will do that. We have the information.

(The statement referred to follows:)

WEEKS LAW OBLIGATIONS, FISCAL YEAR 1964 [1]

Forest and State	Number of options accepted	Acres	Obligation
Cumberland, Ky	3	120	$2,130
Jefferson, Va	5	4,824	107,975
Chattahoochee, Ga	14	3,318	205,871
Cherokee, Tenn	1	2,062	35,046
Holly Springs, Miss	1	64	1,600
Ocala, Fla	1	199	39,856
Ouachita, Ark	4	120	7,196
Ouachita, Okla	32	1,273	209,804
Ozark, Ark	27	3,907	81,959
Sumter, S.C	1	25	1,265
Chippewa, Minn	1	78	1,500
Clark, Mo	3	313	12,597
Hoosier, Ind	20	1,167	43,843
Manistee, Mich	13	571	12,260
Mark Twain, Mo	2	1,025	75,660
Ottawa, Mich	4	1,586	18,046
Shawnee, Ill	2	330	21,972
Wayne, Ohio	7	665	10,774
Total	141	21,647	889,354
Surveys and related acquisition costs			71,427
Total obligation			960,781

[1] Entries for each national forest are rounded to nearest acre and nearest dollar.

ESTIMATED WEEKS LAW OBLIGATIONS, FISCAL YEAR 1965 [1]

Forest and State	Number of options accepted	Acres	Obligation
Cumberland, Ky	5	1,263	$30,147
Green Mountain, Vt	2	462	12,760
Jefferson, Va	12	2,376	69,333
Monongahela, W. Va	1	838	2,100
Chattahoochee, Ga	1	119	4,000
Holly Springs, Miss	2	139	9,554
Ouachita, Ark	38	280	39,000
Ouachita, Okla	23	2,657	92,332
Ozark, Ark	20	2,760	88,679
Sumter, S.C	4	205	17,435
Chequamegon, Wis	8	1,175	3,944
Chippewa, Minn	4	1,669	11,697
Clark, Mo	8	1,296	116,455
Hiawatha, Mich	2	250	9,042
Hoosier, Ind	6	1,358	29,365
Huron, Mich	1	400	32,500
Manistee, Mich	4	101	2,457
Mark Twain, Mo	6	600	14,600
Ottawa, Mich	3	83	1,570
Shawnee, Ill	15	1,199	26,420
Wayne, Ohio	19	1,979	38,450
Total	184	21,209	651,840
Surveys and related acquisition costs			28,160
Total estimated obligation			680,000

[1] Entries for each national forest are rounded to nearest acre and nearest dollar.

TEN-YEAR BALANCED RESEARCH PROGRAM

Chairman HAYDEN. In April of 1964 the Secretary of Agriculture sent to Congress "The National Forestry Research Program" which outlines the forestry problems and needs for a balanced research program during the 10 years between 1963 and 1972. However, your

budget request for a number of items of research is the same or less than last year.

In your opinion, does the budget in this respect reflect adequate progress toward meeting the needs as indicated in the national program?

Mr. CLIFF. Here, again, Senator, our budget requests do not measure up to the projections in the program even during the first year, because of the overall financial problems of the Government. We have been able to adjust our budget requests to accommodate them to the overall budgetary problems.

Naturally, we are disappointed that we could not fully implement everything that we had recommended in the national forestry research program, but when we put it together, we recognized it was a goal, and that in attaining that goal we would probably not get to it in a uniform year-by-year manner.

Dr. Harper may have some further comments on this matter.

Mr. HARPER. I think Mr. Cliff has explained the situation.

There is some progress. Some lines of research were increased. However, some were decreased. Construction funds for laboratories were also decreased. In the overall, we lost ground over what was available to us last year. The decreases do not represent progress toward the goals of the planned program, because the projected program did visualize expansion of all these lines of work. But as Mr. Cliff pointed out, we have made adjustments to accommodate the research budget to the overall financial difficulties of the fiscal year 1966.

REDUCED PROGRAMS FOR TIMBER AND WATERSHED RESEARCH MANAGEMENT

Chairman HAYDEN. Why have you recommended reductions, small though they are, for timber management and watershed management research?

Mr. HARPER. They are relatively small reductions. They do not indicate a lessening of the importance of these activities as a whole. We visualize that we will eventually expand all these lines of work. These are adjustments, however, which can be made this coming year without serious impairment of our program.

I think these particular adjustments will make for overall effectiveness and efficiency of operation in the long run.

RESEARCH LABORATORY, TEMPE, ARIZ.

Chairman HAYDEN. At my request last year, you provided information concerning the research program at the Forest Hydrology Laboratory in Tempe, Ariz. This committee recommended an increase of $360,000 in your budget to provide a full staff at that station, and half of this amount was finally approved by the Congress. How is your program at Tempe progressing?

Mr. CLIFF. Mr. Chairman, Dr. Harper will answer that, but I would like to call your attention to the fact that the Tempe Laboratory will be dedicated this spring, and we would very much like to have you out there to that dedication, because of the part you played in getting it, and the interest you have displayed in getting that most important Laboratory established in Tempe.

Chairman HAYDEN. Maybe that dedication will have to be postponed until Congress adjourns. I do not know how I can get away from here.

Mr. HARPER. Mr. Chairman, I think we are making good progress. We are discovering many new principles and practices for modifying the brush and forest cover for greater yields of water, and we also have a program underway there on wildlife habitat. However, the Laboratory is not at full capacity with respect to staffing.

Chairman HAYDEN. In order to provide a staff at full strength, do you still need the remaining $180,000 of the amount which was approved by the Senate last year?

Mr. HARPER. Yes.

PELLETIZED SEEDING PROJECT

Chairman HAYDEN. The range management research subactivity is another place where there is a small decrease, this time $50,000. What is the reason for this decrease?

Mr. HARPER. That decrease is brought about by closure of the range reseeding project having to do with pelletized seed. The results from this work have not been promising to date. The results from use of naked seed and conventional methods of seeding have been less costly and more effective than the seeding with pelletized seed.

So because the work is considered of less priority than some other range improvement research that we could be doing, we thought we could spare that project this year.

Chairman HAYDEN. Has the project by and large been worth while?

Mr. HARPER. The results has been disappointing, Mr. Chairman.

You may recall that this project, carried on in the manner in which we agreed with the committees we would carry it on, has been underway for 5 years. The first 3 years, beginning 1961, it was under the Bureau of Land Management.

The last 2 years the Forest Service has carried on the project. So for 5 years, at the rate of $50,000 per year, this project has been underway.

LABORATORY RESEARCH

Now, as I say, the results have not been promising. In addition to field seedings with pellet seed, we have done some laboratory research, to find out more about the physiological aspects of grass seed along with the nature or character of the compressed earthen pellets. We have had in mind that some modifications could be made to make seeding with pelletization more effective.

We feel that future work concerning pellet or coated grass seed probably should be first confined largely to the laboratory, with deferment of further large-scale field seedings until more knowledge is gained of the functions which might be incorporated into pelletized or otherwise treated grass seed. However, we do not regard such research as high priority.

Chairman HAYDEN. What forests is this work done in?

Mr. HARPER. The actual seeding work was done in various places throughout the Southwest. The project was headquartered at Albuquerque, N. Mex., insofar as personnel that conducted and supervised this work. Seedings on ranges were mostly in Arizona and New Mexico. There may have been some in other States, too, because

an attempt was made to sample various site conditions of range, types of cover, and so forth.

Chairman HAYDEN. You gave it a thorough trial?

Mr. HARPER. I think we have given it just as thorough a trial as we could.

After 5 years, the results of this particular project have not shown promise in comparison with seedings made with naked grass seed.

I might add that over a period of 16 years of less intensive work, mostly prior to this 5-year project, but still considerable work on the use of pelletized and coated seed, the results have been largely negative with respect to pelletized seed.

Chairman HAYDEN. Thank you.

FOREST FIRE RESEARCH

For forest fire research you ask $2,247,000 in fiscal year 1966, an increase of $350,000 over the amount available in fiscal year 1965. Your statement indicates that the increase will be distributed between the Forest Fire Laboratories at Riverside, Missoula, and Macon.

Would you please place in the record a statement to show the amounts available for forest fire research at these three Laboratories in fiscal year 1965, and the amounts which will be allocated to them in fiscal year 1966.

Mr. CLIFF. We will do that.

(The statement referred to follows:)

RESEARCH AT LABORATORIES

Funds available for fire research at the three Forest Fire Laboratories in fiscal year 1965 and proposed allocation of increases in fiscal year 1966:

Location	Funds available fiscal year 1965	Allocation of increase in 1966 budget
Riverside, Calif.	337	135
Missoula, Mont.	461	135
Macon, Ga.	263	50

Chairman HAYDEN. In fiscal year 1965 the Senate approved an increase of $50,000 to strengthen forest fire research at the Laboratory in Macon, Ga. The amount was not agreed to by the House, although this sum would have been only a step toward providing for full staffing of the Laboratory. Does your fiscal year 1966 budget include funds for strengthening the forest fire research project at Macon?

Mr. HARPER. The fiscal year 1966 budget includes $50,000 for strengthening forest fire research at Macon, Ga.

Chairman HAYDEN. Is $50,000 a sufficient increase to carry on the essential forest fire research at the Macon Laboratory?

Mr. HARPER. The current needs at the Forest Fire Laboratory in Macon, Ga., would require an increase of $200,000. The additional funds would be used for research in forest fuel flammability, fire hazard reduction, and fire energy systems. This research deals with high priority forest fire problems in the Southern and Eastern States.

The work in forest fuel flammability would contribute measurably to better firefighting by providing uniform methods for evaluation of fuels according to their ignition, fire spread, and fire intensity characteristics. Fire hazard reduction research would develop methods for reducing the chances that catastrophic fires will occur in valuable forest. Research in fire energy systems would provide a better understanding of fire behavior and how it may be predicted so that fire control can be safer and more effective.

Chairman HAYDEN. I have a letter addressed to Senator Russell by the director, agriculture experiment station, University of Georgia, which I shall place in the record.

(The letter referred to follows:)

COLLEGE OF AGRICULTURE EXPERIMENT STATIONS,
UNIVERSITY OF GEORGIA,
Athens, Ga., January 9, 1965.

Hon. RICHARD B. RUSSELL,
Senate Office Building,
Washington, D.C.

DEAR SENATOR RUSSELL: You are aware of the tremendous importance of forestry and its related industries to the total economy of Georgia. Although great strides have been made in improving the research facilities and programs in forestry in this State, there is one area of research which needs considerable additional support. This particular area has to do with wildfire control.

Several years ago a very fine laboratory was constructed near Macon for the purpose of carrying on research in fire control. This facility is being used cooperatively by the Georgia Forest Research Council and the U.S. Forest Service. Because of limited appropriations it has never been fully staffed. It is my understanding that funds for improving the staff situation in this Laboratory have been deleted from the appropriations bills in the last few Congresses, but that an item of $200,000 is requested for fiscal year 1966. This increase in the appropriation would provide for about 75 percent staffing of the Southern Forest Fire Laboratory.

We would like to ask that you give this matter your careful consideration, and if you see fit, it would be appreciated if you would lend your support to maintaining this item in the 1966 Federal appropriation.

Sincerely yours,

GEORGE H. KING,
Director, Agricultural Experiment Stations.

FOREST PRODUCTS UTILIZATION RESEARCH

Chairman HAYDEN. You are asking an increase of $489,000 in funds for forest products utilization research, indicating that the increase will be used to emphasize critical problems is distressed and underdeveloped areas such as Appalachia and the northern Great Lakes.

Can you tell the committee what particular problems peculiar to these two areas will be attacked?

Mr. HARPER. Yes; I can respond to that question.

The problem that will be emphasized mostly in the research will be that which pertains to low quality wood material, particularly hardwoods.

The low quality of wood is becoming quite a problem, as was indicated in the results of our recent study called "Timber Trends in the United States," wherein it was pointed out that there is an accumulation of low quality timber and a tightening of the high quality material.

The low quality material abounds in many of the rural areas, particularly in the Appalachian area, also to a great extent in the Lake States area. I don't want to leave the impression that there is not some good timber in these regions because there is. But utilization and market problems are more critical in that area of low quality.

Now, the increase we are requesting for products research will not be confined entirely to finding new ways and new uses for this low-quality material. We will also accelerate our work on log and tree grades, which, of course, applies to all qualities of timber.

Quality standards for the buying and selling of logs is not only important in our national forest timber sales business, but it is important generally to those who buy and sell logs on private as well as public land in the East and in the West.

That summarizes very briefly the nature of the research which we will be undertaking with the increase.

LABORATORY CONSTRUCTION AT MORGANTOWN, W. VA., AND NEW HAVEN, CONN.

Chairman HAYDEN. You are asking construction funds for the Forest Sciences Laboratory at Morgantown, W. Va., and the Forest Insect and Disease Laboratory at New Haven, Conn. Have the design and specifications for these two laboratories been finally accepted, so that they are now ready for construction bids?

Mr. HARPER. Yes. The design and engineering specifications are to the point now that we have firm estimates on the cost of construction, so we feel very sure that these estimates that we have in the budget for 1966 will do an adequate job in constructing the kind of building that we have in mind.

We will be in position to let the bids for the contracts soon after the appropriation is made available.

LABORATORIES AT OXFORD, MISS., FORT MYERS, FLA., ALBUQUERQUE, N. MEX., AND CARBONDALE, ILL.

Chairman HAYDEN. Last year, planning funds were provided for forest laboratories at Oxford, Miss.; Fort Myers, Fla.; Albuquerque, N. Mex.; and Carbondale, Ill. Have these plans been prepared in final form yet?

Mr. HARPER. For one laboratory, yes. For the others, no.

For the Fort Myers Laboratory, which was one of the smaller laboratories, we have completed the design and specifications. The plans for it are complete and in good order. We have a firm estimate of the construction cost of this laboratory. It will be on a site donated to the Government. The title to this site will revert to the donor on July 1, 1965, if construction of the laboratory is not started. However, we believe the agreement for the site might be extended if construction is imminent.

But on the others, the planning work is still going forward, and it may be as much as another 6 months or so before we will be at the stage that we will have firm estimates of the construction costs. I can provide for the record a tabulation showing status of laboratory planning for all these projects.

(The requested information follows:)

STATUS OF LABORATORY PROJECTS FOR WHICH PLANNING FUNDS HAVE BEEN PROVIDED BY CONGRESS

Laboratory location	Plans completed?	Construction funds included in fiscal year 1966 budget?
Planning funds provided in fiscal year 1964 (5 locations):		
1. Missoula, Mont.	Yes	No.
2. Morgantown, W. Va.	Yes	Yes.
3. Sewanee, Tenn.	Yes	No.
4. Houghton, Mich.	Yes	No.
5. Fort Collins, Colo.	Yes	No.
Planning funds provided in fiscal year 1965 (6 locations):		
1. New Haven, Conn.	Yes	Yes.[2]
2. Fort Myers, Fla.	Yes	No.
3. Radnor, Pa.	No.	No.
4. Oxford, Miss.	No.	No.
5. Carbondale, Ill.	No.	No.
6. Albuquerque, N. Mex.	No.	No.

[1] Amount of fund, $468,000.
[2] Amount of fund, $850,000.

LABORATORIES AT MISSOULA, MONT., SEWANEE, TENN., HOUGHTON, MICH., AND FORT COLLINS, COLO.

Chairman HAYDEN. In fiscal year 1964 funds were provided for preparation of design and specifications for laboratories at Missoula, Mont., Sewanee, Tenn., Houghton, Mich., and for the Rocky Mountain Forest Experiment Station at Fort Collins, Colo.

In its report last year, this committee stated that the laboratories are highly desirable, and that as soon as preparation of the plans was complete, the Forest Service should ask for construction funds.

Did you request that the necessary funds be included in your budget for fiscal year 1966?

Mr. HARPER. There are only two laboratories in the fiscal year 1966 budget request; namely, the one at New Haven and the one at Morgantown. The laboratories which you mentioned, for which funds were provided in fiscal year 1964 for preparation of design and specifications, are not in the fiscal year 1966 budget request.

Chairman HAYDEN. Did you ask the Department to include them in the budget?

Mr. HARPER. Yes. The Forest Service recommended to the Department that these be included in the budget.

Chairman HAYDEN. But they were not?

Mr. HARPER. No. They were not allowed in the final budget.

Chairman HAYDEN. Did the Secretary of Agriculture include these construction funds in the budget estimate for transmission to the Bureau of the Budget?

Mr. HARPER. Yes, sir. They were transmitted to the Budget Bureau by the Department.

Chairman HAYDEN. And it was the Bureau of the Budget who would not allow the funds to remain in the estimate?

Mr. HARPER. They were not allowed in the final budget formulation.

ADEQUACY OF ORIGINAL ESTIMATES

Chairman HAYDEN. Are the amounts which you indicated necessary for construction when the committee considered these projects still adequate?

Mr. HARPER. Yes. The estimates of construction costs will still hold. There has been a slight rise, I believe, in the cost of construction, but not enough so that it would materially affect the estimates.

Chairman HAYDEN. If funds were provided in fiscal year 1966, could the Forest Service advertise for bid and let the construction contracts?

Mr. HARPER. Yes, sir.

LABORATORY-OFFICE BUILDING AT RADNOR, PA.

Chairman HAYDEN. Funds were included in your current year appropriation for planning a new laboratory-office building at Radnor, Pa., to house the Northeastern Forest Experiment Station and the region office there. Would you tell me the status of this project?

Mr. CLIFF. I will ask Mr. Hendee to comment on that, Senator.

Mr. HENDEE. Mr. Chairman, we did have planning funds for this year, and the General Services Administration negotiated a contract for the design and plans. We anticipate having preliminary plans by October of this year, and final construction plans by June of 1966.

We could construct the building in fiscal year 1967, if funds are appropriated.

I might add that the preliminary estimates are running very close to the $2.8 million figure that we mentioned last year.

CONSTRUCTION AT CHARLESTON MOUNTAIN, NEV.

Chairman HAYDEN. What progress have you made with funds appropriated last year for construction at Charleston Mountain in Nevada?

Mr. CLIFF. Mr. Greeley?

Mr. GREELEY. Senator, last year in connection with the Charleston Mountain project we made a commitment that we would build 50 family units. We did that. In fact, we bettered that a little bit. We built the 50 family units, and did more than that. We got in about 85 family units, and got in some addition to the water system and did some additional improvements on the roads.

That is shaping up into a very nice facility.

FOREST PRODUCTS LABORATORY, MADISON, WIS.

Senator PROXMIRE. Mr. Harper, as you know, I am very interested in the Forest Products Lab in Madison. Has there been any planning on what to do with the main building after the move to the new building? As I recall, it took 2 years for the GSA architects to complete the design for the new building.

Mr. HARPER. Yes, we have done preliminary planning work. We haven't gotten into the architectural design and the detailed engineering which is quite detailed, but we have formulated an overall plan. As a matter of fact, we did this 2 or 3 years ago when we decided to construct the improvements needed in our Forests Products Lab-

oratory in stages; the first stage being the wing which is now under construction, or rather contract for it will be let soon, the second stage being the remodeling and updating of the existing older part of the facilities which we will be moving part of our personnel out into the new wing as soon as it is constructed.

And then the third stage being still a third wing that we would construct. Now, with respect to the updating and remodeling of the present building that our personnel are now in, we estimate that this job will cost approximately $2.75 million and that the architectural, engineering, and other planning that will be necessary, will cost $190,000.

Senator PROXMIRE. Why is there no money being appropriated to provide for renovation planning?

Mr. HARPER. I think that this general approach, which I just outlined, was accepted by the two committees as being a logical approach and it was agreed that we would go ahead with the first stage. But, it has been my intention that we would proceed with the second stage, which is the remodeling of the old building, just as soon as we were able to do so.

Senator PROXMIRE. Can you make an estimate as to how much is needed to initiate planning for renovation?

Mr. HARPER. $190,000.

FOREST RESEARCH STATION, LA CROSSE, WIS.

Senator PROXMIRE. I just have one other question on another facility, if the chairman would permit.

What is the status of the forest research station at La Crosse, Wis.? I understand that there is quite a bit of justification for an increase of funds of $150,000. Are you familiar with that?

Mr. HARPER. Yes, I can explain the situation at La Crosse.

We undertook a research program at La Crosse some years back at the insistence of the Conservation Department of Wisconsin and other agencies in neighboring States. They were all experiencing a common problem in a rather extensive area referred to as the "driftless area" where erosion is spectacular. The forest cover has been removed from quite a bit of the land area. It is difficult to restock these denuded lands with trees because of the accelerated erosion. Meanwhile, flash floods are also quite prevalent.

The conservation department purchased an experimental forest called the Cooley Experimental Forest near La Crosse for our use. We have a small program underway at this location at the present time.

I must confess that it is too small to really do the job that ought to be done and we have had discussions with a number of the agencies involved who depend upon our research for guidance in their action programs as to what could be done about it. All I could agree to was that we would try to take care of this problem as soon as the financial situation would permit.

Senator PROXMIRE. And you would give it reasonably good priority in the future?

Mr. HARPER. Yes. I would.

Senator PROXMIRE. Certainly it is an important project for us and we feel pretty neglected sometimes in Wisconsin.

Mr. HARPER. We have had considerable communication with a number of agencies and individuals in your State as well as in some of the other States on this problem.

Senator PROXMIRE. Thank you very much, Mr. Chairman.

ADDITION TO LABORATORY AT ATHENS, GA.

Chairman HAYDEN. Senator Russell has received a letter from the president of the University of Georgia urging an addition to the Forestry Sciences Laboratory at Athens to accomplish high-priority research on southeastern forestry problems.

I will place that letter and a statement furnished to Senator Russell in the record.

(The information referred to follows:)

FORESTRY SCIENCES LABORATORY, ATHENS, GA.

THE UNIVERSITY OF GEORGIA,
Athens, February 1, 1965.

Hon. RICHARD B. RUSSELL,
U.S. Senate,
Washington, D.C.

DEAR SENATOR RUSSELL: The Forestry Sciences Laboratory of the U.S. Forest Service, located on the university campus and occupied in 1963, was in large part due to your interest and efforts in providing research facilities in this important industry in the State of George and the Southeast. You were the first to suggest, in the early 1950's, a coordination of Federal and university research facilities and a cooperative working relationship with professional research personnel. The University of Georgia School of Forestry and the U.S. Forest Service, as a result of your urging, have developed a cooperative pattern of working together that is being emulated in many other Federal-university relationships.

You will be interested to know that the university is greatly expanding its forestry research program, with emphasis upon master and Ph. D. graduate work. We are building a $1,500,000 plant as a part of the school of forestry. Practically all of this facility will be devoted to forestry research. As you know, the forestry school facilities, both old and new, are almost adjacent to the Forestry Sciences Laboratory which you dedicated in 1963.

Last week I had a conference with Dean Herrick of our school of forestry, and other professional personnel who are interested in encouraging the U.S. Forest Service to expand its present research facility. It is my understanding that the Forest Service planning personnel have formulated long-range goals that envision a million-dollar facility to provide for a greatly expanded program of research in connection with the facility opened in 1963. It is their and Dean Herrick's vision that a new million-dollar research addition to the present Forest Service facility and the $1,500,000 facility which the university is building, would provide the largest and most complete forest research installation on any university campus in America.

I believe the completion of these facilities would carry out the vision that you have held for several years to the effect that we would have on this campus the largest cooperative forest research program in the Nation.

I am planning to be in Washington next Thursday or Friday and hope to drop by and see you. It is always a pleasure to work with you in trying to provide better opportunities in research and education for our people and the people of this region.

With kindest personal regards, I am,

Very truly yours,

O. C. ADERHOLD.

NEED FOR LABORATORY ADDITION

The following is in response to Senator Russell's request for information on the need for an additional wing of the Forestry Sciences Laboratory at Athens.

There are two facts of major significance that explain why this project should be undertaken as soon as feasible. First is the fact of overcrowding of the present structure. We now have 29 scientists housed in the Laboratory. This is five above the optimum capacity. In addition there are 20 supporting personnel. To help accommodate these people, we have recently placed temporary partitions in three offices and the conference room to provide additional office space. There is no way of making more laboratory space available to the individual scientist.

These extra people are part of the group that had been scheduled to move in from other locations when the second wing was built. The station acted ahead of time because we believed the advantages outweighed the disadvantages. In three of the five cases, we had an exceptional opportunity for collaboration with university scientists. The other two were part of a unit already at Athens and we felt that it was essential to put the entire team together now, even at the expense of overcrowding.

This does not tell the whole story, however. The station has seven additional scientists now attached to the station's main headquarters in Asheville, N.C., who should be at Athens and whom we plan to transfer as soon as laboratory space at Athens is available.

There is a second factor that explains the need for a new laboratory wing at Athens. This is the necessity for intensifying the attack, through research, on more of the critical forest resource problems that stand in the way of further advancement of the rural economy of the southern Appalachian and Piedmont regions.

As you know, in Georgia and adjoining States forest land occupies very large areas and is inextricably tied to the well-being of the region. Yet too high a proportion of this forest is producing at a rate far below its potential. Extensive investment in forest betterment could provide substantial employment while at the same time laying the foundation for an expanded forest products industry in the future. But there are many complex biological and economic problems that prevent the development of the necesary technology. We do not now have the solutions to those problems, and the present rate of research effort should be accelerated.

The planned capacity of the additional laboratory space at Athens is in accordance with needs to implement the projected program for this location which was visualized in the national forestry research program submitted to the Congress by the Secretary of Agriculture last year. The national forestry research program covers the period fiscal years 1963–72.

VALUE OF LABORATORY ADDITION

Chairman HAYDEN. In your opinion, would laboratory facilities such as are proposed be of value?

Mr. CLIFF. Let us ask Dr. Harper to comment on that.

Mr. HARPER. Yes, Mr. Chairman; I would say very definitely they would be of value.

This is one of the research facilities which is planned for in our national forestry research program, which was sent up to the Congress by the Secretary of Agriculture.

The cost of this Laboratory, as I recall our estimate, would be about $1 million. This would be the second stage of a two-stage construction program which we have planned at Athens, Ga.

Chairman HAYDEN. How much would be required for preparation of plans and specifications?

Mr. HARPER. I will have a look that up and insert it in the record. I do not recall the figure.

Chairman HAYDEN. Please place in the record a statement regarding the estimated cost and uses of the Laboratory.

Mr. HARPER. Yes, sir.

(The statement referred to follows:)

RESEARCH AT LABORATORY ADDITION

The addition to the Forestry Sciences Laboratory, Athens, Ga., would be used for the following research: (1) Work on problems of bark beetles and defoliating insects that heavily damage southeastern forest stands, (2) Improvement of control measures for rust diseases and diseases in forest tree nurseries, (3) Development of techniques for planting hardwoods, and (4) Strengthening of utilization and marketing of southeastern pines and hardwoods. The estimated cost of construction is $1 million. Architectural design and plans are estimated to cost $75,000.

While we have made good progress in solving some of the more critical forest insect and disease problems that plague forest landowners and land managers in the Southeast, a number of high priority problems need additional attention. The southern pine bark beetle still constitutes a major threat to forestry in the South. This is the same insect that virtually destroyed the pine forests of Honduras in the last 18 months. It has killed the trees on 7½ million acres in this short period. We do not yet know what triggers epidemics of the beetles. Perhaps the reproduction potential suddenly increases, new genetic strains may develop, or bark beetle diseases may suddenly decline. Whatever may be the cause, we are not likely to develop a satisfactory control without a stronger research attack on these problems.

In the Athens Laboratory addition, we would also plan to intensify research on insects that defoliate trees. One of the most damaging defoliator groups is the saw flies which are potential tree killers. Virtually no work is underway now on these pests. Research should be stepped up on the elm spanworm, another defoliator. Prevention and control of hardwood borers need additional attention because these insects cause millions of board feet of quality timber to be degraded every year.

Research on forest tree diseases should be strengthened when additional laboratory facilities are available at Athens. Of particular importance is the need to get ahead on prevention and control of cone rusts which damage seed supplies. The large area of seed orchards of genetically improved pines and of superior seed-producing stands now established in Georgia and other Southern States can be seriously damaged unless cone rusts are controlled. The seed from these sources is valuable and vital to the future success of pine planting programs. Further improvement in the control of forest nursery diseases is needed, such as the black rot of pine seedlings. Piedmont hardwood trees are highly defective and much more information must be developed to lead to reduction of cull in these forests.

One area of research for which we need additional laboratory facilities deals with improved timber production techniques, especially development of methods for growing and planting hardwood seedlings and improving the growing stock through selection, propagating, and other tree improvement measures. The southeastern Piedmont region can grow high-quality hardwoods such as tulip poplar, sycamore, and some species of oaks suitable for veneer, furniture, and other uses. But no one has done much work on improving the strains of trees used and developing planting techniques.

Great strides are needed in solving the many forest products marketing and utilization problems that are obstacles to a full and profitable use of the forests. Development of new or expanded markets for hardwoods, especially those of low quality, is needed. Along with better markets and development of improved marketing opportunities is the need for more research on utilization. New uses or improved uses of the available low-quality timber must be worked out. This type of wood utilization research at Athens would supplement that at the U.S. Forest Products Laboratory at Madison, Wis. Both the marketing and utilization studies would be especially aimed at solving problems encountered in Appalachia as well as the Piedmont area of the Southeast.

STATUS OF CONSTRUCTION

Chairman HAYDEN. Last year you prepared tabulations showing the status of the construction accomplished so far in your planned program for laboratory facilities. Could you bring these tabulations up to date for the record?

Mr. HARPER. We will be glad to do this and provide the two revised tabulations for the record.

(The information referred to follow:)

CURRENT STATUS OF THE CONSTRUCTION PROJECTED IN "A NATIONAL FORESTRY RESEARCH PROGRAM," FISCAL YEARS 1963–72 (FEBRUARY 1965)

	Number of locations
Locations where facilities are adequate; no construction required	13
Locations where facilities have been added by recent construction; no further construction required	12
Locations where laboratory needs have been partially met by recent 1st stage of construction planned; further construction required	23
Locations where facilities are inadequate; no construction provided to date; construction required	32
Total	80

STATUS OF FUNDING OF CONSTRUCTION PROJECTED IN A NATIONAL FORESTRY RESEARCH PROGRAM

	Amounts
Funds already provided:	
Fiscal years:	
1959	$2,500,000
1960	None
1961	1,075,000
1962	5,195,000
1963	2,550,000
1964	635,000
1965	4,001,000
Subtotal	15,956,000
Funds in fiscal year 1966 budget estimate	1,318,000
Subtotal	[1] 17,274,000
Additional funds required through fiscal year 1972	37,582,000
Total	54,856,000

[1] Represents 32 percent of total construction as planned in "A national forestry research program."

FORESTRY RESEARCH PROGRAM

Chairman HAYDEN. What expansions did the projected forestry research program visualize as needed for fiscal year 1966 and subsequent years of the plan?

Mr. HARPER. The average annual buildup of the research work that was projected for fiscal year 1966 and subsequent years through 1972 is $6.5 million. In addition, the projected funds for construction of research facilities are an average per year of $5.5 million for this same period. These two categories combined represent an average annual planned increase of $12 million.

LABORATORY CONSTRUCTION FUNDS

Chairman HAYDEN. I have received a number of communications urging appropriation of construction funds for laboratories for which planning funds have been appropriated in the past. I will insert these in the record at this point.

(The communications referred to follow:)

FOREST SCIENCES LABORATORY, MISSOULA, MONT.

LETTER FROM HON. MIKE MANSFIELD, A U.S. SENATOR FROM THE STATE OF MONTANA

U.S. SENATE,
OFFICE OF THE MAJORITY LEADER,
Washington, D.C., February 23, 1965.

Hon. CARL HAYDEN,
Chairman, Committee on Appropriations,
U.S. Senate.
(Attention: Paul Eaton).

DEAR MR. CHAIRMAN: As you will recall, the U.S. Forest Service is planning the construction of several new forest research laboratories. Last year, construction funds were deferred until such time as planning and preconstruction work was completed.

The budget submitted for fiscal year 1966 does not include construction moneys. It would appear that the planning should be completed by now. As you know, I am particularly interested in the U.S. Forest Research Laboratory to be constructed on the campus of the University of Montana at Missoula. It is my understanding that the Forest Service officials will be before your Subcommittee on Interior Appropriations later this week. I would appreciate your discussing this with the departmental witnesses making specific inquiries concerning the status of the plans for the Missoula Laboratory.

Thanking you for your cooperation, and with best personal wishes, I am,
Sincerely yours,

MIKE MANSFIELD.

LETTER FROM ROBERT JOHNS, PRESIDENT, MONTANA STATE UNIVERSITY

MONTANA STATE UNIVERSITY,
Missoula, Mont., February 15, 1965.

Hon. MIKE MANSFIELD,
Majority Leader, U.S. Senate,
Washington, D.C.

DEAR SENATOR MANSFIELD: I am writing to request your aid with regard to the U.S. Forest Service Research Laboratory scheduled for construction on the Montana State University campus in proximity to the school of forestry and the forest and conservation experiment station. It is my understanding that funds for this building are not included in the 1965–66 Federal budget.

An expanding program of forestry research in Montana and the Northwest is of unquestioned importance to the State and the Nation. The need for more intensive and extensive investigations in forestry and the wood-using industries is particularly pressing in western Montana, where much of the economy is forest based. This need has been recognized for some time, and there have been a number of preliminary developments, including the recent increase in State appropriations for the experiment station and grant funds to the State universities under the Federal McIntire-Stennis program. The cooperative effort of the Forest Service and Montana State University to further strengthen the forestry research program in Montana requires the primary implementation of a new laboratory facility, for which reason I emphasize the urgency of completing the planned Forest Service Research Laboratory as soon as possible.

May I, therefore, ask that you consider proposing a separate item in the Federal budget to cover the cost of this construction. Your action in the matter will be greatly appreciated.

Please let me know if I can provide you with any assistance or information that will be of value in furthering this mutually beneficial program.

Sincerely yours,

ROBERT JOHNS, *President.*

SILVICULTURE LABORATORY, SEWANEE, TENN.

LETTER FROM HON. ALBERT GORE, A U.S. SENATOR FROM THE STATE OF TENNESSEE

U.S. SENATE,
COMMITTEE OF FOREIGN RELATIONS,
Washington, D.C., February 18, 1965.

Hon. CARL HAYDEN,
Chairman, Subcommittee on Interior, Committee on Appropriations,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: It has come to my attention that funds for the construction of a silviculture laboratory at Sewanee, Tenn., were not included in the budget submitted by President Johnson for fiscal year 1966.

I would like to take this opportunity to stress the importance of this project to Tennessee and the surrounding area and to urge appropriation of the funds necessary for construction.

I hope your subcommittee will give careful consideration to including the Silviculture Laboratory in legislation appropriating funds for the Forest Service.

Sincerely yours,

ALBERT GORE.

STATEMENT OF CHARLES E. CHESTON, CHAIRMAN, DEPARTMENT OF FORESTRY, UNIVERSITY OF THE SOUTH

Headquarters for this U.S. Forest Service project are at Sewanee, Tenn., on the campus of the University of the South, a major cooperator. Primary experimental areas are 10,000 acres of university land surrounding Sewanee and the 2,600-acre Flat Top Experimental Forest near Birmingham, Ala. Cooperative studies are also installed on industry and other private lands, State and National forests, and other public lands.

The Sewanee project, the only Forest Service research unit in Tennessee, is responsible for research on the problems of growing timber on the 11 million acres of the Cumberland Plateau and Highland Rim regions of central Tennessee and northern Alabama. The aim of this research program is to provide information which will enable forest landowners and managers to select and grow those tree species capable of yielding the greatest returns on the variety of soils in these regions.

Research by the project has produced substantial results, which have been reported in 88 publications. The various field studies have been visited by hundreds of interested landowners, foresters, and many others. While field study areas were adequate for this beginning research, the work has now reached the stage where more fundamental studies are also needed to solve the complex problems of establishing and culturing the many species, especially hardwoods, that are adapted to this locality. For this essential basic research, the project now vitally needs laboratory facilities and equipment, a greenhouse, and office space for scientists.

In 1963, Congress appropriated $18,500 for planning a modern silviculture laboratory. Architect's plans have been drawn and specifications prepared. Copies are on file in the Washington office of the Forest Service, the Southern Forest Experiment Station in New Orleans, and at Sewanee.

An excellent campus building site has been leased to the Forest Service by the University of the South. The cost of the Laboratory is estimated to be $190,000.

FOREST ENGINEERING LABORATORY, HOUGHTON, MICH.

LETTER FROM R. L. SMITH, PRESIDENT, MICHIGAN TECHNOLOGICAL UNIVERSITY

MICHIGAN TECHNOLOGICAL UNIVERSITY,
Houghton, Mich., January 28, 1965.

Hon. CARL HAYDEN,
Chairman, Senate Appropriations Committee,
Senate Office Building, Washington, D.C.

DEAR SENATOR HAYDEN: In 1963, the Congress appropriated $28,000 for the planning of a building to house the Houghton Forest Engineering Laboratory of the U.S. Forest Service on this campus. The university has made available a choice tract of land, and has provided temporary quarters for the skeleton staff of the Laboratory.

It is important to the forest-based industries of this region that the program of the Forest Engineering Laboratory be implemented without delay. It is also important to this university since we are in the advanced stages of planning construction of facilities to house our institute of wood research and our academic department of forestry on a site adjacent to that on which the Forest Engineering Laboratory is to be built. When completed, this will be a complex of agencies staffed and equipped to provide essential services to that segment of our northern economy which is based on our most important resource, the forests.

We wish to urge that funds for construction of the building to house the Houghton Forest Engineering Laboratory of the U.S. Forest Service be included in the appropriation bill which your committee will be considering in the near future. I have written to Senator Hart asking him to make the necessary arrangements so that a delegation representing the university and the industrial community can testify before your Subcommittee on Interior and Related Agencies at the proper time. Your cooperation in this vital matter will be deeply appreciated by the people of this region.

Sincerely,

R. L. SMITH, *President.*

FOREST RANGE MANAGEMENT LABORATORY, FORT MYERS, FLA.

LETTER FROM FRANK B. WATSON, JR.

ROBERTS, WATSON, TAYLOR, & FRIDAY,
ATTORNEYS AT LAW,
Fort Myers, Fla., February 1, 1965.

Re Florida Range Management Laboratory, Fort Myers, Fla.

Hon. SPESSARD L. HOLLAND,
Senate Office Building,
Washington, D.C.

DEAR SENATOR: I have been advised that the above facility located outside Fort Myers, Fla., for the U.S. Forest Service is ready for construction; that is, all of the planning has been completed. Apparently $200,000 was set forth in the budget request for the construction for this laboratory which I understand has been rated by the U.S. Forest Service as having top priority in the Southeast. Now it appears that in some economy move this construction money of $200,000 has been cut out by the Bureau of the Budget.

Since forestry is the "sister" of agriculture and both are extremely essential to the welfare of southwest Florida, I would appreciate you using your influence to get the $200,000 construction money back into the budget through the Appropriations Committee. Our particular area is ideal for the location of the Laboratory and such a project is of considerable importance to our area.

I believe you have in your office the architect's rendering of the Laboratory and that you have had the opportunity personally to observe the site from the air. It has been represented to me that it is located on a State highway and easily accessible to persons needing the information provided by the Laboratory.

I hope that you will exert your great influence in the Senate on reinstating this project. My partner, Chuck Roberts, is in Washington now attending some Federal savings and loan association functions and I hope that both he, you and your wife, and other Floridians are not being handicapped by the cold wave presently striking Washington. We are enjoying a very warm temperature here in Fort Myers today.

Very truly yours,

FRANK B. WATSON, Jr.

RESOLUTION OF FLORIDA FORESTRY ASSOCIATION

Whereas there exists in the southern half of the State of Florida a vast acreage of underdeveloped forest and rangeland which would, with proper management, contribute untold benefits to the economy of the State and Nation; and

Whereas there is an urgent need for fundamental research in south Florida in forestry, range management, and wildlife in order for these resources to make their greatest contribution to the economy; and

Whereas in the year 1951 through the cooperative efforts of two landowners, the U.S. Forest Service, through its Southeastern Forest Experiment Station, and the Florida forest service, forest research was begun in south Florida as a one-man project; and

Whereas, from the aforesaid meager beginning, forest research has generated much interest among landowners and others in the possibilities of the rebirth of forest products industries in south Florida; and

Whereas this effort has now been expanded to include many landowners and civic leaders, resulting in the broadening of the program to encompass range management for cattle and wildlife; and

Whereas, while much has been accomplished with the funds and manpower available, further progress is seriously handicapped by the lack of proper laboratory facilities for fundamental research; and

Whereas a landowner near Fort Myers, Lee County, Fla. has donated a site to the U.S. Forest Service for a Forest Range Management Laboratory; and

Whereas the Congress provided planning funds in the current fiscal year for said laboratory, and said plans are now completed, approved, and on record in the office of the U.S. Forest Service, Washington, D.C.; and

Whereas the U.S. Forest Service has placed the construction of the Forest Range Management Laboratory for south Florida in top priority for laboratory facilities in the Southeast; and

Whereas the construction of this aforesaid Laboratory will greatly accelerate the economic development of south Florida and will contribute much to the conservation of our natural resources: Now, therefore, be it

Resolved by the board of directors of the Florida Forestry Association (in behalf of its entire membership), That the Congress of the United States be respectfully requested to provide an appropriation of $200,000 in the U.S. Department of Agriculture, Forest Service budget for fiscal year beginning July 1, 1965, for the construction of the Forest Range Management Laboratory near Fort Myers, Fla.: Further be it

Resolved, That the president of the Florida Forestry Association be directed to furnish to each Member of the Florida delegation in the Congress of the United States a copy of this Resolution.

Adopted this 4th day of February, 1965, by the board of directors of the Florida Forestry Association meeting in open session at Tallahassee, Fla.

FLORIDA FORESTRY ASSOCIATION,
TALLAHASSEE, FLA.
By B. E. BRICE, *President.*

Attest:

KENT VAN CLEAVE, *Secretary.*

WOOD PRODUCTS MARKETING AND APPLIED UTILIZATION LABORATORY, DULUTH, MINN.

LETTER FROM HON. EUGENE J. MCCARTHY AND HON. WALTER F. MONDALE, SENATORS FROM MINNESOTA

U.S. SENATE,
COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES,
February 24, 1965.

Hon. CARL HAYDEN,
Chairman, Interior Subcommittee on Appropriations,
Senate Office Building, Washington, D.C.

DEAR SENATOR HAYDEN: As you know, regional research on the utilization and marketing of timber from the northern Lake States is currently centered at the old site of the University of Minnesota at Duluth, Minn.

A facility is urgently needed to house this research and the closely associated studies on better uses for wood to stimulate markets for the improvement of the economy of the region. The building, estimated to cost $420,000, would be located on the new site of the University of Minnesota at Duluth. Architectural plans and design are estimated to cost $35,000.

The Duluth branch is rapidly adding to its facilities at a new site and abandoning outmoded buildings at the old location in another part of the city. These old buildings are being disposed of as the university units occupying them shift to the new campus. The timber marketing research is presently housed with other groups in one of the outmoded buildings. This is a temporary arrangement of uncertain duration, lacking the environment, associations, and modern facilities needed for productive research.

Three-fourths of the land area in the northern Lake States is forested, almost all of it capable of growing commercial crops of timber. The forests consist primarily of second-growth stands and there are surplus supplies of timber for present markets. There are large surpluses of aspen which tend to deteriorate if not marketed promptly when mature. Balsam fir has a similar tendency. Thus, the failure to harvest the allowable cut from these forests results in losses of potentially valuable timber resources. Lack of timber markets contributes to the inability of this region and the northern Lake States to share in our general economic prosperity. Manufacture of nonwood commodities is limited and offers small promise of future development at this time. New and expanded markets for forest products offer one of the best means of expanding employment opportunities, with immediate favorable economic gains for the northern Great Lakes States.

We respectfully urge that the subcommittee give careful consideration to the inclusion of this appropriation in its report. Funds for staff have already been appropriated in the past, and last year moneys for planning and design were approved by this subcommittee. We submit that the same considerations that were obtained then hold true today.

Very truly yours,

EUGENE J. MCCARTHY.
WALTER F. MONDALE.

STATEMENT BY HON. EUGENE J. MCCARTHY AND HON. WALTER F. MONDALE, U.S. SENATORS FROM THE STATE OF MINNESOTA

As you know, regional research on the utilization and marketing of timber from the northern Lake States is currently centered at the old site of the University of Minnesota at Duluth, Minn. Regional research on marketing of timber from the northern Lake States is centered at this location.

There are large surpluses of aspen which tend to deteriorate if not marketed promptly when it is mature. Balsam fir has a similar tendency. Thus, the failure to harvest the allowable cut from these forests results in losses of potentially valuable timber resources. Lack of timber markets contributes to the chronically depressed overall economy of this area. Manufacture of nonwood commodities is limited and offers small promise of future development. New and expanded markets for forest products offer one of the best means of expanding employment opportunities.

Associated with development of marketing opportunities is the need for new or expanded uses for available wood supplies. Better information on the characteristics of the wood from tree species in the region is urgent. Needed also is a strong effort in product development to better adapt Lake States wood to existing and potential markets.

Establishing expanded markets for wood products from the northern forests is a leading economic problem in the northern Lake States. More timber is growing annually than is being cut. This trend will increase unless there is expansion of timber used by existing companies and the establishment of a new wood-based industry. The need for new uses of wood and for new products is obvious if the timber resource is to provide employment. This was brought to the attention of this distinguished subcommittee last session, and it is still true today.

Throughout the area, the present harvest of timber could be expanded. This is a problem for public and private forest owners alike. For example, statistics for the eight national forests in Lake States show that in 1961 the total cut could have been almost double that which was harvested—1,284,000 cords versus 679,380 cords.

This lack of markets, which also applies to the products of private owners' lands, prevents the use of a resource which could help to bolster economic opportunities. In addition to the current situation, the lack of markets now will affect the future productivity of many timber stands. Necessary thinnings and stand improvement cuts can be made only when there is a market for sale of the products cut.

The northern Lakes States can ill afford the luxury of underused timber resource. Unemployment averaging 10 percent or more of the labor force is common throughout the area. In recent years, most of the 80 northern Lake States counties have at one time or another been listed as "depressed labor areas." The need to provide new employment is obvious. Whether or not these

areas can gain a larger share of the national prosperity will depend, to a considerable extent, on the more complete utilization of the available timber resource.

Accordingly, to meet this objective, we propose the grant of sufficient appropriations for facilities suitable to house a Federal Wood-Products Marketing and Applied Utilization Laboratory in northeastern Minnesota. Such a laboratory would serve not only northern Minnesota, but the entire northern Lake States area—northern Wisconsin and northern Michigan as well.

In the fall of 1963, a similar-type laboratory was officially dedicated at Princeton, W. Va. This laboratory, the research facility of the Northeastern Forest Experiment States, was established by the U.S. Forest Service for the purpose of conducting research to find ways in which local forest resources and forest industries could make a greater contribution to the social and economic welfare of the people of the Appalachian region.

We need a similar-type project and facility in the northern Lake States. Northeastern Minnesota would make an excellent location. The laboratory could serve as a necessary link in the wood products research and developmental chain. Fundamental and basic research in wood products has been carried out for more than 50 years at the U.S. Forest Products Laboratory at Madison, Wis. This Laboratory is a national institution for wood utilization research. Here basic research is done in wood products, and the results are of national and international importance.

The proposed Wood-Products Marketing and Applied Utilization Laboratory facility in northeastern Minnesota would not duplicate any other functions of either the Forest Products Laboratory at Madison or forestry schools in Minnesota, Wisconsin, or Michigan. Rather, it would serve as an operational or developmental research unit—working with the wood processors themselves, helping to isolate specific marketing and utilization problems, bringing new techniques and new processes to the small wood products, and analyzing economic and marketing factors so as to suggest ways to expand the processing of wood products for the entire northern Lake States region.

The need for such assistance is critical to thousands of small wood producers and processors who otherwise would be at a loss for technical assistance and help.

The project envisioned calls for the establishment of a major regional project in northeastern Minnesota, where a staff of wood marketing and utilization technicians would specialize in finding new data on the timber resource, study properties and performances in use of wood products made from northern Lake States tree species, and develop and test new wood products. To do this research well and efficiently, it is necessary for these scientists and technicians to have the up-to-date facilities necessary for productive research.

Their work would provide up-to-date and current information on timber resources, and their availability by specific location, on the location and potential of markets for various forest products, on transportation facilities and ways to transport forest products more economically. The laboratory would also provide information on new processes and new wood products which offer potential for production in northern Minnesota and in the northern Lake States. All of this work would be done in close cooperation with the local wood users, the community officials, State conservation, and business development agencies, area redevelopment officials, and others interested in expanding economic opportunities in the northern Lake States area.

If the problem of marketing more timber from the Lake States' forests could be generalized in one sentence, it would be that, "consumers (manufacturers or other users) are reluctant to use northern Lake States timber products because they are uncertain or uninformed of its supply, and product suitability, and that in turn the majority of suppliers are unorganized and inefficient because the sluggish demand has not created economic opportunities that attract well-financed and capable individuals to be manufacturers." There are exceptions, but this situation cited is common throughout the area.

Some of the types of work that should be done are—

(1) Timber resource analysis—more detailed data as to specific location, available size classes, species, and qualities that can be made in the usual forest survey reports.

(2) Analysis of other economic factors influencing production costs—transportation, labor, water availability, credit sources, etc.

(3) Investigation of markets for specific products, i.e., the acceptance of balsam fir studs by manufacturers and contractors in northeastern Minnesota and the Twin Cities. For example, a project could look into the potential use of balsam fir dimension stock in northern Minnesota. At the present time, northern Minnesota has over a million and a quarter acres of spruce balsam fir forest. Balsam fir, one of its main components, is a problem specie. A complete examination of this problem could suggest ways to expand the use of balsam fir stock.

Northern white cedar stands occupy almost one-quarter of a million acres in northern Minnesota. The present market is limited to fenceposts. Much more could be harvested if expanded markets were available. This material makes a very decorative wall paneling. A study in this area would also enhance the possibility of expanded markets for this product. Aspen, the more abundant tree specie in northern Minnesota, is vastly underused. Required testing and performance evaluation could lead to a much larger acceptance of aspen lumber in a large-growing pallet market in the Midwest. Other areas which could prove to be very profitable in terms of utilization of forest products in the northern Lake States region are in the manufacturing of particleboard. The use of particleboard (panel made from dry wood particles which have been coated with a binder) by American industry is growing at a phenomal rate. Particleboard is used by various manufacturers of furniture parts, house-trailer parts, sporting goods, games, tabletops, etc., has grown tremendously. An analysis of this market could prove to be very useful in the expansion of this fast-growing industry.

Such a laboratory could also look into new opportunities in marketing manufactured summer homes and cottages. The port of Duluth Superior now supplies northern Minnesota and northern Wisconsin with an avenue to world markets. With rising standards of living in many previously underdeveloped parts of the world, new consumer markets are waiting to be satisfied.

One such market area lies in prebuilt, manufactured houses. One of the country's largest such manufacturers already has designed a prototype small dwelling which they plan to sell in various South American countries.

Research studies from the proposed laboratory would provide information which could be used to expand the use of forest products in the northern Lake States region.

These are but a few of the potential opportunities which could be realized if more effort were applied to researching new markets and new products for the timber resources of the northern Lake States forests. Others could be listed. The extent to which these products could be pursued will depend upon the technical staff and facilities available. An expanded Forest Service marketing applied utilization project in northeastern Minnesota could help solve the problem of increasing the productive use and economic contribution of northern Lake States forests.

In summary, we feel that the establishment and staffing of a Forest Service Wood Products Marketing and Applied Utilization Laboratory in northeastern Minnesota would be a significant move toward reducing the regional problem of insufficient economic opportunity and chronic underemployment. Similar to the West Virginia laboratory's role in the Appalachian area, the proposed laboratory would provide a key which would unlock the underutilized forest resources of the northern Lake States. We have more than 50 million acres of forested land in the Lake States. We have the wood, we have the labor, and we have the interest in expanding the use of this valuable resource.

The minimum estimates for the construction of a suitable laboratory would be $420,000. It would house study rooms, conference rooms, library, test and evaluation laboratory room, and necessary storage rooms. The staff would consist of approximately 15 professional technicians and scientists, together with an equal number of nonprofessional employees. This is a small investment in the economic future of the forested regions of northern Minnesota and the northern Lake States. It should pay large dividends. Among the requisites for the project headquarters are: (1) a reasonably central location in a northern Lake State region; (2) an environment in terms of living conditions that would permit recruiting the scientists required for the staff; and (3) access to scientists and supporting facilities in related fields such as are provided by a university campus.

We feel that a site in northeastern Minnesota would fit the outlined requirements. The University of Minnesota at Duluth can provide the support necessary for the success of an ongoing project as proposed in this statement. The uni-

versity is a growing institution of 3,400 students and 340 faculty and staff. Its departments of business, economics, geography, industrial education, engineering, and mathematics provide skills and facilities that can be drawn upon to aid the wood products program at the station. The administration and the faculty have been most helpful and interested in the marketing research that has been done to date.

We respectfully ask that the Interior Subcommittee on Appropriations add to the appropriations bill $420,000 for the construction of this needed research facility.

STATE AND PRIVATE FORESTRY COOPERATIVE PROGRAM

Chairman HAYDEN. You propose an increase of $500,000 for cooperation in "Forest management and processing" under your State and private forestry cooperative program. In connection with this program, will you explain to the committee the present status of your timber trends study, and any new information or recommendations which may result from this review of the timber situation in the United States?

Mr. CLIFF. Mr. Chairman, I commented very briefly on the timber trend study in my opening remarks. This study brings us up-to-date information on the national timber situation, which I indicated was more promising.

There still remains a big challenge ahead if we are to meet the timber needs of this country in the years ahead. A little over three-fourths of all of the commercial timberland in the country is privately owned or is owned by States and private owners, primarily privately owned.

About 53 percent is owned by small timberland owners. It is on this 53 percent that the progress in forestry is lagging. It is where private forest landowners need the kind of help that our cooperative forest management program provides.

These ownerships are where we are meeting wood quality problems. They have marketing problems. They need help in finding markets, in improving their woodland, and improving income.

This is a cooperative program. It is a matching program with the States. It provides foresters on the State payroll to work with these private landowners to help them with their forestry programs, to do a better job of not only timber management, but management of the lands for recreation and other purposes.

This half million dollar increase is fully supported by the findings of the timber trend study. In fact, the timber trend study indicates that ultimately we should go much further.

The Congress has authorized a $5 million program in "Cooperative forest management." Our present financing is considerably below that. It never has equaled the authorization.

The States more than match this fund, and they will be able to match the increase.

We are getting these services to small forest landowners and wood processors in the neighborhood of 100,000 timber landowners a year, and including some timber processors, which is less than 2 percent of the people that need it. And there is certainly justification for expansion in this amount.

Now, Mr. Rasmussen, who is the Deputy Chief for State and Private Forestry, is relatively new to our staff. He may want to comment further on it.

But I feel so strongly on this one myself that I wanted to point out that I think this is one area where we must move forward promptly.

Mr. RASMUSSEN. I think Mr. Cliff has adequately covered this.

Thank you.

FOREST ROADS AND TRAILS

Chairman HAYDEN. It is estimated that in fiscal year 1966 $78,672,000 will be needed to liquidate obligations incurred for construction and maintenance of forest roads and trails, and for purchase of access roads.

The justification of this estimate will be included in the record.

(The justification referred to follows:)

Appropriation Act, 1965	$70,300,000
Proposed supplemental, 1965, for increased pay costs	1,172,000
Base for 1966	71,472,000
Budget estimate, 1966	78,672,000
Increase	+7,200,000

This appropriation provides for the liquidation of obligations incurred for the construction and maintenance of forest roads and trails (and the purchase of access roads) pursuant to the authorization contained in the Federal Highway Act of 1964. An appropriation of $78,672,000 for 1966 will provide sufficient cash to liquidate prior year obligations and obligations planned for fiscal year 1966 which must be paid by June 30, 1966.

Authorizations for appropriations [1]

	Construction	Maintenance	Total	Funded	Unfunded
Fiscal year:					
1964	$56,300,000	$13,700,000	$70,000,000	$70,000,000	
1965	66,800,000	18,200,000	85,000,000	[2] 48,508,000	[3] 36,492,000
1966	69,800,000	15,200,000	85,000,000	78,672,000	[4] 6,328,000
Total	192,900,000	47,100,000	240,000,000	197,180,000	42,820,000

[1] The annual appropriation language and the Department presentation combine the appropriation for "Forest roads and trails" made pursuant to 23 U.S.C. 205 and the appropriation of 10 percent of forest receipts for construction and maintenance of roads and trails pursuant to 16 U.S.C. 501. This merger of funds is made in order to simplify the programing, allotment, and accounting of funds at the field level. Since the accounts for these 2 funds are merged it is not practicable to distribute obligations and expenditures between the 2 appropriations on a precise basis. The amounts shown for the "Forest roads and trails" appropriation are a proration based on the percentage that contract authorization used under the appropriated funds is of total available funds. Expenditure amounts for maintenance are based on all such obligations requiring cash payment during the fiscal year.

[2] The 1965 appropriation of $70,300,000 and the proposed Pay Act supplemental of $1,172,000, less prior year unfunded authorization of $22,964,000, provide $48,508,000 for funding of the $85,000,000 authorization for 1965.

[3] Includes $5,215,000 which has been administratively reserved.

[4] Includes $4,000,000 which has been administratively reserved.

Status of unfunded authorizations

Unfunded contract authorizations beginning of 1965	$107,964,000
Appropriation, 1965	−70,300,000
New contract authorization, 1965 (1966 authorization available in 1965—Federal-Aid Highway Act)	85,000,000
1965 proposed supplemental for increased pay costs	−1,172,000
Total unfunded beginning of 1966	[1] 121,492,000
1966 budget estimate (cash requirements)	−78,672,000
New contract authorization, 1966 (1967 authorization available in 1966—Federal-Aid Highway Act)	85,000,000
Balance to remain unfunded as of June 30, 1966	[1] 127,820,000

[1] At the present time $8,450,000 of the available fiscal year 1965 authority has not been administratively approved for obligation. The fiscal year 1966 budget proposes utilization in 1965 of $3,235,000 of this unused 1965 authorization, leaving $5,215,000 in administrative reserve. In addition, $4,000,000 of the fiscal year 1966 authority has been administratively reserved.

[1] An estimated 70 percent of the $72,500,000 new obligations, 90 percent of $7,000,000 Montana-Idaho flood damages and Alaska earthquake damages, and Pay Act costs (Public Law 88–426) of $1,500,000 will require cash payments during the fiscal year.

Analysis of cash requirements

1. Unliquidated obligations June 30, 1964		$31,219,208
2. Estimated cash requirements to finance 1965 program		[1] 53,688,429
3. Total cash requirements by June 30, 1965		84,907,637
4. Less cash on hand 1965:		
Balance from 1964	$13,435,637	
Appropriated 1965	70,300,000	
		83,735,637
5. Additional cash needed for 1965 obligations (supplementals to be proposed later in year)		1,172,000
6. Obligations in 1965 for which cash was not provided in item 2		28,042,000
7. Estimated cash required to finance 1966 program		[2] 50,630,000
8. Total cash required for 1966		78,672,000

[2] An estimated 60 percent of $84,235,000 new obligations will require cash payments during the fiscal year.

PROJECT STATEMENT

The following tabulation reflects the total program for the construction and maintenance of roads and trails on the national forests by combining the funds available under the appropriation "Forest roads and trails" with the permanent appropriation of 10 percent of national forest receipts. This permanent appropriation for roads and trails for States (10-percent fund) is estimated at $13,400,000 for 1966 compared with $13,141,263 for 1965, an increase of $258,737.

Project	1964	1965 estimated	Increase (+) or decrease (−)	1966 estimated
1. Construction of roads and trails	$61,060,009	$73,686,693	+$6,248,307	$79,935,000
2. Maintenance of roads and trails	16,221,840	21,185,000	−3,485,000	17,700,000
Total obligations	77,281,849	94,871,693	+2,763,307	97,635,000
Transfer from "Roads and trails for States"	−12,000,882	−13,141,263	−258,737	−13,400,000
Program under "Forest roads and trails" contract authorization	65,280,967	81,730,430	+2,504,570	84,235,000
Obligations incurred under unfunded contract authorization	−2,080,967	−10,258,430	+4,695,430	−5,563,000
Total increased pay costs (Public Law 88–426)	(——————)	(1,500,000)	(+35,000)	(1,535,000)
Total available or estimate	63,200,000	71,472,000	+7,200,000	78,672,000

An increase of $7,200,000 is needed to meet cash requirements for liquidation of contract authorization: This appropriation provides for the liquidation of obligations incurred for the construction and maintenance of forest roads and trails pursuant to the authorization contained in the Federal-Aid Highway Act. An appropriation of $78,672,000 for 1966 is required to—

(1) Pay for obligations of the prior year which will be due for payment in fiscal year 1966, and

(2) Pay the portion of 1966 obligations of $84,235,000 contract authorization which will require cash payment in that year. This includes $81 million of the 1966 authority plus $1.7 million of unused 1965 authority which is needed to complete the restoration of trails damaged by the June 1964 floods in Montana and Idaho, plus $1,535,000 of unused 1965 authority for Pay Act costs (Public Law 88–426).

The increase would partially meet the most critical needs for roads and trails required to open up timber for sale, for making recreation areas accessible, for faster attack on fires, and for meeting other transportation requirements in the multiple use management and protection of the national forests.

The level of financng assumes continued contributions to the road system by timber operators under timber sale contracts. The more important operator-built road will be designed and supervised with funds provided under this appropriation. Also some supplementation of operator construction will be done to obtain the required standard of roads for future timber sale in the area. (Under current authority, the timber operators can only be required to build a road to a standard which is considered prudent for the sale in question.)

In addition to road construction itself, funds are included for the purchase of roads now owned by others. These roads are needed to provide access to national forest timber as well as other uses.

The requested funds will also provide for maintenance of national forest road and trail systems. This degree of Forest Service responsibility for this system is shown in the following table:

[Approximate mileage]

	Roads	Trails
Maintenance by Forest Service	103,908	101,360
Maintenance by others	89,955	3,296
Total	193,863	104,656

This national forest road transportation system and its extension is highly important in maintaining and increasing rural industries dependent on forest resources. It is vitally essential to the small timber operator since it permits smaller sales which he can handle. It is essential to the many small businesses which depend on tourism for a livelihood. It is also essential for effective forest protection from fire, insects, and disease and for the salvage of timber felled by blowdown, fire, insects, or disease.

Following is a summary of the major road construction proposed for 1966:

	Units	Estimated cost
Bridges	213	$4,950,000
Roads (miles)	1,865	45,541,000
Trails (miles)	900	3,000,000
Surveys, plans, and supervision of timber-purchaser roads (miles)	5,000	20,094,000
Supplementing timber purchaser construction (miles)	979	4,250,000
Road purchase		2,000,000

Examples of recent accomplishments

Under this program, the existing system of roads and trails used for the protection and multiple-use management of the national forests is maintained and improved and additional facilities are constructed as needed to develop the forests and obtain the maximum practicable yield and use of their resources on a continuing basis. An adequate and complete system of roads and trails is essential. During the 10-year period of 1963–72, 46,400 miles of roads and 8,000

miles of trails should be built by the Forest Service to meet forest management, protection, development, and utilization needs. Even with the estimated 1,300 miles of road construction derived from the accelerated public works financing, construction financing during the period of 1963–65 will be only about 16 percent of that needed for the 10-year period.

In the spring of 1964, Alaska areas sustained considerable earthquake damage and Montana and Idaho areas suffered severe flood damage. Additional contract authorization of $50,000 in 1964 and $300,000 in 1965 was obtained to repair damaged roads and trails in Alaska.

The June floods in Idaho and Montana caused an estimated $8,900,000 damage to forest roads and trails. Reliable sources indicate this flood was of a greater intensity than that predicted for a 100-year interval. Additional contract authority of $500,000 in 1964 and $6.7 million in 1965 was obtained to provide for emergency repair of these road and trail facilities. An additional $1,700,000 contract authorization is being requested for 1966, primarily to complete trail damage repair. Over 425 miles of road, 55 bridges, and 750 miles of trail in Montana and Idaho were damaged or destroyed by these storms and resulting floods.

The transportation system is maintained in part by State and local authorities, licensees, permittees, and purchasers of Federal timber and other forest products.

During fiscal year 1964, $16,222,000 was obligated for repair of flood damage, maintenance and preservation of existing roads and trails and $61,060,000 for road, trail, and bridge construction and reconstruction. In addition, purchasers of Government timber accomplished road maintenance representing an estimated expenditure of $6,090,000 and started construction on roads estimated to cost $50,973,000.

Construction started in fiscal year 1964 was:

	By the Government	By purchasers of timber	By accelerated public works funds
Roads, miles	1,524	4,237	617
Trails, do	525	----------	128
Bridges, number	214	43	38

(c) *Access roads: project statement*

Project	1964	1965 estimated	1966 estimated
Access roads	$273,803	$847,440	----------
Unobligated balance brought forward	−1,121,243	−847,440	----------
Unobligated balance carried forward	847,440	----------	----------
Total available or estimate	----------	----------	----------

The unobligated balance of $847,440 from the fiscal year 1962 appropriation will be fully obligated during fiscal year 1965. During fiscal year 1964, 14 cases were obtained involving 73 miles of new land easements or rights-of-way over existing roads or interests in existing roads. An estimated 200 miles will be obtained in fiscal year 1965.

Effective with fiscal year 1964, this appropriation was eliminated and future access road purchase, beyond that to be accomplished with the balance remaining in this appropriation, will be accomplished under the "Forest road and trail" appropriation.

PURCHASE OF ACCESS ROADS

Chairman HAYDEN. What amount do you estimate that you will expend for purchase of access roads?

Mr. NELSON. $2 million, Senator.

Chairman HAYDEN. How much do you estimate will be made available as an addition to this sum by contributions to the roads system by timber operators under timber sale contracts?

Mr. NELSON. Senator, we estimate that the operators will build about 4,795 miles of road which will be added to our system, and it will probably cost about $65 million. The committee understands, I am sure, that this is really paid for by the Government through allowances made in the timber sale appraisal.

ACQUISITION OF LANDS, SPECIAL ACTS

Chairman HAYDEN. There will be placed in the record the justification for your estimate of $70,000 needed for acquisition of lands in various national forests, as authorized by special acts of Congress.

(The justification referred to follows:)

JUSTIFICATION STATEMENT

Appropriation act, 1965, and base for 1966	$70,000
Budget estimate, 1966	70,000

Project statement

Project	1964	1965 (estimated)	1966 (estimated)
1. Cache National Forest, Utah	$10,000	$10,000	$10,000
2. Uinta and Wasatch National Forests, Utah	17,001	20,000	20,000
3. Toiyabe National Forest, Nev		8,000	8,000
4. Angeles National Forest, Calif	3,038	8,000	
5. Cleveland National Forest, San Diego County, Calif	8,000	8,000	
6. San Bernardino-Cleveland National Forests, Riverside County, Calif	8,000	8,000	
7. Sequoia National Forest, Calif	278	8,000	32,000
Unobligated balance reverted to national forests fund	23,683		
Total increased pay costs (Public Law 88-426)		(230)	(230)
Total available or estimate	70,000	70,000	70,000

The Congress has enacted several special laws which authorize appropriation from the receipts of certain specified national forests for the purchase of lands to minimize erosion and flood damage. Appropriations under seven of these special acts for 1965 are:

Forest and Act

Cache, Utah, act of May 11, 1938, as amended	$10,000
Uinta-Wasatch, Utah, act of Aug. 26, 1935, as amended	20,000
Toiyabe, Nev., act of June 25, 1938, as amended	8,000
Angeles, Calif., act of June 11, 1940	8,000
Cleveland, San Diego County, Calif., act of June 11, 1940	8,000
San Bernardino-Cleveland, Riverside County, Calif., act of June 15, 1938, as amended	8,000
Sequoia, Calif., act of June 17, 1940	8,000
Total	70,000

There are critical watershed lands needing soil stabilization and vegetative cover restoration to prevent serious erosion and damaging floods within these national forests. Land treatment measures must be applied and subsequently maintained on all lands in these areas to make corrective action fully effective. To assure full program effectiveness the intermingled private lands must be acquired by the Federal Government.

The fiscal year 1966 budget is at the same level as fiscal year 1965 for those national forests in Utah and Nevada. However, the $32,000 provided in fiscal year 1965 for four California national forests ($8,000 to each) is programed in the fiscal year 1966 budget to one national forest—the Sequoia. This will provide the opportunity to acquire individual properties having higher values than the $8,000 provided for that forest in fiscal year 1965.

During fiscal year 1964, 10,178 acres of land were purchased under the special purchase authorities applying to the Cache, Uinta, and Wasatch National Forests in Utah. Figures V–1[1] and V–2 show examples of areas where such purchases are being so that flood prevention and erosion control measures can be applied.

In this same period, 138 acres of land were purchased in the national forests of southern California under special laws enacted in 1938 and 1940. These acquisitions help to protect steep, critically valuable watersheds lying immediately above heavily populated urban areas.

Cache National Forest

In fiscal year 1964 funds were available from two sources for purchase of lands within the Cache National Forest in Utah.

1. The Receipts Act of May 11, 1938, as amended: $10,000. This is an annual appropriation.

2. The act of July 24, 1956: $200,000 appropriated under this authority in fiscal years 1957 through 1960. These funds remain available until expended. Through fiscal year 1964, $173,592 has been obligated from this appropriation.

These funds are used to acquire key tracts of lands in the steep, rough, and highly important watershed areas lying north of the Ogden River, along the Wasatch front, and on Wellesville Mountain of the Cache National Forest. These are rugged mountain lands above the river valley, which have been damaged and their watershed functions impaired through forest fires or overgrazing. This contributes to excessive rainfall runoff, causing severe erosion. The damaged watershed lands are potential sources of floods and mudrock flows. Many tracts of land are located in the north fork of Ogden River and on the drainage of Pineview Reservoir, a Federal reclamation project. Others are within the watersheds of the city of Ogden and the other small towns along the Wasatch front. Public ownership of these lands and the subsequent restoration and protection of their vegetative cover is a highly important part of a vigorous, cooperative program with the local community and agencies.

The 1956 act requires that expenditures of Federal funds be matched by contributions by local agencies or people. This requirement has been met through donations of lands valued at $185,000. Additional contributions are expected in fiscal year 1965.

The appropriation of $10,000 under the act of May 11, 1938, is from receipts of the Cache National Forest. In the absence of this appropriation, the local counties would receive 25 percent of these receipts for roads and school purposes. Therefore, the local counties, in effect, are contributing one-fourth of the amount of this appropriation. These appropriations are extremely important to the continuation of a vital and worthwhile program extending over 20 years and shared in by both the local agencies and the Federal Government through the national forests.

Through fiscal year 1964, 28,891 acres have been approved for purchase pursuant to the Receipts Act of 1938, and 14,801 acres under the Special Act of 1956. The 1965 objective is to acquire 1,800 additional acres of these critical watershed lands.

Uinta-Wasatch

In fiscal years 1963 through 1965 an appropriation of $30,000 was made under the Uinta-Wasatch Receipts Act of August 26, 1935, for acquiring critical watershed lands in the American Fork Canyon watershed. A total of 1,198 acres has been aproved for purchase through fiscal year 1964 and an estimated 700 acres will be acquired during 1965. It is estimated that it will take from 4 to 5 years to complete the necessary American Fork acquisitions.

Toiyabe, Angeles, Cleveland, San Bernardino, and Sequoia National Forests

In fiscal year 1965, $8,000 was appropriated under each of these special acts to begin a program of acquiring critical watershed lands in these national forests. It is estimated that aproximately 600 acres will be purchased during 1965.

[1] Figures V–1 and V–2 not printed.

CHANGES IN LANGUAGE

Changes in the language of this item are proposed as follows: New language is italicized. Deleted matter is enclosed in brackets.

"For acquisition of land to facilitate the control of soil erosion and flood damage originating within the exterior boundaries of the following national forests, in accordance with the provisions of the following Acts, authorizing annual appropriations of forest receipts for such purposes, and in not to exceed the following amounts from such receipts, Cache National Forest, Utah, Act of May 11, 1938 (52 Stat. 347), as amended, $10,000; Uinta and Wasatch National Forests, Utah, Act of August 26, 1935 (49 Stat. 866), as amended, $20,000; Toiyabe National Forest, Nevada, Act of June 25, 1938 (52 Stat. 1205), as amended, $8,000; [Angeles National Forest, California, Act of June 11, 1940 (54 Stat. 299), $8,000; Cleveland National Forest in San Diego County, California, Act of June 11, 1940 (54 Stat. 297–298), $8,000; San Bernardino and Cleveland National Forests in Riverside County, California, Act of June 15, 1938 (52 Stat. 699), $8,000;] Sequoia National Forest, California, Act of June 17, 1940 (54 Stat. 402), [$8,000] *$32,000*; in all, $70,000: *Provided*, That no part of this appropriation shall be used for acquisition of any land which is not within the boundaries of the national forest and/or for the acquisition of any land without the approval of the local government concerned."

The proposed change deletes language authorizing appropriations for the Angeles National Forest, Calif.; the Cleveland National Forest in San Diego County, Calif.; and the San Bernardino and Cleveland National Forests in Riverside County, Calif.

The 1966 budget proposes the same fund level as 1965 for national forest acquisitions in Utah and Nevada; however, funds for the four California national forests are programed for the Sequoia National Forest, Calif., in 1966. It is desirable to concentrate the purchase program in California on one forest in 1966 rather than spread it to several.

WATERSHED LANDS PURCHASED WITH NATIONAL FORESTS RECEIPTS

Chairman HAYDEN. Do you have any particular comment on this item?

Mr. CLIFF. No particular comment, Senator.

This is a series of acts passed by Congress, special acts, which authorizes using part of the receipts on certain national forests for purchases of critical watershed lands.

This applies to several forests in Utah and several in California and one in Nevada, and the amounts are small. The counties involved give up a share of their receipts, and in every case they are willing to chip in their share of the receipts in order to make these purchases.

We feel that this program should move ahead on this very modest scale that has been carried on in the past.

ASSISTANCE TO STATES FOR TREE PLANTING

Chairman HAYDEN. The budget justification in support of your request for $1 million to assist States in their tree planting programs will be printed in the record.

(The justification referred to follows:)

JUSTIFICATION STATEMENT

Appropriation act, 1965, and base for 1966	$1,000,000
Budget estimate, 1966	1,000,000

Project statement

Project	1964	1965 estimated	1966 estimated
Tree planting assistance	$997,730	$1,017,634	$1,000,000
Unobligated balance brought forward	−15,364	−17,634	
Unobligated balance carried forward	17,634		
Total increased pay costs (Public Law 88-426)		(5,550)	(5,550)
Total available or estimate	1,000,000	1,000,000	1,000,000

This program helps provide for the Nation's expanding future needs for industrial wood through financial and technical assistance to the States in carrying out a Federal-State cost sharing program of planting, seeding, or other forestation work on nonstocked or understocked non-Federal commercial forest land. In fiscal year 1965 about 100,000 acres will be treated. Nearly 15,000 man-months of employment will be provided by this rate of planting. Conservative estimates indicate a need for planting 70 million acres in the United States. At the present rate of planting, it will take 70 years to complete the job. This rate of progress is too slow to expect early improvement of the economically depleted areas in which these lands are located for the most part. This program is authorized under title IV of the 1956 Agricultural Act. It is designed to help the States accelerate forestation of non-Federal public lands and private lands. Approved State forestation plans propose the forestation of almost 1.2 million acres of State-owned forest land and other forestation work related to the production of improved seed, processing and nursery production in 33 States at an estimated cost of $40 million. This program will help materially with improvement of the overall economic development of many rural areas. Furthermore, the assistance to States for tree planting program will furnish work opportunities that will supplement the objectives of the Economic Opportunity Act of 1964.

PRODUCTION OF IDLE STATE FOREST LANDS

Chairman HAYDEN. Do you have any comment on this program?

Mr. CLIFF. Mr. Rasmussen?

Mr. RASMUSSEN. Mr. Chairman, this is again a cooperative program with the States. It is designed to help and encourage the States to put their idle State forest lands, into timber production.

It is a program on which the State foresters are going ahead with enthusiasm and one they are interested in, and which we believe it is very worth while.

Thank you.

MISCELLANEOUS STATEMENTS AND JUSTIFICATIONS

Chairman HAYDEN. Also, there will be included in the record statements which you have furnished regarding acquisition of lands for Wasatch, Superior, and Cache National Forests, cooperative range improvements, proposed language changes, purchase of automotive equipment and aircraft, as well as statements regarding permanent appropriations, payments to be made under various acts, the working capital fund, and the cooperative trust fund.

(The statements referred to follow:)

ACQUISITION OF LANDS FOR WASATCH NATIONAL FOREST

Appropriation, 1965, and base for 1966	$150,000
Budget estimate, 1966	
Decrease	−150,000

Project statement

Project	1964	1965 estimated	Decrease	1966 estimated
Acquisition of lands for Wasatch National Forest	$179,686	$220,314	−$220,314	
Unobligated balance brought forward		−70,314	70,314	
Unobligated balance carried forward	70,314			
Total available or estimate	250,000	150,000	−150,000	

The act of September 14, 1962 (Public Law 87–661), provided authorization for the appropriation of $400,000 for purchase of privately owned lands within the Wasatch National Forest in Utah. The full amount of this authorization has been appropriated with the funds remaining available until expended.

The purchase of 7,974 acres of land was approved in 1964. It is expected that most of the remaining 11,000 acres will be acquired in 1965.

CHANGE IN LANGUAGE

The estimates propose deletion of language for this items as follows:

"[ACQUISITION OF LANDS FOR WASATCH NATIONAL FOREST]

"[For the acquisition of land in the Wasatch National Forest, Utah, in accordance with the Act of September 14, 1962 (76 Stat. 545–546), $150,000, to remain available until expended.]"

This language change deletes the appropriation in its entirety since the authorization of $400,000 has been fully appropriated, and no estimate for this item is proposed in the 1966 budget.

ACQUISITION OF LANDS FOR SUPERIOR NATIONAL FOREST

Project statement

Project	1964	1965 (estimated)	1966 (estimated)
Acquisition of lands for Superior National Forest	$602,478	$539,216	
Unobligated balance brought forward	−1,141,694	−539,216	
Unobligated balance carried forward	539,216		
Total increased pay costs (Public Law 88–426)		(900)	
Total available or estimate			

The act of June 22, 1948 (Public Law 80–733), as amended, provided authorization for the appropriation of $4.5 million for the prchase of lands and improvements thereon in the Boundary Waters Canoe Area, Superior National Forest, Minn. The full amount of this authorization has been appropriated with the funds remaining available until expended.

The legislation authorized and directed the Secretary of Agriculture to acquire any properties which in his opinion should be in Federal ownership in order to restore and preserve the wilderness character of the remaining canoe country along the Canadian boundary in Minnesota. Actions remain to be taken to vest title in the United States for approximately 9,800 acres of privately owned lands involving 18 owners. Approximately 90 percent is planned to be acquired by exchange. Present plans are to complete this acquisition program by June 30, 1965.

Acquisition of Lands for Cache National Forest

Project statement

Project	1964	1965 estimated	1966 estimated
Acquisition of lands for Cache National Forest	$24,696	$26,408	
Unobligated balance brought forward	−51,105	−26,408	
Unobligated balance carried forward	26,408		
Total available or estimate			

The 1956 Appropriation Act provided $200,000 for the acquisition of lands in the Cache National Forest pursuant to the act of July 24, 1956 (70 Stat. 632). Obligations under this fund are in addition to the $10,000 appropriation from national forest receipts authorized by the act of May 11, 1938, and provided in the appropriation, "Acquisition of lands for national forests, special acts." Under the 1956 act, funds appropriated must be matched by contribution of funds or land by local agencies or persons. Explanation of this program is included within the status of program for "special acts."

Cooperative Range Improvements

Appropriation Act, 1965, and base for 1966	$700,000
Budget estimate, 1966	700,000

Part of the grazing fees from the national forests, when appropriated, are used to protect or improve the productivity of the range, mainly by construction and maintenance of fences, stock-watering facilities, bridges, corrals and driveways. These funds are advanced to and merged with the appropriation "Forest protection and utilization," subappropriation "Forest land management."

Formula for Appropriation

Section 12 of the act of April 24, 1950 (Granger-Thye Act) provides that of the moneys received from grazing fees by the Treasury from each national forest during each fiscal year there shall be available at the end thereof when appropriated by Congress an amount equivalent to 2 cents per animal month for sheep and goats and 10 cents per animal month for other kinds of livestock under permit on such national forest during the calendar year in which the fiscal year begins.

The appropriation for this item since fiscal year 1951 has been $700,000 except for fiscal years 1954 and 1955 when $531,000 and $400,000 were appropriated. Since the actual use figures are not available until after more than one-half of the fiscal year for which funds are appropriated has elapsed, the 1965 appropriation request of $700,000 necessarily represents the best current approximation of the amount which will become available in the calendar year 1965 under the animal-months-of-use formula.

For calendar year 1963, the latest available figures, use amounted to 5,449,148 animal months for cattle and horses; 6,055,864 animal months for sheep and goats; and 436 for swine. This use under the 2 cents and 10 cents formula calculated to $666,076.

Administrative Provisions, Forest Service

CHANGES IN LANGUAGE

Changes in the language of this item are proposed as follows. New language is italicized. Deleted matter is enclosed in brackets.

"Appropriations [available] to the Forest Service for the current fiscal year shall be available for: (a) purchase of not to exceed one hundred and [twenty-nine] *twenty-six* passenger motor vehicles of which one hundred and [fourteen] *one* shall be for replacement only, and hire of such vehicles; operation and maintenance of aircraft and the purchase of not to exceed six for replacement only; (b) employment pursuant to the second sentence of section 706(a) of the Organic Act of 1944 (5 U.S.C. 574), [as amended by] *and not to exceed $50,000 for employment under* section 15 of the Act of August 2,

1946 (5 U.S.C. 55a) [, in an amount not to exceed $25,000]; (c) uniforms, or allowances therefor, as authorized by the Act of September 1, 1954, as amended (5 U.S.C. 2131); (d) purchase, erection, and alteration of buildings and other public improvements (5 U.S.C. 565a); (e) expenses of the National Forest Reservation Commission as authorized by section 14 of the Act of March 1, 1911 (16 U.S.C. 514); and (f) acquisition of land and interests therein for sites for administrative purposes, pursuant to the Act of August 3, 1956 (7 U.S.C. 428a).

"Except to provide materials required in or incident to research or experimental work where no suitable domestic product is available, no part of the funds appropriated to the Forest Service shall be expended in the purchase of twine manufactured from commodities or materials produced outside of the United States.

"Funds appropriated under this Act shall not be used for acquisition of forest lands under the provisions of the Act approved March 1, 1911, as amended (16 U.S.C. 513–519, 521), where such land is not within the boundaries of an established national forest or purchase unit nor shall these lands be acquired without approval of the local government concerned."

The first change would make it clear that the administrative provisions are applicable only to those funds appropriated to the Forest Service and would not apply to funds allocated to the Forest Service, such as Office of Economic Opportunity.

The second and third changes would provide authority for the Forest Service to purchase 126 passenger motor vehicles of which 101 will be replacements. The justification of this need appears in the following pages.

The fourth and fifth changes would eliminate the limitation on the amount which would be used for temporary employment of persons and organizations by contract or otherwise, without regard to the Classification Act, and the dollar limitation would apply only to temporary employment of experts and consultants. As carried in the appropriation acts for a number of years, the dollar limitation has applied to both of the cited authorities.

This proposal is made to permit the Forest Service to contract for personal services whenever economical and advantageous to do so. There are in the Forest Service certain temporary personal service requirements which could most economically, efficiently, and expeditiously be performed by contract employment rather than by normal employment procedures. Examples are such personal service needs as fire lookouts, timber cruisers, timber scalers, recreation guards, livestock counters, switchboard operators, etc. In these jobs the work to be done is generally on a seasonal and intermittent basis, subject to circumstances beyond the control of the Forest Service—i.e., fire hazard conditions and demands by timber sale operators, grazing permittees, etc.—which cannot be anticipated sufficiently in advance to permit full utilization of the employee's time. Under a contractual employment arrangement, the contractor would have great flexibility in assigning personnel to the job and better opportunities to utilize the time of such personnel not required on Forest Service work. This increased efficiency would result in economies to the Government as well as the contractor. The arrangement offers significant benefits. It eliminates initial and possibly replacement recruiting costs, training costs, and generally would provide better qualified personnel on short notice than would otherwise be available for part-time or short-term assignments. Also, the contractor assumes responsibility for payrolling his employees, maintaining related salary payment records, preparing related reports, and handling any possible injury or death claims.

Most employments by contract would involve persons or organizations located at or near the place where the services would be performed. Less time and travel would be involved. More expeditious handling of the job could be expected. An overall savings to the Government should be the end result.

The fourth change would also increase the dollar limitation for the temporary employment of experts and consultants from $25,000 to $50,000.

This proposed increase is needed to provide flexibility of operation in obtaining consultant services which are not available within the regular Forest Service organization. The number of studies requiring services of consultants has increased materially within the past few years. This increase is expected to continue, primarily as a result of expanding programs.

Passenger Motor Vehicles

PURCHASE OF PASSENGER MOTOR VEHICLES

During fiscal year 1966 it is proposed to replace 101 passenger cars, 9 of which are station wagons, all of which will meet replacement standards. It is also proposed to purchase 25 additional passenger cars. In some instances, due to actual program needs, it may be necessary to substitute a sedan for a station wagon or vice versa at the time orders are placed which could make a change in the relative number of sedans and station wagons shown, but this would not change the total number of passenger motor vehicles scheduled for replacement and addition.

Based on the planned schedule of replacements and purchase of additions, the Forest Service would have a total of 682 passenger vehicles, excluding 3 buses, in fiscal year 1965. On analysis of vehicle use and age pattern, the fleet is expected to include 101 units which will meet or exceed replacement standards before replacements are received.

As of June 30, 1964, the age and mileage classes of the Forest Service net active fleet exclusive of three buses were:

AGE DATA

Year model:	*Number of vehicles*
1959 or older	53
1960	65
1961	92
1962	145
1963	165
1964	122
Total	642

MILEAGE DATA

Lifetime mileage:	*Number of vehicles*
60,000 to 79,999	55
50,000 to 59,999	58
40,000 to 49,999	77
30,000 to 39,999	74
20,000 to 29,999	129
10,000 to 19,999	121
1,000 to 9,999	128
Total	642

USE OF VEHICLES

Passenger motor vehicles are used by (1) forest officers in the protection, utilization, management, and development of the national forests and land utilization projects and in the program for control of forest pests; (2) research technicians on experimental forests and ranges, on field research projects and forest surveys; (3) foresters engaged in carrying out the laws providing for State and private forestry cooperation; and (4) regional office field-going administrative personnel in performing, directing, and inspecting field work.

The Forest Service is essentially a field organization and its passenger motor vehicles are located mainly at regional, national forest, and ranger district headquarters, and experimental forests and ranges. There are over 225 million acres within the exterior boundaries of the national forests.

About 435 million acres of State and private forest land are included within the areas which benefit from Federal participation in the cooperative forest program. Much of this area is without common carrier service, and most forest areas and research centers are remote from commercial travel routes, requiring extensive use of motor vehicles as a means of transportation. The major portion of transportation needs, particularly at forest regional and supervisor levels and at other larger headquarters involves multiple passenger use and can be more expeditiously and economically met by use of sedans and station wagons than by other types of vehicles.

JUSTIFICATION OF REPLACEMENTS

Dependability of passenger vehicles is an important factor in keeping work programs on schedule and in meeting emergencies. Vehicle breakdowns while on field travel cause disruptions and delays in fieldwork as well as loss of effective work time of employees. The continued use of overage equipment is undesirable from a safety standpoint since most of it is operated over rough, narrow, winding roads in mountainous country under adverse conditions. This use generally results in excessive operating and repair expenses when vehicles reach or exceed replacement standards.

In order to maintain passenger cars in a safe and satisfactory operating condition, it is the policy of the Forest Service to schedule periodic preventive

maintenance inspections, services, and tuneups to reduce the necessity for costly repairs and major overhauls, and to minimize lost time resulting from field breakdowns.

It is desirable to maintain a reasonable balance in the age class of the passenger vehicle inventory. The age class distribution is based upon conforming with replacement standards which recognize that some units will be retired under the age standard and others under the use standard. Prescribed replacement standards, although applicable, are not always appropriate for all Forest Service vehicles because of the wide range of operating conditions and the comparatively short field season in many of the national forests at higher elevations. Decision on replacement of passenger vehicles which reach replacement age is based on an appraisal of each unit. This involves a review of the history record combined with a mechanical inspection of the vehicle's condition and repair liability. When such appraisal indicates that the vehicle is satisfactory for further service without unreasonable repair expenditures, it is retained and assigned to lighter work, even though such action tends to upset the age standards for the fleet inventory.

The vehicles selected for replacement are those which cannot be operated another season without excessive repair expense. They are unsatisfactory for further use both as to safety and mechanical condition. The replacement authorization requested is within the normal annual replacement standards prescribed by the General Services Administration (i.e., a maximum of 60,000 miles or 6 years, whichever occurs first).

Essentially all passenger vehicles are pooled for use by all activities with replacement of pooled units financed from a working capital fund. All appropriations reimburse this fund in ratio to use of vehicles on activities financed by the respective appropriations.

None of the replacements requested will be assigned to areas served or scheduled to be served by interagency motor pools.

JUSTIFICATION OF ADDITIONS

The Forest Service analyzes current work plans and programs in determining its overall passenger car requirements. This analysis includes a careful study of the number of vehicles needed at each field station, using as a guiding principle the ownership of only the minimum number of dependable units required to serve programs for which funds are budgeted. Also, it is Forest Service policy to utilize interagency motor pools or commercial car rental services to the fullest practicable extent. Passenger car use is restricted and is integrated with various activities so as to attain good utilization of all vehicles. Expanding activities in research, timber sales, public use of recreational facilties, fire protecton, and other land management activities are increasing the need for more passenger cars. These increasing needs are being met in some areas through greater use of interagency motor pool vehicles. These pools, however, serve only very small parts of the total land area administered by the Forest Service; therefore, increasing requirements for passenger car transportation in several areas cannot be fully met except through purchase of additional units for the Forest Service fleet. None of the additions requested will be assigned to areas served or scheduled to be served by interagency motor pools.

Additions are financed from program funds in direct relationship to the anticipated use of the equipment. Distribution of costs to appropriations is based on analysis of use of the equipment fleet for the past 3 years and the estimated use for the budget year.

AIRCRAFT

REPLACEMENT AND ADDITION OF AIRCRAFT

The 1966 estimates propose replacement of six aircraft by purchase and four by transfer from other agencies as available. The Forest Service currently has 57 aircraft:

Single-engine reconnaissance and transport airplanes	11
Light twin-engine reconnaissance and transport airplanes	6
Medium and heavy cargo and transport airplanes (10 medium, 4 heavy)	14
T-34B lead airplanes (2-place scout)	23
Helicopter	1
Forest spray airplanes (Pawnee and TBM)	2

The single and light twin-engine reconnaissance transport aircraft are used primarily to transport firefighters, smokejumpers, administrative personnel, equipment, and supplies to remote and inaccessible areas where commercial service is inadequate, or not available for detection and suppression of forest fires. They are also used to locate and survey timber stand and vegetation conditions, such as insect infestations, blowdown, diseased areas, undesirable species, and to appraise resources and damage, and evaluate effectiveness of control.

The T–34B "lead" airplanes are used primarily by air tanker bosses to direct and control the dropping of fire retardants on forest fires by more than 150 tanker aircraft usually contracted from private owners.

The helicopter is used for training forest personnel in tactical use of helicopters and experimental development of techniques and equipment for direct tactical suppression of forest fires.

The six replacements requested will be single- and light twin-engine airplanes. They will be utility airplanes that may be used for several purposes, such as lead planes for air tankers, small paracargo dropping, reconnaissance, and transporting freight and passengers. These will be new standard manufactured airplanes to upgrade some old surplus T–34B's and single-engine reconnaissance airplanes which have reached an age in total number of flying hours where it is uneconomical to overhaul or modernize it to meet civil airworthiness requirements. These replacements will provide a more effective operation, with a wider safety margin. Forest Service aircraft are operated to a large extent over rough mountainous terrain where landing fields are poor and few. It is especially important that these aircraft be maintained for maximum performance and dependability to provide an adequate standard of safety.

Other aircraft currently in use may be replaced as newer and more suitable models and types become available from military services as excess property.

They would be obtained on transfer without reimbursement and would not increase the fleet beyond 57 aircraft. When aircraft are partially or completely destroyed in a crash accident they may be replaced out of any available fund. The majority of current Forest Service aircraft were manufactured during World War II, and obtained from military surplus. Most of these planes have nearly reached their limit of useful age. The military services now have aircraft which have more potential suitability for Forest Service work that may become surplus in the near future. At present one medium cargo and personnel transport has reached the limit of economical usefulness.

Roads and Trails for States, National Forests Fund

Appropriation, 1965 and base for 1966	$13,141,263
Budget estimate, 1966	13,400,000
Increase (due to an estimated increase in National Forest receipts in fiscal year 1965)	+258,737

The permanent appropriation of 10 percent of National Forest receipts pursuant to the act of March 4, 1913 (16 U.S.C. 501) is transferred to and merged with the annual appropriation for "Forest roads and trails." The explanation of the use of these funds is included in the justification for that appropriation item.

The increase of $258,737 results from an estimated increase in receipts from sale of timber for fiscal year 1965.

Expenses, Brush Disposal

Appropriation, 1965 and base for 1966	$9,500,000
Budget estimate, 1966	9,500,000

Project statement

Project	1964	1965 estimated	Increase or decrease	1966 estimated
Brush disposal	$8,190,017	$9,000,000	$500,000	$9,500,000
Unobligated balance brought forward	−7,630,984	−8,971,944	−500,000	−9,471,944
Unobligated balance carried forward	8,971,944	9,471,944		9,471,944
Total increased pay costs (Public Law 88-426)		(258,000)	(+21,060)	(279,060)
Total available or estimate	9,530,977	9,500,000		9,500,000

Timber cutting normally increases the fire hazard because of dry fuel increase in the form of logging slash. This slash may also contribute to the buildup of insect populations, increase certain disease infestations, and cause damage to stream channels.

National forest timber sale contracts require treatment of debris from cutting operations or deposit of funds to pay for the work. When economical and expedient the work is performed by the timber purchaser. If it is not feasible for the purchaser to do the work, it is done by the Government using deposits made by the timber purchaser to cover costs of the work as authorized under section 6 of the act of April 24, 1950 (16 U.S.C. 490).

The effect of timber cutting and the manner of treating slash vary widely among regions. In the three eastern regions, volume cut per acre is relatively low, utilization is high, and generally, humid atmospheric conditions result in rapid decomposition of debris so little slash disposal work is necessary. An exception occurs in some sales where a heavier cut per acre is made, such as the jack pine stands of Minnesota. In such areas, slash is broken up and mixed with mineral soil by disking with heavy equipment. This reduces the hazard and provides a good seedbed to aid regeneration. Treatment of slash to prevent insect epidemics is sometimes necessary in these areas.

In contrast, the cost of slash abatement on most sale areas of the West is high. High volumes per acre generally produce heavy slash. Long dry periods with much lightning and man-caused fire risk result in extremely hazardous fire potential. The warm, humid condition necessary for rapid slash deterioration seldom occurs so more intense slash disposal is required. Treatment varies greatly with different methods of cutting. Clear-cut areas are broadcast burned. In selectively cut areas, debris may be piled for burning over the whole area or in strips which serve as firebreaks.

While slash disposal follows general prescriptions within regions, individual needs of each sale offering are planned and appraised prior to advertisement and appropriate specific requirements are incorporated into each timber sale contract. In each instance the method used is the one which will attain adequate protection of the area at the least expense. In some instances adequate protection from fire is attained by providing additional protection until the slash hazard reverts to near normal. Logging debris which may move into water courses under these conditions must be removed. Greater intensity of fire protection for several years and occasional stream clearance may be less costly than complete slash disposal immediately after cutting. In such cases brush disposal funds are used to provide the needed manpower and facilities.

Forest Fire Prevention

Appropriation, 1965 and base for 1966	$25,000
Budget estimate, 1966	30,000
Increase (representing estimated change in anticipated revenue)	+5,000

Project statement

Project	1964	1965 estimated	Increase or decrease	1966 estimated
Forest fire prevention	$26,169	$32,000	+$5,000	$37,000
Unobligated balance brought forward	−16,900	−44,316	+7,000	−37,316
Unobligated balance carried forward	44,316	37,316	−7,000	30,316
Total increased pay costs (Public Law 88-426)		(700)		(700)
Total available or estimate	53,586	25,000	+5,000	30,000

The purpose of the project is public education on the need for the prevention of man-caused wildfires on all the Nation's forests and rangelands. Its goal is the further reduction of man-caused forest fires on all ownerships to the point where their impact on natural resource management programs is negligible.

This project is accomplishing its purpose in two ways:

1. By the dissemination to the public of Smokey Bear's forest fire prevention messages on commercial products licensed by the Chief of the Forest Service.

2. By support of the Smokey Bear Junior Forest Rangers and of the Smokey Bear Awards program through the contribution of fees and royalties by licensees.

The Smokey Bear licensing program is an important part of the cooperative forest fire prevention campaign which has been in effect for 23 years. The campaign itself has been conducted each year since 1942 as a cooperative project of the State foresters and the Forest Service, U.S. Department of Agriculture, and is a public service program of the advertising council. The campaign utilizes the free public service resources of the various national advertising channels such as car cards, poster display systems, radio and television networks, and magazines and newspaper allocation plans in developing public cooperation in the prevention of man-caused forest fires. Since 1945, this campaign has been built around Smokey Bear who has become recognized and accepted by the public as a nationwide symbol of forest fire prevention.

Under authorization of Public Law 359 of the 82d Congress, the Secretary of Agriculture has issued rules and regulations governing the licensing program. These licenses specify payment of royalties (usually 5 percent) and set up certain controls for administering the program and collecting the royalties including advance deposits to protect the Government's interest. Such collections, along with appropriated funds, are used to finance the cooperative forest fire prevention campaign.

The licensing program provides about one-tenth of the total funds required for the cooperative forest fire prevention program.

RESTORATION OF FOREST LANDS AND IMPROVEMENTS

Appropriation, 1965 and base for 1966	$100,000
Budget estimate, 1966	100,000

Project statement

Project	1964	1965 estimated	Increase or decrease	1966 estimated
Restoration of forest lands and improvements	$22,081	$119,134	−$19,134	$100,000
Unobligated balance brought forward	−21,480	−19,134	+19,134	
Unobligated balance carried forward	19,134			
Total increased pay costs (Public Law 88-426)		(1,600)		(1,600)
Total available or estimate	19,735	100,000		100,000

Recoveries from cash bonds or forfeitures under surety bonds by permittees or timber purchasers, who fail to complete performance, are used to complete improvement, protection, or rehabilitation work on lands under Forest Service administration. Funds received as settlement of a claim are used for improvement, protection, or rehabilitation made necessary by the action which led to the cash settlement (act of June 20, 1958, 16 U.S.C. 579c).

PAYMENT TO MINNESOTA (COOK, LAKE, AND ST. LOUIS COUNTIES) FROM THE NATIONAL FORESTS FUND

Appropriation, 1965 and base for 1966	$137,763
Budget estimate, 1966	138,000
Increase	+237

Project statement

Project	1964	1965 estimated	Increase	1966 estimated
Payment to Minnesota (total available or estimate)	$130,986	$137,763	+$237	$138,000

The act of June 22, 1948, as amended (16 U.S.C. 577c–577h) provides that the Secretary of the Treasury, upon certification of the Secretary of Agriculture, shall pay to the State of Minnesota at the close of each fiscal year an amount

equivalent to three-fourths of 1 percent of the fair appraised value of certain national forest lands in the counties of Cook, Lake, and St. Louis situated within the Superior National Forest. The act further provides that payment to the State shall be distributed to each of these counties in conformity with the fair appraised value of such national forest lands in each county.

PAYMENTS TO COUNTIES, NATIONAL GRASSLANDS

Appropriation, 1965, and base for 1966	$450,000
Budget estimate, 1966	450,000

Project statement

Project	1964	1965 estimated	1966 estimated
Payments to counties, national grasslands (total available or estimated)	$455,379	$450,000	$450,000

At the end of each calendar year, 25 percent of the revenues from the use of submarginal lands are paid to counties under the provisions of title III of the Bankhead-Jones Farm Tenant Act, approved July 22, 1937 (7 U.S.C. 1012).

PAYMENTS TO SCHOOL FUNDS, ARIZONA AND NEW MEXICO, ACT OF JUNE 20, 1910

Appropriation, 1965 and base for 1966	$108,205
Budget estimate, 1966	110,000
Increase (due to an estimated increase in national forest receipts for fiscal year 1965)	+1,795

Project statement

Project	1964	1965 estimated	Increase	1966 estimated
Payments to school funds (total available or estimate)	$100,413	$108,205	+$1,795	$110,000

Under provisions of the act of June 20, 1910 (36 Stat. 562, 573) certain areas within national forests were granted to the States for school purposes. The percentage that these lands are of the total national forest area within the State is used in determining payments to the States. The receipts from all national forest land within the State are used as the basis for applying the percentage. For example, if total receipts for the State are $100,000 and if 10 percent of lands are in the "granted for school purposes" category, the payment to the State would be $10,000. The amounts so paid are deducted from the net receipts before computing the 25-percent payments to States.

As soon after the close of the fiscal year as the receipts from national forests and the area of school lands in the States of Arizona and New Mexico are determined, the payments are made to the States. Estimated payments in fiscal year 1965 to Arizona will be $107,851 and to New Mexico $354.

PAYMENTS TO STATES, NATIONAL FORESTS FUND

Appropriation, 1965 and base for 1966	$32,837,416
Budget estimate, 1966	33,540,000
Increase (due to an estimated increase in national forest receipts for fiscal year 1965)	+702,584

Project statement

Project	1964	1965 estimated	Increase	1966 estimated
Payments to States (total available or estimate)	$29,993,959	$32,837,416	+$702,584	$33,540,000

The act of May 23, 1908, as amended (16 U.S.C. 500), requires, with a few exceptions, that 25 percent of all money received from the national forests during any fiscal year be paid to the States in which the forests are located, for the benefit of public schools and public roads of the county or counties in which such national forests are situated. The amount of this appropriation varies each year in direct proportion to national forest receipts during the previous fiscal year.

The amounts set aside from receipts collected for the sale of national forest timber, grazing, and special-use permits, and so forth, before the 25 percent is applied are listed below:

1. Payment to the State of Minnesota covering certain national forest lands in the counties of Cook, Lake, and St. Louis, situated within the Superior National Forest is made under the terms of the act of June 22, 1948, Public Law 733. Receipts collected from the areas covered by this act are excluded when the 25-percent payment to the State of Minnesota is computed.
2. For lands in certain counties in Utah, Nevada, and California, the States receive 25 percent of receipts only after funds, if made available by Congress, have been set aside for the acquisition of national forest lands within the specified national forests under the terms of special acts authorizing appropriations from forest receipts for this purpose.
3. Payments to the States of Arizona and New Mexico under the provisions of the act of June 20, 1910, of shares of the gross receipts from the national forests in those States which are proportionate to the areas of land granted to the States for school purposes within the national forests.

Working Capital Fund, Forest Service

This fund finances on a reimbursable basis various services such as repairing and replacing equipment, including aircraft, stocking and issuing supplies, operation of subsistence camps, operation of sign shops, photographic and reproduction facilities, and tree nurseries in support of programs of the Forest Service (16 U.S.C. 579b, as amended). These Service operations serve programs of fire protection, timber utilization, construction and maintenance of roads and other improvements, reforestation, grazing, watershed, forest and forest products research, and kindred conservation activities of the Forest Service, including cooperative assistance with other Federal agencies, States, counties, and individuals engaged in the same objectives.

Operating results and financial condition

Government investment in the fund as of June 30, 1964, including donated assets and retained earnings for fiscal year 1964, is $31,141,000. By the end of 1966 the investment is anticipated to be $36,408,000, an increase of $5,267,000, which represents estimated earnings and donations during 1965 and 1966.

Receipts, nonoperating income, and retained earnings include an estimated $3,558,000 as of June 30, 1966, identified as income provision for increased cost of equipment replacements to be used only for financing the increased cost of equipment replacement; i.e., the difference between the cost of the replacement unit and the cost at the time of acquistion of the unit being replaced. This increased cost is due to inflation and model improvement, and must be financed if the fleet strength is to be maintained and not depleted through the gradual attrition of price increases for replacements. The earnings for the provision for increased cost of replacements are derived from a factor which is included for this purpose in rental rates charged to program appropriations for equipment use and credited to the working capital fund.

Retained earnings as of June 30, 1966, will total an estimated $7,300,000 which will consist of $2,657,000 gain on sale of equipment, $1,085,000 profit from operations, and $3,558,000 for provision for increased cost of replacement of equipment. Retained earnings have been applied toward increased cost of equipment replacements, purchase of fleet additions, and to furnish adequate working capital.

COOPERATIVE WORK, FOREST SERVICE (TRUST FUND)

Contributions are received from cooperators, including counties, States, timber sale operators, individuals, and associations, and are expended by the Forest Service in accordance with the terms of the applicable cooperative agreements. The work consists of protection and improvement of the national forests, work performed for national forest users, and forest investigations and protection, reforestation, and administration of private forest lands.

The major programs conducted under the account "Cooperative work, Forest Service" are described below in terms of the projects reflected in the statement at the end of this section.

1. Construction and maintenance of roads and trails, and

2. Construction and maintenance of other improvements

Under the acts of June 30, 1914 (16 U.S.C. 498), and March 3, 1925, and April 24, 1950 (16 U.S.C. 572), deposits for cooperative work are accepted from State and local government agencies, associations, Federal timber purchasers, and others for the construction and maintenance of roads, trails, and other improvements and for performing work which is the national forest users' responsibility, this method of performance of the work being of mutual benefit or of benefit to the public at large. Cooperative deposits received for wildlife habitat improvement for States from their hunting and fishing fees are included in this activity.

3. Protection of national forest and adjacent private lands

The act of June 30, 1914 (16 U.S.C. 498), authorizes the acceptance of deposits for the protection of the national forests and the act of March 3, 1925, as amended by section 5, act of April 24, 1950 (16 U.S.C. 572), authorizes the acceptance of contributions for the protection of private lands in or near the national forests. The major portion of the obligations is for the protection of private lands from fire. This arrangement helps both parties since there are millions of acres of private forest land intermingled with Federal ownership on the national forests. The lands in private ownership are usually in small tracts. It would be uneconomical for the owner to set up a fire control organization for the protection of his land. The advantage to the Government is that in many cases it would be necessary to suppress the fires on the private land without reimbursement in order to protect the adjoining Federal land.

4. Sale area betterment (including reforestation)

Section 3 of the act of June 9, 1930 (16 U.S.C. 576b), provides for deposits of funds by timber sale purchasers to cover the cost of reforestation and special cultural measures to improve the future stand of timber on the areas cutover by the purchaser. Deposits in fiscal year 1964 under this authorization totaled $19.9 million. Fiscal year 1964 accomplishments under this program are reported under the "Forest land management" subappropriation along with accomplishments for reforestation and stand improvement for that subappropriation.

5. Scaling

Under provisions of the act of April 24, 1950 (16 U.S.C. 572), and of section 210 of the act of September 21, 1944 (16 U.S.C. 572a), acceptance of deposits from timber purchasers for cooperative scaling service is authorized. Such arrangements are established only when requested by the operator and when the operator pays the extra cost of such services.

Subsection (c), section 5, act of April 24, 1950 (16 U.S.C. 572), provides broad authority to reimburse appropriations initially charged for expenses for cooperative services performed. The justification given in requesting this au-

thority in the legislative history in House Report 1189 and Senate Report 1069, 81st Congress, is limited to emergency situations. It would be convenient and economical to use this broad authority to furnish cooperative scaling services to timber purchasers by charging appropriations available for this type of work. Collections would be made later from the purchaser whenever he has arranged to pay for stumpage and other related charges after such charges have been determined. Comptroller General's Decision B–150466 dated January 14, 1963, clarified the authority in section 5 of the act of April 24, 1950 (64 Stat. 82, 16 U.S.C. 572), to make collections in arrears for elective cooperative deposits related to timber sales applicable to payment bond procedures. In summary, the Comptroller General stated that he would have no legal objections to the Forest Service rendering services authorized by section 5 on a reimbursable basis in instances where "(1) it has been administratively determined to be advantageous to the Government, and (2) necessary precautions have been taken to insure the recovery of all costs involved, including payment bond procedures: *Provided*, (1) Deposits to appropriations do not exceed the amount of costs incurred; and (2) appropriate congressional committees be advised of our plans to use section 5c in situations other than the emergencies contemplated by the Congress at the time the law was enacted." Beginning in fiscal year 1964, the Forest Service used this procedure when appropriate.

6. Research investigations

The acts of June 30, 1914 (16 U.S.C. 498), and May 22, 1928 (16 U.S.C. 581i–1), authorize the acceptance of deposits for forestry research. Deposits are received from State and other public agencies, and from industrial, assocation, and other private agencies to finance research projects of mutual interest and benefit to both parties. The deposits may be made either in a single sum or on a continuing basis, and may either partially or wholly cover the cost of the research. The cooperative research projects may involve any aspect of forestry and vary widely as to scope and duration. A very common example of such cooperation is for a State to make a deposit to the cooperative work fund in order to intensify or to speed up completion of a comprehensive survey of the forest resources of the State. Other examples are State contributions toward forest fire research. The results of such cooperative investigations are made available to the general public as well as to the depositor.

7. Administration of private lands

The act of March 3, 1925, as amended by section 5, act of April 24, 1950 (16 U.S.C. 572), authorizes the acceptance of contributions for the management of private lands. These contributions are made by private owners having land intermingled with or adjacent to national forests who wish these lands managed in accordance with good forest management practices. Their holdings are usually too small to warrant the employment of professional foresters to administer such tracts. The advantages to the Government include the avoidance of possible high fire hazard areas resulting from improper cutting practices, the elimination of the necessity of precisely marking the boundaries of the private land, and additional private forest land handled under proper forest practices.

8. Reforestation (private lands)

The act of March 3, 1925, as amended by section 5, act of April 24, 1950 (16 U.S.C. 572), authorizes the acceptance of contributions for reforestation of private lands situated within or near a national forest. This work is limited to areas of private land within a planting project on the national forests or to areas in which certain civic and other public-spirited organizations have taken an interest.

9. Statement on utilization of funds

Following is a statement of funds received and obligated and balances available by major activities:

Cooperative Work, Forest Service

Trust fund

Project	Balance available, June 30, 1963	Actual, fiscal year 1964			Estimate, fiscal year 1965			Estimate, fiscal year 1966		
		Funds received	Obligations	Balance	Funds received	Obligations	Balance	Funds received	Obligations	Balance
1. Construction and maintenance of roads and trails	$871,829	$1,486,191	$1,526,860	$831,160	$1,490,000	$1,490,000	$831,160	$1,400,000	$1,400,000	$831,160
2. Construction and maintenance of other improvements	[1] 522,897	763,206	725,208	560,895	765,000	750,000	575,895	750,000	750,000	575,895
3. Protection on national forests and adjacent private land:										
(a) Fire	466,189	2,023,981	1,969,008	521,162	2,025,000	2,025,000	521,162	2,025,000	2,025,000	521,162
(b) Other	1,204,060	1,484,159	1,264,954	1,423,265	1,500,000	1,500,000	1,423,265	1,500,000	1,500,000	1,423,265
4. Sale area betterment on national forest lands (including reforestation)	24,475,528	19,914,466	16,205,158	28,184,836	20,419,000	15,930,000	32,673,836	21,545,000	20,545,000	33,673,836
5. Scaling of timber	230,980	831,271	795,072	267,179	835,000	835,000	267,179	835,000	835,000	267,179
6. Research investigations	346,270	915,723	977,734	284,259	920,000	920,000	284,259	900,000	900,000	284,259
7. Administration of private lands	15,401	6,138	11,764	9,775	6,000	10,000	5,775	5,000	5,000	5,775
8. Reforestation (private lands)	92,139	39,559	40,767	90,931	40,000	40,000	90,931	40,000	40,000	90,931
Subtotal	28,225,293	[3] 27,464,694	23,516,525	32,173,462	28,000,000	23,500,000	36,673,462	29,000,000	28,000,000	37,673,462
Advanced to "Forest protection and utilization" for fighting forest fires	[2] −1,400,000		−1,400,000							
Total	26,825,293	[3] 27,464,694	22,116,525	32,173,462	28,000,000	23,500,000	36,673,462	29,000,000	28,000,000	37,673,462

[1] Includes approximately $130,000 State hunting and fishing cooperative deposits.
[2] Reflects obligations in 1963 for fighting forest fires which were recovered from the 1964 appropriation for fighting forest fires.
[3] Includes $4,358 reimbursed to appropriation.

Note.—Balances carried forward are due primarily to necessity of deferring work for which funds are deposited until the most practicable time. For instance, funds for sale area betterment are received in advance of cutting, but work cannot be started until cutting operations are completed. The timelag sometimes extends for several years, depending on the amount of preparatory work required in the sale area, weather conditions, etc.

Above obligations for 1964 include:

1. Transfers to national forests fund of earned sale area betterment deposits in excess of obligations for sale area betterment work	$143,366
2. Refunds to cooperators	213,396
Total	356,762

FOREST SERVICE LABORATORY, OLUSTEE, FLA.

Chairman HAYDEN. Senator Holland again is proposing that additional construction be accomplished at the Forest Service Laboratory at Olustee, Fla., which, he asserts, is needed to provide required facilities for research on the control of insects in longleaf and slash pine, and for improving naval stores production methods. He understands that the cost of this construction would be $250,000.

He has asked that three letters addressed to him regarding this matter be included in the record.

(The letters referred to follow:)

UNION BAG-CAMP PAPER CORP.,
NELIO CHEMICALS DIVISION,
Jacksonville, Fla., January 7, 1965.

Hon. SPESSARD L. HOLLAND,
U.S. Senate, Washington, D.C.

DEAR SIR: Last year you did an outstanding service to Florida and the Southeastern States by securing additional funds for naval stores production research at the U.S. Forest Service Olustee Laboratory. We, in the naval stores industry, greatly appreciate this help. This research promises to greatly reduce production costs and allow our industry to remain an active member of the local economy.

As a member of the Department of Agriculture National Forestry Research Advisory Committee, I have been keeping close contact with the program development at the Olustee unit. Florida's timber-based industries vitally need additional research on biological or other nontoxic means of controlling forest insects. With an increase in forest insect research at Olustee, coupled with the recently expanded naval stores research, the Forest Service scientists will require additional laboratory space and better equipment.

I believe plans have been developed for constructing additional laboratory facilities at Olustee. If you could contact Dr. V. L. Harper in the Forest Service Washington office, I feel certain he could discuss these plans with you. Perhaps with your help funds could be set up this coming year for constructing these badly needed facilities.

Again, Senator Holland, I thank you for all of your past help in securing funds for a research program to assist our naval stores industry. I hope that you are able to give us this further assistance.

Yours very truly,

GEORGE B. WILLIAMS,
Manager, Gum Processing & Producing.

FLORIDA FORESTRY ASSOCIATION,
Tallahassee, Fla., February 8, 1965.

Hon. SPESSARD L. HOLLAND,
U.S. Senator, Senate Office Building,
Washington, D.C.

DEAR SENATOR HOLLAND: The board of directors of the Florida Forestry Association at its meeting on February 4, 1965, adopted a resolution supporting the request for $200,000 in construction funds and $50,000 in equipment funds to expand the U.S. Forest Service Naval Stores and Timber Production Laboratory at Olustee, Fla. The timber industry, second largest industry in the State, plays a vital role in Florida's economy, and, of course, continued research by private, State, and Federal sources is mandatory. These increased Federal research facilities are needed by the forest industry in Florida and will naturally benefit the industry nationwide.

We trust we will have your wholehearted support at the hearings on supplemental appropriations.

Sincerely,

RONALD S. SPENCER, Jr.,
Executive Director.

THE SOUTHERN RESIN & CHEMICAL CO.,
Glen St. Mary, Fla., February 5, 1965.

Hon. SPESSARD L. HOLLAND,
U.S. Senate, Washington, D.C.

DEAR SENATOR HOLLAND: You may recall that I wrote you last year expressing my concern and that of my company about the need for strengthening the naval stores research program of the U.S. Forest Service. This research, which is all being done at Olustee, Fla., serves the entire naval stores industry across the South. It has repeatedly, over the years, come up with new techniques or practices which have had a major role in keeping our industry competitive.

In 1959 the Congress appropriated funds for the first wing of a laboratory office building at Olustee. This made available long-needed work space and equipment that permitted the staff to begin some important research that had previously been impossible. In the nearly 6 years since those funds were appropriated, the research at Olustee has grown and expanded, not only in naval stores but in other fields as well. I have seen indications of overcrowding there for a couple of years. Several scientists and supporting staff have been brought in, and there is now the need for additional scientific equipment. As a result, the research staff is becoming severely handicapped for lack of space. Experiments on the biological control of forest insects—which has been a very productive activity—as well as naval stores studies involving radioisotope techniques, require facilities and instruments designed to meet very rigid specifications.

I feel that it is now time to move ahead with the second wing of this Laboratory so that the forest owners and naval stores producers can get the scientific information we need, and get it more promptly. Forest Service men tell me plans for the Laboratory addition that were roughed out when the first wing was built have now been brought up to date and completed. However, I understand that there is nothing in the President's budget to take care of this need. Is there some way that construction and equipment money could be made available for this purpose?

We timberland owners and managers certainly appreciate all of your past interest and help, Senator Holland. We would be grateful for any additional assistance you can give us on this matter.

Sincerely,

W. B. NAGLE.

STATUS OF LABORATORY ADDITION

Chairman HAYDEN. Would you please insert a statement in the record indicating the need and desirability of this laboratory addition?

Mr. HARPER. I will be glad to, Senator.

(The statement referred to follows:)

ADDITION TO NAVAL STORES AND TIMBER PRODUCTION LABORATORY, OLUSTEE, FLA., $250,000

The first stage of this laboratory was completed in July 1960 and is in use at full capacity. During the original construction much of the basic planning was completed for the second and final stage. These plans have been updated and design and specifications are complete. Construction could proceed promptly in fiscal year 1966. This addition to the Laboratory will provide urgently required special facilities for research on the control of insects of longleaf and slash pine and for work on improving naval stores production methods.

The longleaf-slash pine forests of the Southeast are a major source of timber for the lumber and pulping industries. They also yield a large share of the world's turpentine and resin. Flat topography and excellent growing conditions favor large-scale mechanized timber production. Opportunities for greatly increasing the efficiency of timber growth, timber harvesting, and extraction of naval stores lie in efficient reproduction of cutover areas, upgrading of growing stock quality, and mechanization of naval stores operations. These are pressing problems for research.

The new construction will provide specialized facilities for research leading to silvicultural or safer chemical control of insects that are becoming very destructive of seed and cones of genetically superior trees in seed orchards. Scientists studying naval stores gum production also will have special facilities in this addition for use of radioactive tracers in their work as well as other laboratory aids to efficient research.

Olustee, Fla., is the only location for Forest Service research on slash and longleaf pine timber production and on naval stores production. The research applies to a vast region known as the slash-longleaf pine belt of the Southeast. Olustee is also the location for Agricultural Research Service's naval stores utilization station which is situated nearby. Close cooperation in the research of the two agencies is maintained.

LABORATORIES AT ALEXANDRIA, LA., AND STONEVILLE, MISS.

Chairman HAYDEN. Senator Ellender proposes an increase of $200,000 for research at Alexandria, La., and Senator Stennis proposes a like amount for initiating research on tupelo-cypress management and animal damage, the work to be done at your Laboratory at Stoneville, Miss.

Will you please supply for the record statements as to your ability to use the additional amounts requested.

Mr. CLIFF. We will do that.

(The statements referred to follow:)

FORESTRY RESEARCH, ALEXANDRIA, LA.

Forestry research, Alexandria, La	$200,000

This increase would be used: (1) to strengthen research on problems in artificial regeneration; (2) to step up research for joint production of livestock forage and timber; and (3) to study the development of new and improved wood products from southern yellow pine. The funds would be divided as follows:

Timber management research	$50,000
Range research	50,000
Forest products utilization research	100,000

The economy of the South, and of Louisiana, is interwoven with the productivity of its forest lands and the utilization of its forest products. Millions of acres of upland pine forest in the South, especially those west of the Mississippi River, are available for growing pulpwood and sawtimber and producing livestock forage. The wood producing industries, utilizing southern yellow pine for lumber, poles and piling, and more recently plywood, constitute the major employment opportunity in many Louisiana communities.

In artificial regeneration the most urgent need is to develop refinements of direct seeding techniques for the establishment of pine on sites where existing techniques have been unsuccessful. Particular attention will be given to poorly drained areas and to those with aggressive competition from grass and brush which interfere with pine establishment.

Southern pine forest lands in the South have potential for joint production of timber and livestock forage, and land managers are seeking ways to produce maximum yields of both crops. Research is needed on most efficient grazing systems, the use of feed concentrates to supplement the range forage, and how livestock should be managed to avoid excessive damage to timber and soil. Managers also need to know how soon forage production is affected by developing stands of timber and changes in forage that result from timber management operations.

More utilization research is urgently needed to assist the lumber industry in maintaining and improving its position and to aid the newly developing plywood industries to utilize the growing timber resources advantageously. Research should be accelerated in making laminated beams from sliced boltwood, a promising development for the use of the small sized timber in Louisiana. Research should be speeded in the technology of plywood production and the technical problems developing in the 19 new southern pine plywood mills constructed or committed in Louisiana and the Midsouth.

TIMBER MANAGEMENT AND FOREST PEST RESEARCH, STONEVILLE, MISS.

Timber management and forest pest research, Stoneville, Miss..... $200,000

This increase would be used to initiate research on tupelo-cypress management and animal damage to southern hardwoods; it would provide for research on tree improvement and site requirements of southern hardwood timber species. The increase would also allow for important studies of forest insects and diseases of bottom land hardwoods. The funds would be allocated as follows:

Timber management research	$150,000
Forest insects and disease research	50,000

Stands of tupelo and cypress occupy extensive swampland areas in the lower Mississippi Delta region and in the lower reaches of the other main rivers which cross the coastal plain. Tupelo, the most extensively occurring and fastest growing species in the swamp forest is valuable for pulp and container veneer. However, it grows in previously unmanaged stands and little is known about methods for regenerating a new crop to insure future supplies. The proposed research would concentrate on determination of the soil and site requirements which favor continuous management of tupelo, and on effective techniques for planting this species.

Southern bottom land hardwoods which furnish half of the hardwood supply of the Nation are increasingly threatened by animal damage, primarily by deer but also by nutria and beaver. This damage is most severe in planted stands but is also serious in extensive natural forests of cottonwood, sweetgum, and other southern hardwoods. Research is needed on possible controls through providing alternate food supplies, the use of repellents, the use of less palatable species or strains of trees and other measures which have not been explored.

The strengthening of tree improvement research in southern hardwoods is necessary to speed up development of improved types of fast-growing trees for use in artificial regeneration programs. Promising leads on fast-growing cottonwoods need to be developed, and tree improvement research would be started on superior trees of sweetgum, cherrybark oak, nuttall oak, green ash, and willow. These species promise to give particularly early returns from tree improvement research because of the highly productive sites on which they grow.

Also to be strengthened is research by soil scientists on the soil and site requirements for growing the considerable variety of valuable southern hardwood species. Related research on basic water relationships in southern bottom land forests would be strengthened. Flooding, drainage, and other water regulation measures to favor timber growth need to be perfected so that they can be prescribed for different bottom land conditions.

Trunk-boring and bark-scarring insects attack living hardwood trees and cause defects in the wood which seriously degrade and lower the value of products cut from them. Outbreaks of hardwood defoliators have caused excessive mortality and reduced growth on over 3 million acres of southern hardwoods in the past decade. Heart rots, cankers, diebacks, and wilts in the bottomland forests exact an estimated annual toll of over 500 million cubic feet of wood, largely in sawtimber trees.

Expansion of forest insect and disease research would permit development of preventive and control measures for hardwood borers, defoliators, insects affecting hardwood regeneration and young stands, diebacks, and wilts associated with cumulative droughts, heart rots in merchantable trees, and root pathogens, stem cankers, and foliage blights. Of immediate and urgent importance, it would permit initiation of research on the factors influencing insect and disease buildup in the tension zones adjacent to the Great Plains where even relatively slight reductions in rainfall are followed by excessive mortality in species such as the live oaks.

MAPLE SAP PRODUCTION, NORTHEASTERN UNITED STATES

Chairman HAYDEN. At the request of Senator Aiken, of Vermont, I shall ask you to place in the record a statement regarding the Senator's belief that you can use an additional $90,000 further to accelerate research on maple sap production in the Northeastern United States. The Senator proposes that the work be done at the University of Vermont.

Dr. HARPER. I will be glad to do that.
(The statement referred to follows:)

COOPERATION WITH UNIVERSITY OF VERMONT

Timber management research, Burlington, Vt..... $90,000

This increase would be used to accelerate research on maple sap production at Burlington in cooperation with the University of Vermont. Maple sap production is important in the rural economy of the Northern and Eastern States where it provides needed employment and income. However, technological progress has lagged and there is a serious cost-price squeeze. Maple sap production could be substantially increased if this problem could be alleviated. Sufficient maple trees are available to expand the industry considerably, but this cannot be done until improved practices are developed to make maple sap production more profitable.

An increase of $90,000 would permit acceleration of several important phases of maple sap production research. Techniques and systems of sap extraction and collection would be developed to minimize labor costs per gallon of sirup produced. Cost studies of taphole preparation methods and studies of more effective equipment and techniques for tapping would be undertaken. The problem of bacterial contamination of tapholes, only partially controlled by present methods, needs further research in order to provide additional employment and income. Scientific studies would be made of the factors governing the formation and quality of sap, rate of flow, and sugar content, as a basis for further improvements in yield and quality products.

Research would be accelerated on the development of high-yielding trees. Trees already selected for their high sap sugar content will be used in developing better trees for the future. Methods for propagating and planting improved types of trees should be studied.

Other studies would concern modifying the spacing and changing the temperature environment of the tree boles to raise the yield of sap. The effect of sugarbush culture on the yield and quality of sugar maple timber needs study to maximize total income from continuous management of maple stands.

CONTINUANCE OF RESEARCH

Chairman HAYDEN. A letter addressed to Senator Aiken by Mr. Fortis H. Abbott, chairman of the Vermont Maple Industry Council, will also be included in the record.
(The letter referred to follows:)

VERMONT MAPLE INDUSTRY COUNCIL,
Burlington, Vt.

Senator GEORGE W. AIKEN,
Capitol Building,
Washington, D.C.

DEAR SENATOR AIKEN: In 1964 grant of $90,000 to the Department of Forestry, for research in connection with improvement of the maple tree for production of maple sirup and sugar, and including methods of harvesting the crop, is being put to good use in Vermont.

Our group has kept informed of the several projects now underway and is enthusiastic about their ultimate value to the maple industry.

We would like to endorse any effort you are able to make to secure additional funds for use in the continuance and expansion of this particular kind of research.

Sincerely,

FORTIS H. ABBOTT, *Chairman.*

One of the projects, involving efforts to increase the possibility of growing maple trees which will yield sap with a higher sugar content, is underway in my own sugarbush of 5,500 taps, where I have a chance to observe the work at first-hand.

Disease control is likely to become very important in connection with maple production.

F.H.A.

FOREST HYDROLOGY LABORATORY, OXFORD, MISS.

Chairman HAYDEN. Senator Stennis has asked me to inquire about the possibility of your ability to utilize funds for constructing a Forest Hydrology Laboratory at Oxford, Miss. Congress appropriated $35,000 for planning this Laboratory last year.

If funds were available, is your planning sufficiently accomplished for you to let a contract this fiscal year?

Mr. HARPER. I know that planning is underway on this Laboratory but I would like to submit a statement for the record.

Chairman HAYDEN. You may do so.

(The statement referred to follows:)

FOREST HYDROLOGY LABORATORY, OXFORD, MISS., $450,000

This Laboratory will house forest watershed research on problems in the Southern Coastal Plains. Planning funds ($35,000) for this facility were included in the fiscal year 1965 budget. Architectural design and specifications are being developed and construction can begin in fiscal year 1966 after these plans are completed. A federally owned site is available adjoining the campus of the University of Mississippi.

Research is underway on two broad and related problems in Southern Coastal Plain forests: (1) To develop the principles and forest land practices for reducing storm runoff, erosion, and sedimentation from eroded and rehabilitated forest watersheds and to improve methods of establishing and maintaining soil-binding vegetation on such areas; (2) to determine the effects of soils, cover conditions, and management of forest lands on the volume, quality, and distribution of water yield and the addition of water to ground water recharge areas.

Some progress is being made in this research; methods of establishing pine plantations are fairly well worked out. What is needed now is intensive work to develop an understanding of soil-vegetation-water relationships so that timber harvest and other forest uses may be developed safely without serious impact on soil and water values. Also, much more needs to be learned about the Coastal Plain as a recharge area for underground storage and streamflow. This information is necessary for proper development of forest cutting practices which have a profound effect on floods, water quality and maintenance of usable water yield from forested watersheds.

The laboratory will provide for modern research techniques and controlled experiments on a model scale thus speeding the work and making it more effective. No other forest watershed laboratory of this type is planned for the broad Coastal Plain area of the South.

FORESTRY SCIENCES LABORATORY, BEREA, KY.

Chairman HAYDEN. I will include in the record a letter addressed to me on February 24 by Senator Cooper, of Kentucky, who urges that funds be provided for a Forestry Sciences Laboratory at Berea, Ky., to be located on the grounds of the Berea College.

Also, I will place in the record a letter from Dr. Francis S. Hutchins, president of Berea College, and a letter from Mr. C. D. Dosker, a forest products engineer.

(The letters referred to follow:)

U.S. SENATE,
COMMITTEE ON PUBLIC WORKS,
February 24, 1965.

HON. CARL HAYDEN,
Chairman, Senate Committee on Appropriations,
New Senate Office Building, Washington, D.C.

DEAR SENATOR: I know that the committee has in past years given attention and support to requirements for the work of the Forest Service Research Center at Berea, Ky., where Berea College is presently supplying the Service with some office space and limited laboratories and facilities. I wonder if you might ask the Forest Service to make available its capabilities in regard to planning fa-

cilities needed for the Berea Center when the Service gives testimony to the committee this week on the fiscal 1966 budget. I will very much appreciate your asking the Service to have this information available, and I would like to present views on the Center's needs to the committee at a later date.

With kind regards, I am

Sincerely yours,

JOHN SHERMAN COOPER.

BEREA COLLEGE,
Berea, Ky., February 12, 1965.

Hon. CARL HAYDEN,
Chairman, Senate Subcommittee on Appropriations for Department of Interior and Related Agencies, Senate Office Building, Washington, D.C.

DEAR SIR: I am writing to tell you how much I have appreciated the generous assistance your subcommittee has given to strengthening and expanding the Forest Service research program in Kentucky. For this we need your continued support.

The U.S. Forest Service has made substantial progress in developing a worthwhile forestry research program in Kentucky. Several weeks ago the scientists in charge of the research projects reviewed their work program with our college faculty. We were impressed with the work they are doing to solve many of our forest resources problems. I am sure that this research will contribute strongly to the overall effort that is now being made to improve conditions in Appalachia.

Berea College is a privately financed college. Our main objective is to educate young people of real promise who lack the financial resources necessary for higher education. This southern Appalachian region, which provides us with 90 percent of our students, is also a concern of the college. We are striving constantly to improve the living standards in the mountain area. For this reason we have been cooperating with the Forest Service in their efforts to find ways of making Appalachia's forest resources more productive.

Because of our belief in this research program, we are supplying the Forest Service with on-campus office space, very limited laboratories and greenhouse facilities at nominal rent. We realize that these are poor facilities for carrying on the work. In fact, they are most inadequate, because they are small and scattered. Therefore, about a year ago we gave the Forest Service a long-term free-use lease to a tract of land on which to build appropriate laboratories and other research facilities. We are not a rich institution and are largely dependent upon donations, but we were glad to provide the land for these facilities because we feel that the broad objectives of the Forest Service research program are parallel to those of Berea College.

The Forest Service has moved ahead rapidly in developing this tract of land. Roads and utilities are being brought in and a small greenhouse is under construction. This is an ideal time to start constructing the main laboratory needed by their scientists for their work. Therefore, I earnestly recommend that you and your subcommittee add $500,000 to the Forest Service budget for the construction of the necessary laboratory building. The research done in these laboratories would give the technical knowledge and guidelines required to obtain the maximum economic and social benefits from the forest in the distressed mountain areas of east Kentucky.

If this appropriation could be included at this time, I believe it would be of the utmost importance, as the directors of the programs of the Economic Opportunity Act and the Appalachia Act require all the data which may come from this forest research center.

If you would like more information about my recommendation, I would be pleased to furnish it.

Yours sincerely,

FRANCIS S. HUTCHINS.

C. D. DOSKER, FOREST PRODUCTS ENGINEER,
Louisville, Ky., February 20, 1965.

Senator CARL HAYDEN,
Chairman, Senate Subcommittee on Appropriations, Department of Interior and Related Agencies, Senate Office Building, Washington, D.C.

DEAR SENATOR HAYDEN: I am writing to respectfully request that your committee add $500,000 to Forest Service appropriations for next year specifically for the construction of a laboratory-office building at Berea, Ky.

I had hoped to request permission to appear in person before your subcommittee but it has not been possible to do so because of health reasons. I would appreciate your including my letter in the record of your hearings.

I have been engaged in the forest products industries for more than 40 years and have been associated with one company, Gamble Bros., Inc., of this city from 1927 to 1963, the last 19 years as its president. Within the week I have been honored by Governor Breathitt for service to the Commonwealth in the field of forestry. Forests and forestry are one of the great mainstays of the economy of our State. The work being done by the U.S. Forest Service at Berea is tremendously important, and must be expanded because of the Appalachian program.

I sincerely hope you will concur in my request.

Very sincerely yours,

C. D. DOSKER.

NEED FOR AND COST OF LABORATORY

Chairman HAYDEN. Would you please supply for the record a statement regarding the need for such a laboratory and indicating its cost?

Mr. HARPER. Yes, sir.

(The statement referred to follows:)

FORESTRY SCIENCES LABORATORY, BEREA, KY., $500,000

This amount would provide modern facilities for research on the management of the mixed hardwood forests of the Cumberland Plateau. Architectural design and plans are estimated to cost $40,000. A site for the building has been made available by Berea College.

Timberlands occupy three-fourths of the land area of the Cumberland Plateau. They are an essential part of the economy of the region and with improved management are capable of much greater and more diverse production than at present. A complicating factor in their management is surface mining and associated spoil banks in need of rehabilitation.

Practical methods need to be developed for reducing damage to forest resources during surface mining in rugged forested watersheds. Methods of rehabilitation also need further test and improvement. The laboratory phase of such research would be done at Berea. Other research in need of more adequate laboratory support at that location, deals with the productive capacity of the plateau forest lands for timber and for related crops such as Christmas trees and decorative and medicinal materials. Emphasis in connection with the latter would be given to the culture of certain forest plants as an increased source of pharmaceuticals. Work on improvement of the markets for forest products in the region supplements other phases of the research.

WHITE ROCKS RECREATION AREA, GILES COUNTY, VA.

Chairman HAYDEN. Senator Robertson, of Virginia, has written to me with regard to the possibility of developing an outdoor recreation area in Giles County, Va., within the Jefferson National Forest. I will insert his letter and the enclosures thereto in the record at this point.

(The letter and enclosures referred to follow:)

U.S. SENATE,
COMMITTEE ON BANKING AND CURRENCY,
February 23, 1965.

Mr. PAUL R. EATON,
Clerk, Subcommittee on Interior, Committee on Appropriations, U.S. Senate, Washington, D.C.

DEAR PAUL: In view of the desire of the President to improve the conditions in the mountain areas of Virginia, as well as some of the other States, it probably would be an appropriate time for me to make an effort to develop a tourist attraction in the mountain county of Giles because the potential of that area for

outdoor recreation is unsurpassed and the proper development of that resource will benefit both the inhabitants of the area and those members of our urban population who are making increasing use of outdoor recreation facilities.

Therefore I would appreciate your help in getting the necessary funds added to the budget for the Forest Service to commence construction of a recreational lake in the Jefferson National Forest in Giles.

I enclose the correspondence sent to me by the regional forester, indicating his keen interest in the project, but saying, of course, that he could not go ahead without the money.

With kind personal regards, I am,

Sincerely yours,

A. WILLIS ROBERTSON.

DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
EASTERN REGION,
Upper Darby, Pa., February 15, 1965.

Mr. J. FRANK HESLEP, Jr.,
Chairman, Board of Supervisors, Narrows, Va.,

DEAR MR. HESLEP: This will acknowledge receipt of your letter of February 4, 1965, concerning the development of the White Rocks Recreation Area.

As you know, we have been concerned with the development of this area for some time and have made a modest beginning.

By June 30, 1965, we will have spent approximately $95,000 in this area. Another $16,000 is budgeted for fiscal year 1966. With these funds, we will have completed the construction of a 21-family-unit campground together with an access road and water and sewage systems, and brought power to the area. It is expected this campground can be opened for public use by early fall.

This is but a small part of the total development at this area. As you mentioned, we have now completed a study of the damsite and we know that a 47-acre lake is feasible. Overall plans for the area include swimming, boating, fishing, and picnicking. Preliminary estimates for total development are:

Dam construction	$685,000
Recreation facilities	503,000
Roads and parking areas	73,000
Total	1,261,000

These amounts are in addition to those which we will have spent or are budgeted through fiscal year 1966. We do not feel that further investment in camp and picnic facilities is warranted until the lake is a reality. The lake is really the key to attaining the full recreation potential of this area. Funds for its construction must be available in 1 year to enable us to award a contract for its construction. The budget for the Forest Service for the past several years has permitted a total allocation of approximately $700,000 annually for the development of recreation facilities in the eastern region. This must be spread over the seven national forests in this region. Considering the needs of the George Washington National Forest, also in Virginia, and the other national forests throughout the region and the Nation, it is unlikely that it will be possible to allocate $625,000 for the construction of this dam in the foreseeable future.

Funds that may become available to the Forest Service as a result of the Land and Water Conservation Fund Act will be available only for the acquisition of lands within the forest—they will not be available for the construction of improvements. It does not now appear that any funds will become available to us for this type of construction in the program for Appalachia now being considered by Congress.

We, too, are anxious to see the White Rocks area developed and are ready to proceed as soon as funds become available. I am sorry we cannot offer a more definite schedule.

Copies of this letter are being sent to Senator Byrd and Senator Robertson of Virginia: Congressman W. Pat Jennings and Senator Robert Byrd of West Virginia.

Sincerely yours,

RICHARD F. DROEGE,
Regional Forester.

BOARD OF SUPERVISORS,
Giles County, Va., February 4, 1965.

Mr. RICHARD F. DROEGE,
Regional Forester, R–7,
U.S. Forest Service,
Upper Darby, Pa.

DEAR MR. DROEGE: Giles County is located near the geographical center of Jefferson National Forest. The West Virginia State line forms the northern boundary of the county. National forest ownership in Giles County amounts to about 52,000 acres. Craig County, which is our boundary to the northeast, has over 112,000 acres of national forest. Montgomery, Pulaski, and Bland Counties, our south and west boundaries, contain about 58,000 acres of national forest lands. Monroe County, W. Va., contains about 1,500 acres of national forest lands. This adds up to approximately 223,000 acres or 40 percent of the Jefferson which is centered around Giles County.

The national forest and the State game commission has expended much effort and time to provide wild game cover and food and to improve the trout fishing in this area. The forest has also contributed to the general economy of the area by gradually bringing the timber stands into full production. Our hunting and fishing is as good or better than any other part of the forest.

In outdoor recreation improvements, very little has been provided by the Jefferson. There are a few scattered tables and fireplaces along some of the streams and these facilities get heavy use. The Forest Service is completing a modest camping facility on White Rocks Branch, a tributary of Big Stony Creek.

It is our understanding that an engineering concern, under contract to the Forest Service, has found that a 47-acre lake could be constructed on White Rocks Branch near the camping area mentioned above. When this is built, swimming, fishing and boating, along with camping and picnicking, would provide one of the finest outdoor recreation areas in the Appalachian Mountains.

The 1960 census shows a total population of 96,000-plus for Giles and the surrounding Virginia counties. The census shows that the adjoining West Virginia counties have over 95,000 people. This adds up to nearly 200,000 people within and immediately surrounding Giles County. With this population, it is apparent that a major recreation facility is needed and will receive heavy use.

The nearest national forest recreation development of any size is Cave Mountain Lake in Rockbridge County. This is about 100 miles to the northeast. In southwest Virginia, in Wise County, the Jefferson has two major developments—High Knob and Scott-Wise Lake. These facilities are 160 or more miles from Pearisburg, our county seat.

Several years ago, at the request of this governing body, civic organizations and local people, the Forest Service made a study of the White Rocks section. Their survey at that time showed that ample land is suitable for development of camping and picnicking and nature trails. Like most Appalachian mountain land, there are no lakes or impoundments suitable for swimming, boating, and fishing. Now that the engineering report shows that a 47-acre lake is feasible, it would appear that a fully developed site would accommodate well over 220,000 visitors per year. These were the forecasts the Forest Service people made a few years ago.

The economic impact of these visitors on this section would mean as much as a new factory employing over 75 people. In addition, such a recreation development could help to influence new industries to locate in this area. This board can envision no greater contribution the Jefferson National Forest can make to this area than this recreation facility.

This board realizes that work to date has progressed slowly for several reasons. One is that the Forest Service, and wisely so, needed to buy the land on the headwaters of White Rocks Branch in West Virginia to prevent future possible pollution. However, funding for this project since buying land has been meager. This board is impressed with the nature and quality of all work accomplished to date. Our relations with your local employees have been excellent.

The White Rocks project will tie in closely with the scenic beauty of the surrounding mountains which are partly accessible by highways. It will add much to long-range plans for the Cascades and Mountain Lake Scenic Area.

If this project is not eligible for financing under the proposed Appalachian program, it is certainly worth consideration and endorsement by other means. We hope an accelerated program can be commenced at the beginning of the new

fiscal year, July 1. We feel this project is so important to our economy that it is worthy of the support of Senators Harry F. Byrd and A. Willis Robertson, along with Congressman W. Pat Jennings. Since this undertaking can provide recreation opportunities for our West Virginia neighbors, a copy of this letter is also being sent to Senator Robert C. Byrd.

May we hear from you at your early convenience.

Sincerely yours,

J. FRANK HESLEP, JR., *Chairman.*

NEED FOR AND COST OF RECREATION AREA

Chairman HAYDEN. Would you please furnish for the committee record a statement indicating the possibility of establishing such an area and including in the statement the ultimate cost of it as well as the amount which would be required for first-year construction work?

Dr. HARPER. We will be glad to do that, sir.

(The statement referred to follows:)

WHITE ROCKS RECREATION AREA, JEFFERSON NATIONAL FOREST, VA., $625,000

The White Rocks Recreation Area is located in Giles County, close to the geographic center of the Jefferson National Forest. This location is strategically situated with respect to interstate highways, the West Virginia Turnpike, and important State highway links.

It is within a few miles of the picturesque Cascade area recently acquired by the Forest Service. The Cascades will be preserved in their natural condition with connecting trails from the White Rocks Area.

The project is in a relatively undeveloped portion of the Jefferson National Forest. The nearest national forest area offering comparable facilities is 100 miles to the northeast.

The estimated annual use during the initial 5 years of operation will exceed 100,000 visitors and will likely be more than double that number.

The project includes the construction of an earth dam to create a 47-acre lake and construction of related recreation facilities which will provide camping, picnicking, swimming, fishing, boating, and hiking. The total cost of the development is estimated at $1,201,000 consisting of:

Construction of earthfill dam	$625,000
Recreation facilities	503,000
Roads and parking areas	73,000
Total	1,201,000

Funds for the impoundment should be available a year before related facilities. A first year planning figure for this development is estimated at $50,000.

The White Rocks Area is in the program for "National forest development," which has been submitted to Congress although funds have not been provided to implement the project. On a priority basis we have been allocating available funds to areas on which there is a need to provide facilities for present use and where there are existing bodies of water.

FOREST HYDROLOGY LABORATORY, WENATCHEE, WASH.

Chairman HAYDEN. I will insert in the record a letter addressed to me by Senators Magnuson and Jackson regarding funds for the Forest Hydrology Laboratory at Wenatchee, Wash. There are a number of questions in the letter. I will appreciate you supplying answers to these questions for the record.

(The material referred to follows:)

U.S. SENATE,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
March 2, 1965.

Hon. CARL HAYDEN,
Chairman, Subcommittee on Department of the Interior and Related Agencies, Senate Committee on Appropriations, Washington, D.C.

MY DEAR MR. CHAIRMAN: We are writing to request additional funds for research activities at the Forest Hydrology Laboratory in Wenatchee, Wash.

The U.S. Forest Service fiscal year 1966 budget includes approximately $127,000 to support its program at this facility. Current research would be significantly strengthened by the addition of $90,000. This amount would allow three additional scientists and six supporting personnel.

A $90,000 increase would result in the yield of much useful information concerning the watersheds of the east side of the Cascade Mountains. This data is immediately pertinent to such land-use matters as timber harvesting, grazing, and recreational development.

We should like to point out that this Laboratory is located in a labor-surplus area contiguous to other distressed areas. The generation of this land-use information would have an important bearing on the employment problem of these areas.

We should like to point out, finally, that the recent and unfortunate floods in the Pacific Northwest have vividly underlined the need for a maximum research effort in watershed development and land use.

We earnestly solicit your subcommittee's careful and sympathetic consideration of our request.

Sincerely,

WARREN G. MAGNUSON, *U.S. Senator.*
HENRY M. JACKSON, *U.S. Senator.*

TYPE OF RESEARCH

Question. Does the Forest Service have plans for the expansion of its watershed research program at the Forest Hydrology Laboratory at Wenatchee, Wash.? If so, what type of research would be carried out?

Answer. The Forest Service has plans for expanding the research at Wenatchee. The present scientific effort at Wenatchee is not large enough to meet the soil and water problems in this critical area. If the research effort at Wenatchee were expanded, studies would be strengthened to develop methods of improving water yields through changes in the forest cover. Other research would be increased to determine special management practices for efficiently and effectively maintaining soil stability and preventing increased storm runoff. Also, basic studies of the soil-plant-water relationships would be carried out to furnish the scientific basis for practical solutions to the watershed management problems.

BUDGET REQUEST

Question: What additional amounts could the Forest Service efficiently use during fiscal year 1966 at the Wenatchee Laboratory?

Answer: The Forest Service could efficiently use an increase of $90,000 annually at that facility. The increase of $90,000 together with the present allocation of $127,000 at Wenatchee, would more fully utilize the new laboratory recently constructed there.

STAFFING

Question: What additional staffing would be required with an increase of this amount?

Answer: We estimate that additional staffing would include three scientists and six supporting personnel, primarily laboratory and field aids. In addition, there

would be some employment of summer help, but we feel that it would be the best utilization of these moneys to concentrate on full-time employees. Many of the studies would involve snow measurements and year-round activities.

NATIONAL FOREST LAND MANAGEMENT

Question: How would this increase contribute to the full utilization of the national forest land in this area?

Answer: The research which we have planned at Wenatchee is aimed at answering the problems of national forest land management in the region east of the Cascade divide. Here, the national forests are attempting to utilize fully the resources under a program of multiple use of the forest and related range watersheds. At present, there is lack of information on how to manage these highly erodible areas so as to make a maximum contribution to the economy of the region and yet protect and conserve the soil and water resources. The research objectives include ways of finding how the highly erodible areas, which are not now loggable, can be safely logged, thus eventually increasing timber sales and the allowable cut within this region. The objectives also include ways of finding how grazing allotments can be maintained without erosion or stream sedimentation. Information forthcoming from this proposed research would certainly make a marked contribution toward full utilization of national forest lands in that area.

NOON RECESS

Chairman HAYDEN. We will have to recess until 2 p.m. so that other Senators may make inquiries of you.

(Whereupon, at 12:05 p.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.)

(AFTERNOON SESSION, 2:10 P.M., THURSDAY, FEBRUARY 25, 1965)

Senator BIBLE (presiding). The subcommittee will come to order.

Chief, we will start with you.

I want to ask some questions involving our Nevada forests and some of the projects we have there. If you cannot answer all of these will you and your staff people, please submit the answers for the record.

I do not see my friend Floyd Iverson here. I understand he is coming in later.

That is a vote, so I think we had better stand in temporary recess.

(Short recess.)

RECREATION IN NEVADA

Senator BIBLE. The subcommittee will come to order.

During fiscal year 1965, Nevada received $332,920 for recreation purposes. Now I am advised by the regional forester that my State will receive approximately $208,000 for fiscal year 1966.

Can you advise me in detail just how the fiscal year 1965 funds were expended? Where and for what specific purposes?

Mr. CLIFF. We will have to get the details for you.

Senator BIBLE. All right. That can be supplied for the record.

(The information referred to follows:)

NATIONAL FOREST RECREATION EXPENDITURES IN NEVADA, FISCAL YEAR 1965

Activity	National forest		
	Toiyabe	Humboldt	Total
Maintenance, cleanup, policing, patrol, and administration of existing facilities	$44,092	$43,558	$87,650
Visitor information service	1,774	1,710	3,484
Development of new facilities and major betterment	194,363	47,423	241,786
Total	240,229	92,691	332,920

CHARLES MOUNTAIN, RUBY MOUNTAIN, AND LAMOILLE CANYON

Senator BIBLE. In your fiscal 1966 budget is the reduction of over $100,000, a reduced budget for only the State of Nevada, or are you making similar cuts throughout the region?

Mr. CLIFF. You understand that in Nevada we made a special effort last year to put extra funds in the Charleston Mountain area, and that job even went further than we told you it would. Now that it is pretty well along, I assume that part of this reduction is pulling back from that project and doing some other urgent project some other place.

Senator BIBLE. That could be partly true, but as you know—maybe you do not have these details in mind—since the Charleston project you people have chosen a very, very beautiful spot in the Rubies in Lamoille Canyon as a scenic area site, and certainly this is going to require considerable development and considerable improvement, so I wondered how that is going to fare, in view of a cutback.

This is not a very large cutback. This is a $100,000 cutback. You say you finished Charleston. Well, you should, because this serves a great population area.

You people proposed, as you know, to create a scenic area in the Rubies, in Lamoille Canyon, and I hope that you did not fatten the budget up for Charleston at the expense of the Rubies.

Mr. CLIFF. I do not know what the region's plans are for Lamoille Canyon. I do know that the Rubies is being proposed for a scenic area.

Senator BIBLE. It has not only been proposed, it has been established as a scenic area.

Mr. CLIFF. In these scenic areas we do not necessarily go in for intensive development, but in an area like Lamoille Canyon we would provide for intensive public recreation.

As you know, Senator, we allot the money to the regions, and the regional forester establishes the priority for the various forests within his region, based on need.

Senator BIBLE. Is this Floyd Iverson?

Mr. CLIFF. Yes. And we do not have detailed knowledge with us right here as to how he distributed those funds, or the reasons for it, but I am sure he must have some good reasons for the priorities that he has established.

We will be glad to look into it and supply the information for the record.

Senator BIBLE. All right. I am interested in exactly what you plan on doing in the Rubies, and in Lamoille Canyon.

Mr. CLIFF. We will be glad to supply that for you.

Senator BIBLE. If you do not have that information available to you, then supply it for the record.

Mr. CLIFF. Do you have knowledge of our plans for these areas, Mr. Greeley?

Mr. GREELEY. No, I do not have that information with me but will supply it for the record.

(The information referred to follows:)

In addition to the roal and trail work covered in other parts of the record, $5,400 will be spent on the maintenance, cleanup, policing, and administration of existing recreational facilities in fiscal year 1966.

LAMOILLE CANYON FOREST AND SECRET PASS HIGHWAYS

Senator BIBLE. It is my understanding that the Lamoille Canyon Forest Highway, tentatively approved for construction in fiscal year 1965, was sidetracked for other work in Elko County. I believe there was a diversion to the Secret Pass project, which also lies generally in the Ruby area, that you had a planned expenditure of some $540,000 for work in this general area.

Then, under date of February 15, I was advised that $214,000 was allocated for work at Secret Pass. I do not quarrel with the amount that you allocated for work at Secret Pass, because this was a project that you had to complete, and I think this was a completion figure, and if I am correctly advised, Secret Pass is completed now, or will be by the end of this present fiscal year.

Do you have information concerning this action?

Mr. NELSON. I do not have the figures. This is a forest highway, and the forest highways program is not controlled by us. That money is allotted to the Bureau of Public Roads, and they in turn allot it to the State.

We do have one-third vote in allocation of forest highway funds with the States and the Bureau of Public Roads.

Senator BIBLE. I understand that.

Mr. NELSON. These are parts of State highway systems, and I do not have the figures here on that, since we do not handle that money.

Senator BIBLE. I do not know whether you handle it or not, but a letter from the Forest Service under date, as I say, February 15, said you people had allocated the sum of $540,000 for this work in the Ruby Mountain scenic area.

This is what you said, not what the Bureau of Public Roads said.

Mr. GREELEY. I think there is a difference between the work on the Rubies and Secret Pass, I think we may be talking about two kinds of money, Senator.

Senator BIBLE. They are both highway money, both under the forest highway program, and reading directly from your regional forester, Floyd Iverson, under this March date, he indicated:

Fiscal year 1965 forest highway program as tentatively approved provides $540,000 to construct three and a half miles and construct 4 miles of the Ruby Valley route. This would complete presently planned improvements of this route.

EMPLOYMENT OF BALANCE OF FUNDS

The point I am making is not on these amounts, but he says this in March. Now we find that you have only spent $214,000 of that money.

My question is: What did you do with the other $326,000?

Mr. NELSON. Forest highway funds are allotted to States in accordance with the percentage formula that is in the Highway Act, so the $33 million which is the total amount available each year for forest highways goes to those States, and what is not used that year would still be available, so presumably if they did not use the full amount, it is available the next year.

Mr. CLIFF. We can find out for you, Senator.

Senator BIBLE. My information is that Mr. Iverson is coming in within the next few days. I wish you would take this up with him, because I am interested in where the balance of this money went. It is a pretty sizable amount of money, $326,000.

Mr. CLIFF. I can assure you, Senator, this stays in Nevada. Where it is used in Nevada is up to the State highway department, the Bureau of Public Roads, and the Forest Service to jointly decide.

There is a forest highway system in Nevada, and three agencies plan this system and allocate the money according to priorities they set.

When Regional Forester Iverson said that this money was allotted, I am sure he was speaking for the Forest Service and the two cooperating agencies, and not speaking as the Forest Service alone in accounting for this.

Senator BIBLE. Will you run that down?

Mr. CLIFF. We will run that down.

Senator BIBLE. If you can find that money, we will certainly put it right back on this scenic area in the Rubies, because this should have very, very high priority, and you people have given it high priority.

You say:

We are for it, but the Bureau of Public Roads is raising some questions.

All I am trying to find out is how to get this done without delay. I thought I had discovered $326,000, and if I have, I want it to go up to the Rubies and the scenic area with which you people pioneered and say it is one of the most lovely in the world, that it is lovelier than the Swiss Alps, with which I agree. These are not my words. They are your words.

I want to get it developed. It is just that simple.

Mr. CLIFF. We will find out and put it in the record. We might find it has been allocated to another project that you also think highly of, too.

(The information referred to follows:)

There was $540,000 programed for the Ruby Valley Forest Highway project; $214,000 is being spent on this in fiscal year 1965. The balance of $326,000 is continued to the fiscal year 1966 program to achieve a more logical contracting entity.

MOUNT CHARLESTON

Senator BIBLE. I have in mind Mount Charleston. I commend you for doing that and getting that done. If you are going to keep up with your rivals in the Park Service, you are going to have to get moving,

because they had over 5 million people in the Lake Mead National area last year.

I would like to see you get somewhere around that amount in the Mount Charleston area. Not quite that many. You have done fine work in Mount Charleston, and I certainly compliment you for it.

Annual Forest Highway Funding

As I understood your response, the amount of money that goes into forestry funds is $33 million annually.

Mr. Nelson. Yes, for forest highways.

Mr. Cliff. For the United States.

Senator Bible. Is that a fixed statutory figure?

Mr. Nelson. Every 2 years the Congress passes a new highway act. The 1964 Highway Act has $33 million authorization, as it has in the last two or three highway acts.

Senator Bible. So it has held at that fairly constantly over the last 4 or 5 years?

Mr. Nelson. Yes.

Senator Bible. I wish you would furnish for the record, if you would, the amount of forest highway funds that each of the Western States receive, or, Washington, California, Idaho, Montana, Utah, Arizona, New Mexico.

Mr. Cliff. We will be very glad to do that.

(The information referred to follows:)

1965 Forest Highway Apportionment for the Western States

Arizona	$1,857,456	New Mexico	$1,322,331
California	4,726,004	Oregon	4,545,904
Colorado	2,369,837	Utah	1,095,914
Idaho	3,359,886	Washington	2,293,608
Montana	2,630,481	Wyoming	1,407,712
Nevada	591,970		

Senator Bible. Would you also supply for the record the acreage of Forest Service land in these Western States?

Mr. Cliff. We will be very glad to furnish that, too.

(The information referred to follows:)

Acres of National Forest Land in the Western States

State:	Acreage[1]	State—Continued	Acreage[1]
Arizona	11,358,204	New Mexico	8,854,957
California	19,932,088	Oregon	15,362,096
Colorado	13,718,164	Utah	7,889,554
Idaho	20,298,260	Washington	9,687,801
Montana	16,637,728	Wyoming	8,570,617
Nevada	5,058,499		

[1] Owned by the United States.

Forest Highway Funds—Intermountain Region

Senator Bible. You say that the regional forester is charged with the responsibility of making the allocations within his region. Do I understand this correctly?

Mr. Cliff. That is correct, for our regular fund. For forest highway funds he represents the Forest Service interest, with the State and the Bureau of Public Roads having equal vote.

Senator BIBLE. Of what region does he have jurisdiction?

Mr. CLIFF. We call it region 4, or the intermountain region. It includes Utah, Nevada, Idaho, south of the Salmon River, and western Wyoming.

Senator BIBLE. Is this his region?

Mr. CLIFF. Yes.

Senator BIBLE. Do you know the amount of money that is allocated for region 4 for forest highways?

Mr. CLIFF. I could not tell you offhand, but we can find that out for the record.

(The information referred to follows:)

FUNDS APPORTIONED TO STATES WHOLLY OR PARTLY IN FOREST SERVICE REGION 4

Idaho (partly in region 4)	$3,359,886
Nevada	591,970
Utah	1,095,914
Wyoming (partly in region 4)	1,407,712

Funds allocated to Idaho and Wyoming can be used on forests within region 4 or on forests of other regions within these States. The total amount of fiscal year 1965 forest highway funds programed in region 4 was $4,050,000.

NEVADA FOREST HIGHWAY SYSTEM

Mr. BIBLE. Can you tell me something about the total size of forest highway system for the State of Nevada, how many miles in the system, the estimated cost, and how many years it would take to complete the system under present level of financing authorized in the Highway Act?

Mr. CLIFF. We would be glad to supply that for the record.

(The information referred to follows:)

The latest figures available from the Bureau of Public Roads indicate that the forest highway system in Nevada has 369.5 miles of highway. In this total system there are 214 miles yet to be constructed. The current estimate of total cost to complete the Nevada system is $21,111,000. Nevada's share of the present annual total authorization for forest highway is just under $600,000 annually. At this rate it would require 36 years to complete the forest highway system, assuming the use of only forest highway funds.

POLICY ON ALLOCATION OF FOREST HIGHWAY FUNDS

Senator BIBLE. Did you evolve a policy as to how these allocations are to be made to your forest highways?

Mr. CLIFF. The Congress evolved that policy, sir.

Senator BIBLE. What is it?

Mr. CLIFF. The history of that is that the forest highway money originally was allocated——

Senator BIBLE. I am not talking about the $33 million.

Mr. CLIFF. That is what I am talking about.

Senator BIBLE. What I am talking about is if you give region 4, $5 million for forest highways, how does the regional forester allocate that among the States within his region?

Mr. CLIFF. I think we are talking about two different things, Senator. Just to clarify it, the forest highway fund is one thing. That is the $33 million which was authorized in the Federal Highway Act, and the money is administered by the Bureau of Public Roads.

Senator BIBLE. I understand.

Mr. CLIFF. This is distributed to the States on the basis of a formula. As a matter of fact, the Congress, a few years ago, froze the formula.

Senator BIBLE. That is part on population and part on public domain?

Mr. CLIFF. No. Originally it was part on acreage of national forest land in each State and part on value of those national forest lands within the State.

That amount became fixed, and a few years ago, I think about 8 years ago, Congress froze that formula. It has not changed. Each year each State gets its designated percentage.

Now, in addition to the forest highway money——

Senator BIBLE. Before we get off the forest highway money, just so I have this completely clear, what you are telling me is that you have $33 million in forest highway funds. Region 4 will receive a certain amount of that.

Mr. CLIFF. That is correct.

Senator BIBLE. But of the amount they receive, that will be determined on a formula fixed by the Congress in the Highway Act.

Mr. CLIFF. That is correct.

Senator BIBLE. And the States within the region, Nevada, and Idaho, and Utah, and Wyoming, what they receive will be determined by that same Highway Act?

Mr. CLIFF. That is correct.

Senator BIBLE. So you have no discretion insofar as Nevada is concerned, in the amount of highway funds that it receives?

Mr. CLIFF. That is correct.

Senator BIBLE. Very good. I just wanted to clear that point, because I really was not too clear on it.

LAMOILLE CANYON PROJECT

I am wondering if you could, and maybe you cannot give me this, but I wish you would supply it for the record, as to what you propose doing insofar as planning and engineering and development of the Lamoille Canyon project.

Mr. CLIFF. We will be glad to supply that for the record, too, sir.

(The information referred to follows:)

Aside from the roadwork described elsewhere in the record, there is $10,000 programed for trailwork for fiscal year 1966 in the Lamoille Canyon-Ruby Mountain area.

FOREST ROADS AND TRAILS FUND

Senator BIBLE. You said you were next going to comment on the other type of funds. I guess that is forest trails and roads.

Mr. CLIFF. That is Forest Roads and Trails.

Senator BIBLE. I think I should have pursued that in order to round out the record.

Mr. CLIFF. Well, the Forest Roads and Trails fund is also authorized by the Federal Highway Act. That money is appropriated directly to the Forest Service, and is allocated by the Chief's office to the various regions on the basis of our road and trail plans, the existing mileage, and the projected mileage under our transportation planning system.

It is distributed on the basis of need, and we allocate funds to the regional forester. He in turn allocates funds to the various projects in his region. He also allocates it on the basis of proposed transportation plans for each forest and on the basis of need.

This is the money that pays for the maintenance, the betterment, the construction of bridges, the engineering of roads, and for the construction of new roads and trails.

So we have discretion in how we distribute this money and we do it on a planwide basis based on analysis of our management program and the needs on each forest.

Senator BIBLE. Where do you vest that discretion of region 4?

Mr. CLIFF. In the regional forester.

Senator BIBLE. This is your general pattern in the complete operation of your regions?

Mr. CLIFF. Yes, sir.

Senator BIBLE. So you give him x number of dollars, and he determines the allocation within the region?

Mr. CLIFF. Yes; but he is required to have a transportation plan for each region, which we review, and we coordinate this to make sure that we are giving equal treatment on the basis of need to the various regions and various parts of the regions. But he has discretion as to what priority to give to certain projects.

ROADS AND TRAILS, NEVADA, 1966

Senator BIBLE. Now, on "Forest roads and trails" for the next year, I note an item of $826,265 for Nevada. How many miles of roads and trails will that accommodate?

Mr. CLIFF. I cannot answer that directly.

Senator BIBLE. You can supply that for the record.

Mr. CLIFF. We can supply that.

You understand that we do have an existing system of roads and trails. The first call on this money is for maintenance and upkeep of that existing system, then we do have funds for extending that system.

Senator BIBLE. I understand that. It does not seem readily available to my staff, so if you will supply that, plus the areas where you plan on using it, I would appreciate it a great deal.

Mr. CLIFF. We will be glad to do that.

(The information referred to follows:)

CONSTRUCTION AND MAINTENANCE

Type work	Miles	Estimated cost
Road construction	23.8	$382,400
Trail construction	21	97,400
Road and trail maintenance		96,500
Total		576,300

The "Road construction" item will be for 6 campground roads and the Lehman Creek Road. "Trail construction" will be for Copper Basin, Island Lake, and Charleston Peak.

JOB CORPS CAMPS, NEVADA

Senator BIBLE. The next item, Chief, is that you show you will spend $453,550 on Job Corps camps in Nevada during fiscal year 1965, and an anticipated expenditure of $531,308 during fiscal 1966.

Now, I would like to know where you plan to locate these camps, and when you anticipate the camps to be opened.

Mr. CLIFF. Senator Bible, you are asking us a question that I do not know that we are in a position to answer.

The Job Corps, the Office of Economic Opportunity, has the responsibility for announcing these camps.

Now, we do plan one Forest Service camp in Nevada. The Forest Service will have 56 camps. We plan one Forest Service camp in Nevada. It is due to be announced about the end of this week.

Senator BIBLE. Well, I think it has already been announced. Is this the one in White Pine County?

Mr. CLIFF. No.

Senator BIBLE. Maybe this is a second one.

Mr. CLIFF. In addition, the Interior——

Senator BIBLE. I am talking about BLM. Where is Slim Hanson's territory?

Mr. CLIFF. That includes White Pine County.

Senator BIBLE. It is in his area, I think. I may not have the right county.

Mr. CLIFF. We do not want to violate any confidences we have with the Economic Opportunity Office, but we will be glad to give you any information that we are able to pass on at this time.

Senator BIBLE. If I cannot find it out from you, I guess I can find it out from Sargent Shriver. What you are saying is that you would rather I get it from him?

Mr. CLIFF. I think so, sir.

Senator BIBLE. I will be honest about this. I want to find out what you are going to do.

Mr. CLIFF. Mr. Hendee has been working very closely with Sargent Shriver's office. I will pass this question to him and let him tell you what we are at liberty to tell you right now.

Senator BIBLE. Certainly. There seems to be so much difficulty in obtaining facts on this. That is why I am questioning you.

Mr. HENDEE. Senator Bible, I think I could call you tomorrow and give you that information. I think that the announcement that is coming up on that camp is coming up either this weekend or very early next week, and I am sure that you will have that information in advance of the public announcement.

Senator BIBLE. Well, it always helps when we get a little advance notice. It is always discouraging to have somebody call you from home and say they have established something, or taken away something, and what do you know about it. That rather puts you in an embarrassing light.

I have read news releases about it. They may have been speculative.

Suppose we leave it on that basis, and suppose you furnish me with that information tomorrow.

Mr. HENDEE. I will be very glad to.

WORK WITH TRAINEES

Senator BIBLE. Can you answer this question: What kind of work do you plan on doing with the trainees, wherever you put them in the national forests in Nevada? What do you plan on doing with them?

Mr. HENDEE. The emphasis in these Job Corps camps will be on education and training and making more employable the enrollees that are going to be in the camp.

Now, in the location of these conservation centers, we have a balanced work program worked out in each and every one of these camp locations. The enrollees will work on projects that could be done in that area, with the idea that we use this work for training on the job, so that we develop these young fellows so they are more employable.

In a camp in Nevada, I am sure we would have a great deal of recreation development to be done, some of the same types of work that we have in our regular work programs of various kinds.

Senator BIBLE. Illustrate or specify that.

Mr. CLIFF. Camp ground improvement.

Mr. HENDEE. And picnic ground development.

There will be some roadside cleanup.

Senator BIBLE. Trails?

Mr. HENDEE. Some trails, some small buildings. We are particularly trying to work out so that we can train these young men in repair and maintenance of equipment, some maintenance and betterment of buildings. And we think part of the value of these camps will be in physical development of the enrollees working on all various kinds of outdoor conservation projects.

SIZE OF CAMP

Senator BIBLE. How large would your proposed camp in Nevada be? What would its strength be?

Mr. HENDEE. I think that this may start at 100 men. Most of these camps are going to be either 100 or 200 men. So I would visualize—I would have to check this, but I think in this case it would probably be a camp with eventually 200 enrollees.

Senator BIBLE. It would start out as a 100-man camp. What type of life do you give to these enrollees? Is that a 2-year program? I notice in your figures you projected 2 years.

Mr. HENDEE. The Economic Opportunity Act, as you know, is on a 2-year basis. It is my understanding that each year they come before Congress it probably will be extended.

But in our projection so far, we have a budget for 1965 with a total of 43 camps to be activated by June 30 of this year, and another 13 in fiscal year 1966.

The idea is that by June 30, 1966, we will have 56 camps in operation, if the present plans are carried out. Now, the hearings have not been held on the 1966 budget, so this might change. But we have been told that we are expected to activate 56 camps by June 30, 1966.

MOUNT CHARLESTON PROGRAM

Senator BIBLE. Thank you, very much.

I only have one further question, Chief, and I think someone just started commenting on this as I started to walk out of the door.

That was the details for the Mount Charleston program. I think possibly you were commenting on that.

Mr. CLIFF. Mr. Greeley was talking about that just before you left for lunch.

Mr. GREELEY. Senator Bible, last year when this was up for discussion, we made a commitment that we would do betterment work on 50 family units in fiscal year 1965. We are doing more than this. We are doing the betterment work to the 50 family units, all right. We are also building 50 new family units, and getting water systems added, and spending some additional funds on road improvement.

This area had 198,000 visitors in 1963. We do not have the figures here yet for calendar year 1964, but I expect it was probably more than that.

We are quite pleased with this. That is shaping up as a nice project.

Senator BIBLE. Well, I think you have completed the connections between the two canyons, Lee Canyon and the adjoining canyon. You have quite an extensive road program there, and I think you have completed that.

Mr. NELSON. This is my impression, Senator. This is a forest highway project, too.

PROPOSED ROAD PROGRAM, NEVADA

Senator BIBLE. What is your proposed program for next year?

Mr. NELSON. I don't have a breakdown for our overall road program which will be financed from funds in this bill.

Senator BIBLE. In your overall road program: you have said what you have done to date. What do you plan on doing in the next year?

Mr. GREELEY. I will have to find that out for the record and supply it.

(The information referred to is as follows:)

TENTATIVE DEVELOPMENT PROGRAM

20.8 miles recreation roads	$335,200
3 miles other roads	47,200
21 miles trails	97,400
Maintenance (roads and trails)	96,500
	576,300

RETIREMENT OF IVAN SACK

Senator BIBLE. Thank you very much, Chief. I did learn with great, great regret when I was in Nevada during this last year, during the recent congressional recess, a lifelong and faithful friend of mine in the Forest Service is retiring. Ivan Sack, I believe, is stepping down on March 1, if I am correctly advised. He is one of the finest public servants I have ever known, and I would just like to record that in the record here as a slight tribute to the great work he has done for you people. He has been outstanding, and I think it is going to be a loss when he steps down from the Service.

Mr. CLIFF. Ivan Sack will remain in Nevada as a private citizen, and I am sure he will continue his activity in community affairs, and we are planning on replacing him with another topnotch man that I am sure you will be pleased with.

Senator BIBLE. I am happy to hear that. Can you divulge his name?

Mr. CLIFF. His name is Edward Maw. He was on Sack's staff for several years before we made him forest supervisor of the Caribou National Forest in southern Idaho. So he is an experienced forest supervisor and he knows Nevada and he will fit right into that picture.

RELATIONS WITH PERMITTEES

Senator BIBLE. I have not had any complaints lately. I guess I ought to keep still when I do not have complaints. How are the allottees within the Forest Service coming? That was a crying problem with you people for the last couple of years.

Mr. CLIFF. I am glad to say our relations with the permittees are as fine as I can remember. As far as I can detect, we have none of the kinds of complaints we had several years ago, and those problems have been worked out with mutual effort and satisfaction, and things seem to be going along in very good shape.

Senator BIBLE. I am happy to hear that and happy to have the record reflect it. I suppose if it was otherwise we would have had mail on it. So this is good.

Thank you very much. The Senator from Alaska.

Senator BARTLETT. Thank you, Mr. Chairman.

If Senator Mundt and Senator Byrd do not mind, it will take me a very short time.

Senator BYRD of West Virginia. I would like to defer to the distinguished Senator from Alaska.

FUNDS FOR ALASKA

Senator BARTLETT. Mr. Cliff, can you tell me if the Forest Service could usefully employ more money in Alaska than has been budgeted for the next fiscal year, and, if so, where and for what, and in what amount?

Mr. CLIFF. Senator, that is an intriguing question. I am sure that the Forest Service could effectively spend more money in Alaska than has been budgeted, in virtually every activity in which we are engaged in Alaska, including recreation, road development, timber management, and our wildlife management activities. We have in Alaska, as we have on all of our national forests, a large backlog of work. We have an inventory of work to be done, and it was on this inventory that we based our national forest development program. This is a 10-year projection of jobs to be done and, as I testified this morning, that we are behind on that projected program throughout the national forest system. We have a research program going in Alaska which is part of our 10-year research program, and we have projected work ahead for that.

Research at University of Alaska

Senator Bartlett. Let us concentrate on that, then, for the purposes of our discussion. You have a relatively new laboratory located, I believe, on the campus of the University of Alaska?

Mr. Cliff. Yes.

Senator Bartlett. When was that opened, if you recall?

Mr. Cliff. The summer before last, sir.

Senator Bartlett. Is it adequately staffed?

Mr. Cliff. I will ask Dr. Harper to respond to that. We have been building the staff there. The building was designed to accommodate a larger staff than we had initially. We planned it so we could grow in a healthy way, but precisely as to where we stand on the staffing, I would like Dr. Harper to respond.

Senator Bartlett. Yes.

Dr. Harper. We do not have the laboratory at College, Alaska, fully staffed yet. As a matter of fact, our plan calls for staging the staffing in the next increment of $200,000, which would take care of fire research and insects research. These two projects are or will be headquartered there in our new laboratory at the University of Alaska.

Senator Bartlett. Are you doing anything on those subjects now?

Fire Research

Dr. Harper. We are doing work on fire research, but not on insect research. In fire research we have two men. Forest fires are tremendously big problems, as you know, in Alaska, and these are in need of more research. We have a project on fire there that collaborates with our Northern Fire Laboratory at Missoula. The basic laboratory work is done at Missoula, but there is a large amount of adaptation of basic research results that must be made right there in the big interior parts of Alaska. Our research men work with the Bureau of Land Management, with the State people, and with others in working out adaptations like use of airplanes in dropping of retardants on fires, aircraft for transport of firefighters and equipment, fire danger rating meter, lightning fire detection, and that sort of thing.

Insect Research

Now, on the insect problem, we have had, of course, insect damage in that area, but so long as the forest was not being utilized, no one became much concerned. What bothers our scientists in Alaska as well as forestry-minded people of Alaska, is that they know there is a period of about 5 years that one must go through to acquire knowledge of the life histories of damaging insects before one can possibly work out effective control measures. The day is coming soon when everyone will be much more concerned about insect depredations in interior Alaska. So we are very anxious to get ahead with our insect research at our new laboratory on the campus of the University of Alaska.

Senator Bartlett. Someone told me a year or two ago and the figure has remained in my mind that there are 180 billion feet of sawtimber in interior Alaska.

Dr. Harper. There is a tremendous amount. It is pretty difficult to arrive at an exact figure of how much of the forest land in interior

Alaska is what we would call commercial forest land; that is, growing trees of sizes and species which could be cut and sold commercially.

The latest figure I have is about 40 million acres, but there is a big, vast acreage of forest land beyond that that there is some question about. It may not be operable within practical limits of costs of timber harvesting and conversion to forest products.

Senator BARTLETT. No thorough inventory has been taken?

FOREST SURVEY IN ALASKA

Dr. HARPER. We made an extensive forest survey, not an intensive one. Our initial survey of the whole area, on a sampling basis, is good enough to get a general framework for classification of the forest land and a general estimate of the timber volume. Now we are going into specific areas and making a more detailed inventory of the forest resources.

Senator BARTLETT. All right, Doctor, since the vote bell has rung, then your statement is you could use $200,000 more at the University of Alaska?

Dr. HARPER. Yes. We could do this at our laboratory at the college.

RESEARCH AT JUNEAU, ALASKA

Senator BARTLETT. How about at Juneau?

Dr. HARPER. Juneau is the headquarters for some of our other work and there is where we would headquarter forest products marketing and utilization research. I have already referred to the marketing and utilization problems.

Senator BARTLETT. Perhaps, Mr. Chairman, since we are required to leave, the Service would be good enough to put in written statements for the record in connection with these two problems.

Senator BIBLE. Certainly. Will you supply that for the record, Doctor?

Dr. HARPER. We will.

(The information referred to follows:)

FOREST FIRE AND INSECT RESEARCH AT COLLEGE, ALASKA

Interior Alaska contains 160 million acres of forests supporting a valuable timber resource. This major part of the State is plagued with forest fires which are difficult to control and insect pests which take a heavy toll. An additional $100,000 annually is needed for research to meet the most pressing fire problems, and $100,000 annually is needed to meet the forest insect research needs. Both research functions can be housed adequately in the new laboratory near Fairbanks where the Forest Service is cooperating with the university at College, Alaska. Such increases would not fully staff the laboratory but would represent a reasonable increment toward full staffing.

The low density of people and roads make fire detection in interior Alaska costly and difficult. We have insufficient knowledge about the different weather and forest fire dangers unique to this region and consequently fire danger cannot be predicted with the necessary accuracy. Also, not enough is known about lightning and thunderstorm behavior in northern latitudes and most fires are caused by lightning strikes.

Increased funds for fire research would be used to develop radar and other electronic fire detection systems for the remote areas. Regional weather patterns would be related to thunderstorm fire probabilities in order to predict fire possibilities and fire loads. Guides would be developed to permit more efficient and reasonable fire control. The present single fire research scientist at Fair-

banks would be augmented by two scientists and some supporting personnel with these additional moneys.

Practically nothing is known about forest insects in interior Alaska except that they cause great losses. Research on forest insects is necessary to develop control methods which are both effective against the insect pests and harmless to the valuable fish and wildlife resources. In order to develop such control measures, research is needed to determine life history of the pests, to find out why the insect outbreaks occur, and to develop safe chemical controls and natural controls such as insect parasites, insect diseases, or other biological measures. Staffing of the insect research would require two scientists and additional supporting aids. No insect research scientists are financed at present.

FOREST PRODUCTS MARKETING AND UTILIZATION RESEARCH AT JUNEAU, ALASKA

Alaska now imports wood products for construction purposes, although it contains millions of acres of merchantable timber and harvests only a small fraction of its annual growth. Research is needed to provide information that would lead to expanded local and export timber markets and to improved timber industry possibilities of the State. An adequate forest products marketing and utilization project would require $80,000.

This research, although headquartered at Juneau, would involve the marketing and utilization problems of both interior and coastal Alaska. The development of new and expanded industries would be studied as related to the production of lumber, treated timbers, ties, and poles and piling. Technical and economic appraisals and studies would determine the feasibility of veneer and plywood industries and secondary products industries, such as boxing and crating, furniture and furniture stock, and pulp and paper. Plans call for two scientists to carry on the marketing and utilization research.

CLOSURE AT RAPID CITY, S. DAK.

Senator BIBLE. We will stand in recess for about 15 minutes. We have another vote, and we can proceed.

(A short recess was taken.)

Senator BIBLE. The subcommittee will come to order.

The Senator from South Dakota.

Senator MUNDT. Thank you, Mr. Chairman.

The Forest Service has announced, of course, its plan to discontinue certain work at the forest products utilization service at Rapid City. I would like to know why you are closing out this work and what do you propose as an alternative. Will forest products industries and landowners continue to get the information they need?

Mr. CLIFF. Senator Mundt, if it is satisfactory to you, I will ask Dr. Harper, who is in charge of that program, to answer that.

Dr. HARPER. It is our intention to close out the two-man forest products project at Rapid City. We do have alternative shifts in the program, however, which I think will adequately take care of the needs on utilization problems in the Black Hills; and I believe it will do it more effectively than we are in the present system.

The following changes will be made which all have a bearing on this problem.

First of all, we are centralizing all regional utilization research in the Rocky Mountain region at our Rocky Mountain forest experiment station at Fort Collins. This group will be strengthened and it will serve the utilization problems of the entire area in the Rocky Mountains from the Black Hills to the Southwest.

Secondly, we are establishing a position through our State and private activities at Denver at the regional office of the Forest Service, and this man will work with State foresters carrying the results of

research to the Service foresters in the States who are in a good position to contact landowners, small industries, and woodworking plants.

Now, South Dakota, I believe, has about eight Service foresters. They are in postion to do quite a bit of work, and it will be our job, and we will really work at it, to see that they are supplied with the latest findings of research.

PROBLEMS OF LABORATORY

There is a third activity that has a bearing on this, and that is that we are emphasizing at our Forest Products Laboratory at Madison, Wis., problems of small sizes of timber and low quality trees, which characterize much of the material in the Black Hills, because thinnings are a big problem in that area. And it has been a tough market situation to find markets for this small growth that ought to come out in thinnings in order to concenetrate growth on the better quality trees that are left.

Senator BIBLE. I think we had probably better recess, because this is another vote. I believe we will only have one more vote, if I am correctly advised. So that is on final passage, I hope when we return next time we will not be interrupted.

We will stand in recess.

(A short recess was taken.)

Senator BIBLE. The subcommittee will come to order. We anticipate no more interruptions, because the bill has been passed. So we can all relax.

Senator Mundt, did they completely answer your first question?

RESEARCH ACTIVITIES—RAPID CITY, S. DAK.

Senator MUNDT. Yes.

I have visited this Forest Research Laboratory out in Rapid City several times, and I believe there are several other research activities underway other than those which have been mentioned.

Will you discuss those?

ADDITIONAL PROJECTS AT RAPID CITY

Dr. HARPER. Yes. We have three additional projects at Rapid City which, of course, remain at Rapid City in our new Laboratory there. These projects are timber management research, watershed management, and wildlife habitat research. The wildlife habitat project serves problems not only in the Black Hills, but in the national grassland areas, in fact, all of these projects are broader than just the Black Hills, as you no doubt understand.

Senator MUNDT. Right. Are these three programs going ahead at full strength? In other words, are you making as much progress in solving the problems out there as might be desirable or possible?

Dr. HARPER. Well, of course, I am impatient. I would like to get ahead faster. We are making progress, however, in timber management research and the other projects as well. We have made good progress in working out the culture of ponderosa pine, in prescribing thinning schedules, determining growth and yield capabilities. I should mention this, also, that in our timber management research

we come very close to utilization problems and I could have said there is a fourth way in which I think we can serve those with utilization problems, because this group can identify utilization problems they come in contact with to our utilization research people. They also are good channels through which to get utilization research results back to the landowners and industries which they serve.

BUILDUP OF PROGRAMS

Senator MUNDT. Do you have any plans or estimates for building up these programs?

Dr. HARPER. Well, we, of course, want to fully staff the Laboratory as soon as it is financially feasible to do so. This will take an additional $120,000 over what we have in the budget for fiscal year 1966. I think the total, Senator Mundt, that we need there is $255,000.

Senator MUNDT. Could you effectively use the additional $120,000 at this Rapid City installation now with the existing Laboratory? Would it accommodate the work if the money were available?

Dr. HARPER. Yes. The Laboratory would accommodate the additional staff that I mentioned and, of course, we have lots of problems for research in that area. We could very effectively use it, and this would, however, fully staff the Laboratory.

Senator MUNDT. This would bring it up to the full-scale operation?

Dr. HARPER. Yes; this is the contemplated level in our 10-year research program.

LAND EXCHANGE—JEWEL CAVE—BLACK HILLS, S. DAK.

Senator MUNDT. I was interested in your discussion on page 38 of the justification concerning land exchange and ownership adjustments. I hope you will continue to work in an expeditious manner with the National Park Service in an exchange of land between the two Services required to develop the new discoveries at Jewel Cave in the Black Hills of South Dakota.

Could you tell us something about that situation?

Mr. CLIFF. Senator Mundt, I am very happy to tell you we have worked that problem out as far as the Forest Service and the National Park Service are concerned. We are in complete agreement, and we are making our recommendations to our respective Secretaries on how to handle this adjustment of boundaries of the national monument.

Senator MUNDT. There is a complete meeting of the minds?

Mr. CLIFF. Yes; no differences whatever.

CHRIST MOUNTAIN PROJECT

Senator MUNDT. Do you have the same happy report on the Christ on the Mountain project?

Mr. CLIFF. No. We still have some dissension on that project. The appeal of the decision to make that land exchange was denied by me, I rejected the appeal. We had two appeals, as a matter of fact, and they were both denied about 2 months ago.

The one appellant feels strongly enough about it that she has carried her appeal to the Secretary of Agriculture and the case is now pend-

ing before the Secretary of Agriculture. Her appeal is being reviewed in the Secretary's office right now. Until we get that disposed of, we cannot move forward with the proposed exchange.

I cannot speak for the Secretary's office, but I think that we should receive the decision shortly.

Mr. NELSON. That is her last opportunity for appeal, too.

Senator MUNDT. I was going to ask that. That is the Supreme Court. If we get over that hurdle and he follows the decision of the lower court, everything is fixed.

BARK BEETLE MENACE

On page 53, you mention your program to treat trees infested with the bark beetles. I discussed this with the witnesses the other day, and was told that the only effective treatment was to cut down the tree and burn it. I expressed the view at that time that cutting down the trees was a very slow way of providing a forest. Can you give any additional information about how you go around treating this bark beetle menace?

Mr. CLIFF. Senator, this is not the only way to solve the bark beetle problem. When a tree becomes infested with bark beetles, the only way to destroy those beetles and prevent them from infesting other trees is to destroy the tree or to spray it. It can be sprayed with chemicals, but the tree will die, if it is heavily enough infested. The object is to either spray it or to cut it and burn the bark, or to cut it and take it to the sawmill and dispose of the bark at the sawmill.

We try wherever we can to salvage the trees and put them into commercial use. Where we cannot do that, we may cut them and burn the bark or we cut them and spray the bark with a chemical solution.

The other methods that might be used are preventive in nature. It is possible through silvicultural treatment to keep a stand in a healthy silvicultural condition so that the trees are more resistant to bark beetle attack. We are also conducting research on resistance to bark beetles with the hope that we can develop resistant strains and detect the elements in a tree which tend to reject or discourage bark beetle attack. This is fundamental and long-term research, but it is one possible solution to this problem.

ESTIMATED ECONOMIC LOSS

Senator MUNDT. Have you any estimate of the total economic loss per year caused by the bark beetles?

Mr. CLIFF. It is tremendous when you take all of the forests in the country and all of the bark beetles in the country, nearly every one of our coniferous trees has its peculiar species of bark beetle that will attack it at one time or another, and some of the hardwood trees.

We know that the losses to disease and insect pests in the forests of this country exceed the losses from fire. I cannot give you a precise dollar estimate of what the bark beetles are causing in the way of loss, but I could supply some estimates of that kind for the record.

(The information referred to follows:)

It is estimated that bark beetles losses may run from $70 to $80 million annually.

COMPARISON OF FUND EXPENDITURES

Senator MUNDT. Is this pest indigenous with every area in which we have a national forest? How does it get from one national forest to another?

Mr. CLIFF. Generally, these bark beetles are endemic or natural to the forest. It is a part of the forest environment and they apparently have been there as long as there have been trees there.

Under normal conditions, they do not get into an epidemic condition and destroy a lot of timber. They may just kill a few trees, a few of the old ones that have nearly lived out their lifespan, anyway. But when you get a drought or a disaster like large numbers of trees blown down by windstorms or have excessive old age in a forest, such conditions disturb a natural balance and provide a favorable environment for these beetles to develop into an epidemic condition, and then we have trouble.

Senator MUNDT. You made a rather startling comparison when you said, if I understood you right, that we lose more trees from bark beetle per year than we do by fire.

Mr. CLIFF. From bark beetles, other insect pests, and diseases.

EXPENDITURES FOR INSECT CONTROL

Senator MUNDT. How does the money that we spend controlling these various pests per year compare with what we spend per year in controlling fire?

Mr. CLIFF. It is very much less, of course. Our total pest control budget for the Forest Service is about $12.5 million. This is what we are spending on the Federal lands and it also helps finance control work on State and private lands under the cooperative programs.

First, the States alone under the cooperative fire control program are spending something like $75 million a year, and the Forest Service on the national forests spends——

Mr. NELSON. This last year about $40 million.

Dr. HARPER. More than $140 million altogether considering private as well as public expenditures.

Mr. CLIFF. $140 million altogether on fire protection in this country. I am giving you national figures.

Senator MUNDT. Do you think there would be any prospect of decreasing this disease damage to trees if we up the appropriation a couple of million dollars and try to get the scientists to stop concentrating on the moon and concentrate on insects?

Mr. CLIFF. We have a research program going to improve control measures. I do not think there is any question but what it could be stepped up, if the money were available to do it. We are taking numerous approaches to this. One approach we are following is trying to find biological methods of control. We are seeking out better and safer chemicals to use. We are getting into the genetics approach, trying to find and develop insect- and disease-resistant trees that can be planted instead of relying on the native wild stock. We are making progress in all of these lines of activity.

Senator MUNDT. How many Federal insect laboratories do we have concentrating on pests that destroy trees?

INSECT LABORATORIES

Mr. CLIFF. Dr. Harper, will you help me on that one?

Dr. HARPER. Yes. We have six principal laboratories where our basic research is done on biological control and other aspects of insect pests. In addition to these, we have 16, what we call, secondary laboratories that work on life histories and also work out the adaptation of the basic research to the practical problems in the region. I said 16; the correct number is 12 of the secondary laboratories at the present time, one in each major forest region. The six larger programs are at the primary locations for work on various phases of insect pest research. The various pest research programs at our laboratories, both primary and secondary, are carefully coordinated from our Washington office.

Now, coming back to the matter of bark beetles, I think bark beetles are among the most difficult types of forest insects that we have to control. When epidemics come, they can be very devastating. The country of Honduras, for example, lost most of its pine region by an epidemic of bark beetles recently which are the same species of bark beetles we have in the southern pine region of our country. It shows what they can do when control measures are not used promptly.

NEW DEVELOPMENTS IN BARK BEETLE CONTROL

The most promising research outlook for control of bark beetles is that we are now attempting to develop an attractant. If we can develop a natural attractant synthetically, get enough of this in quantity, I believe that we can devise better methods of control than those we use now. We could then bring the insects to central points for more effective control measures. One of the recent developments of research has been the discovery of a powerful natural attractant among certain species of bark beetles.

Senator MUNDT. What is the financial size of your war against the bark beetle for fiscal 1965?

Dr. HARPER. On the research part, I can give you the total for all types of insect research. I may have to get that for the record. I will break the total down to show how much goes into research on bark beetles and other types of insects.

Senator MUNDT. Yes, and I would be interested in how much is spent out in South Dakota.

(The information referred to follows:)

EXPENDITURES FOR INSECT RESEARCH, FISCAL YEAR 1965, BY GROUPS OF INSECTS

Bark beetles	$1,100,000
Defoliators	940,000
Plantation insects	580,000
Wood products insects	255,000
Cone and seed insects	226,000
Insect vectors	225,000
Borers of living trees	225,000
Sucking insects	110,000
Total	3,661,000

Research on insects in South Dakota is done at our forest insect laboratory at Fort Collins, Colo. This laboratory works on damaging insect pests of the region of which South Dakota is a part.

EXPENDITURES UNDER ACTION PROGRAM

Mr. CLIFF. The other part is an action program, and we can give you a breakdown on what we are spending for bark beetles under the action program for fiscal year 1966.

(The information referred to follows:)

Amount scheduled for control of bark beetles in fiscal year 1966 is as follows:

Northern Rocky Mountain States	$50,000
Rocky Mountain States [1]	767,000
Southwestern States	90,000
Intermountain States	700,000
California	300,000
Pacific Northwest States	20,000
Eastern States	10,000
Southern States	546,000
Total	2,483,000

[1] $100,000 is scheduled for the mopup of the Black Hills beetle epidemic in fiscal year 1966. During fiscal year 1964, $1,179,000 was spent on control operations in South Dakota and Wyoming by the Forest Service and State and private cooperators. During the last half of fiscal year 1965, $450,000 will be spent completing the control work on the Black Hills beetle. This should reduce the epidemic to mopup proportions.

CONTROL PROGRAM

Senator MUNDT. That is a control program and the other is an attempt to devise new and improved methods of control.

Will you also make a report in the record as to the location of 12 stations and 6 regional stations?

Dr. HARPER. I will do this for our insect research laboratories.

(The information referred to follows:)

LOCATION OF FOREST INSECT RESEARCH CENTERS

Major laboratories:
- Corvallis, Oreg. (biological control of insects of the Pacific Northwest).
- Delaware, Ohio (control of Central States insects).
- New Haven, Conn. (control of insects of the Northeast).
- Research Triangle, N.C. (biological control and insect genetics).
- Gulfport, Miss. (wood products insects).
- Berkeley, Calif. (insecticide evaluation).

Other insect research laboratories:
- Juneau, Alaska.
- Moscow, Idaho.
- Fort Collins, Colo.
- Albuquerque, N. Mex.
- St. Paul, Minn.
- East Lansing, Mich.
- Bottineau, N. Dak.
- Athens, Ga.
- Olustee, Fla.
- Alexandria, La.
- Stoneville, Miss.
- Beltsville, Md.

FOREST PLANTING PRACTICE IN THE CENTRAL STATES

Senator MUNDT. On page 66 of the record, you discuss a booklet entitled "Forest Planting Practice in the Central States."

Is this a booklet available upon inquiry?

Mr. CLIFF. Yes, sir; we would be very happy to furnish you copies of that, if you do not have them.

Senator MUNDT. I would like to see them.

Mr. CLIFF. It is an excellent compilation of all of the technical information that has been developed over the years in the planting of trees in the Central States region, and that would include the eastern part of your State.

PONDEROSA PINE PROGRAM

Senator MUNDT. Your discussion of the results of forest products utilization research beginning on page 91 of the justification, I thought was tremendously interesting and informative, but I did not notice anything particularly dedicated to ponderosa pine.

Can you give us any encouraging word insofar as the utilization program dealing with ponderosa pine is concerned?

Mr. CLIFF. This will include work on ponderosa pine, and I will ask Dr. Harper to elaborate on that.

Dr. HARPER. We have made, I think, good progress on ponderosa pine as well as southern pine. On ponderosa pine our most recent work was in the Rocky Mountain area where we were working on floor systems, log grades, laminated beams, and that sort of thing, all in an effort to use the smaller sizes, lower quality timber in panels and built-up components that made the lumber more marketable. The poorer grades of lumber from ponderosa pine are big problems not only in the Black Hills, but generally throughout the region, including the Southwest.

Senator MUNDT. I think that is right.

BALLOON LOGGING

Last year we had a rather interesting discussion on some charts you showed about an innovation you were experimenting with involving the use of balloons as adding lifting power, and you mention it again on page 97 of your justifications. Is that developing demonstrable value? Do you intend to expand that program or is it still a pilot project? Will you talk about that a bit?

Mr. CLIFF. Do you want to talk about that, Dr. Harper?

Dr. HARPER. Yes. We are still working on the balloon research. I feel very optimistic about it, but I must say it is not operational yet, and it may be several years before it will be unless we can find ways to speed up the level of research we are putting into it. We are at the stage now where we have done some testing in the field and we know that we have further work to do on the design of the balloon, the configuration of the balloon to get stability and get the proper lifting power. We are working out further needed criteria and requirements. I think it is a matter of getting the proper design or configuration of balloon to accomplish the practical results we need. And then we still have to work out, too, the more precise situations in which balloon logging will be more profitable than some other kind. There will be combinations, balloons with some other types of logging in some places and in other places balloons will be a major use, and still other places one would probably not use balloons at all. We must develop the possibilities for use of balloons in a coordinated complete engineering systems analysis before we have confidence in the proper role of balloons in the system.

Senator MUNDT. Do you have anything that you could provide me with in the form of a narrative on this matter? Are you having trouble with getting the right kind of balloon or finding somebody willing to bet a little money that he knows how to build that kind of balloon? I have a balloon manufacturer who is very much interested in this program who read the record last time, and if you sent him some material, he could probably get in touch with you. He might have some suggestions as far as balloon design was concerned. He probably would know little about the economics of balloon logging but he is an expert on balloon design.

COOPERATIVE ARRANGEMENT WITH INDUSTRY

Dr. HARPER. We would be glad to do that. I do not believe the problem is one of manufacture at least at the present time; it is still one of working out the criteria so we may tell a manufacturer this is what appears to be needed for efficient use in logging. This is going to take some more work in the field, as well as in the office. We have a cooperative arrangement now with one of the industry companies in which we are using a balloon. We are doing the engineering research; he is financing the actual operation, and out of it he gets a few logs delivered, so this is pretty expensive for him. But, nevertheless, we are working together trying to find the answers to a practical operation. We have to go through this for a period of, oh, maybe a year or two yet.

(The following statement was subsequently received from the Department:)

HARVESTING TIMBER AND YARDING EQUIPMENT

The problem of harvesting timber from difficult access areas and the critical need for developing more suitable yarding equipment to operate in these locations exist in widespread areas of the United States. A systems engineering analysis of the possibilities of using balloons in combination with highlead cable systems has been undertaken by the U.S. Forest Service engineering research project at Seattle, Wash.

An analytical study of the mechanical feasibility of such a system and a logistical study of the economic feasibility have been completed in cooperation with Goodyear Aerospace Corp. Theoretical results of these studies indicate that balloon logging can be both technically and economically feasible under proper conditions.

Limited operational trials with subscale balloons confirm many of the theoretical study results, but a full scale operational test and evaluation program is now needed to establish actual cost and operating information and to solve engineering problems related to the balloon and its accessories.

With concerted engineering research and development effort it is likely that balloon logging can be made fully operational in about 2 years. The concept creates no new forest problems and appears to provide the means for solving many longstanding logging and associated multiple-use problems. Of particular interest is the likelihood that balloon logging may permit timber harvest on steep, highly erodible areas without significant soil damage; lower the mileage of logging roads to be built; and open up heretofore inaccessible timber stands.

BIOLOGICAL CONTROL

Senator MUNDT. We carried quite a little money in the supplemental last year, as I recall, on pesticides. Could you give us some idea on how that money is being spent, and is any work being done on biological control with that money?

Dr. HARPER. Yes. There was $1,850,000 made available last year of which about a little over a million dollars went into insect research. Most of our biological control research is on insect pests. We are making quite a bit of progress, I think, along the biological control route.

For example, we now have a new virus for the Douglas-fir tussock moth control. I think we have enough virus at least for a pilot operation. This has just emerged from the laboratory and our own control people would be glad to have as much as we can make available for pilot tests, because we do have a tussock moth epidemic that should be controlled during this coming season.

A parasite has been discovered on the elm spanworm. This is a new discovery. I hope we can find ways of stimulating the growth and culture of this particular parasite as a control agent for the spanworm.

And there are a number of others. If you would like, I could add them for the record. I can also provide a statement applying generally to our research on insect pests.

Senator MUNDT. I think that would be good.

(The information referred to follows:)

RECENT ACCOMPLISHMENTS IN BIOLOGICAL CONTROL OF INSECTS

1. A host specific virus has been discovered and tested and is now widely used to control European pine sawfly in red pine plantations.
2. A virus disease of the Douglas-fir tussock moth has been isolated and laboratory tested and is now ready for pilot field test.
3. A hybrid pine has been produced which is resistant to the pine reproduction weevil that destroys Jeffrey pine plantations.
4. A virus disease has been discovered which shows much promise against the gypsy moth.
5. Six species of introduced predators have been established in the fir stands of the Pacific Northwest and in the Southwest, two of which show promise of controlling the balsam woolly aphid.
6. Population of European pine shoot moth in Lake States was found to be reduced by winter mortality. Cultural control is achieved by pruning lower snow-covered limbs of pine.
7. A parasite of the elm spanworm has been discovered which may be used to control the pest in the future. The parasite spends part of its life cycle in an alternate host insect.
8. Commercial preparations of the bacterium *Bacillus thuringiensis* have been tested in the laboratory and found effective in controlling the gypsy moth. A number of small pilot tests will be conducted in the near future.
9. Recently a parasite has been discovered which parasitized adult bark beetles reducing by 60 percent their egg-laying capacity.

TOTAL FOREST INSECT RESEARCH PROGRAM OF THE FOREST SERVICE

Substantial progress is being made in discovering better ways of controlling forest insect outbreaks and preventing epidemic attacks. Prevention and control of outbreaks requires the application of a wide variety of direct and biological control techniques used individually or in combination; no one method provides a panacea for all problems. Thus, we are conducting research and making progress on a broad front.

In biological control we have isolated and developed formulations of viruses, bacteria, and other microbials which are highly effective in controlling such insects as the Douglas-fir tussock moth, gypsy moth, hemlock looper, and pine sawflies. Some of these organisms are in practical use, others are to be pilot tested soon.

Promising results are being obtained in study of parasites and predators. While this form of control is historically limited in success, greater biological knowledge and improved instrumentation and facilities are yielding notable suc-

cesses. A number of important parasites and predators of destructive insects have been discovered. One has been found which lays its eggs on a western bark beetle and causes heavy reduction of egg-laying capacity. Another species seriously reduces hemlock looper populations. A single individual of a predatory species was found to destroy about 400 larvae of the southern pine beetle. With modern rearing techniques and population study, we expect to be able to produce and release such species in sufficient numbers to control destructive insects.

In combating introduced pests, we are importing predators collected in other countries and releasing them here. We have established six predators which show promise of controlling the destructive balsam woolly aphid in the Pacific Northwest and in Southeastern United States.

The control of insects through proper management or culture of the forest offers another means of preventing insect outbreaks. Recently it was found that the pine shoot moth in the Lake States survives the winter only when it is in shoots below snowline. Pruning the lower limbs of pines thus reduces survival and eliminates serious infestation.

While natural forms of control are highly desirable and will receive continued emphasis, direct forms are often needed. Chemical control is often essential to deal with emergency situations or to control insects not readily susceptible to other methods. Recent research has produced a number of insecticide formulations which are quite species specific in insect killing and are not persistent in the environment. Some of these will be pilot tested this year against the spruce budworm.

New approaches to insect control are appearing on the horizon as insect research becomes more intensive. Materials are being isolated from insects or their hosts which are then used to attract destructive species. Such attractants can be used as tools for studying, surveying, and controlling insect outbreaks. Isolation and synthesis of the gypsy moth attractant is the monumental example of this research. Attractants of bark beetles, various defoliators, and subterranean termites have been isolated and demonstrated recently.

Development of techniques of sterilizing insects is another promising form of control. The irradiation technique used against the screw-worm offers some possibility. It has been shown promising against the gypsy moth. Chemicals called chemosterilants offer a great deal of promise. In laboratory and small-scale field tests these have been found highly effective against a variety of forest insects, including bark beetles, defoliators, and wood borers.

Genetic resistance, another form of biological control, offers promise against many insect pests. A hybrid pine has been produced which is resistant to the pine reproduction weevil that destroys Jeffrey pine plantations. Other hybrids, as well as resistant individuals, are being evaluated for resistance to insect attack.

The development of practical, operational methods to control forest insects and to prevent catastrophic epidemics by any one or combination of the above methods depends first on sound knowledge of the biology and ecology of insect life and the environment in which the insect and the trees it kills or damages exist. The present forest insect research program, funded at a level of $3,661,000 in fiscal year 1965, provides for specific development of measures to control a number of insect pests causing high losses to America's forests and for the study of approximately one-sixth of the insect pests with a high economic potential for damage. The full forest insect research program, as part of a national forestry research program presented to the Congress in April 1964, provides for a level of effort in forest insect research of $6,800,000.

Parasites for Bark Beetles

Senator Mundt. And you can answer this one now. Do you have any prospective parasites for the bark beetle coming along?

Dr. Harper. Yes. But the bark beetle has been a tough one.

Senator Mundt. Is he immune to——

Dr. Harper. Not entirely so. When we talk about biological control, we usually are thinking about predators or disease that attack the insect.

We do have a recent discovery of a parasite of bark beetles. We are doing further research in connection with this discovery.

With respect to other forms of control, we have not been able to do much with the bark beetle with sterilization techniques as we are doing on some of the other insects. We are having some success in the case of a few of the other insect pests with sterilization techniques. By use of these techniques we may be able to effectively control some of the pests at a lower cost.

Mr. CLIFF. One of the principal natural enemies of the bark beetle is the woodpecker. Generally, they do not come into prominent play under normal conditions. With a building up of the insects the woodpeckers tend to hold them in check. When they get out of balance, it takes some time for the woodpecker population to build up to a point——

Senator MUNDT. I see.

Mr. CLIFF. Usually a tree infested with bark beetles is dead. The only thing we can do is try to kill enough of those beetles or have the natural enemies kill enough to prevent their spread to other trees.

ACQUISITION OF REDWOOD AREAS

Senator MUNDT. One final question, I also took up with some of the other bureaus. The question about the redwood trees of this country. I notice on page 130 you discuss national forest acquisitions, and I wonder if you have any plans for acquisition of redwood areas.

Mr. CLIFF. We have a redwood acquisition area in northern California that was set up in the late 1930's. At that time we could purchase redwood at a reasonable cost and we purchased about 13,000 or 14,000 acres. Then the war came along, and the land became unattainable, the owners preferred to hold it, and we have not purchased any ever since. We had not purchased all the land within that purchase unit. We are not actively purchasing redwood at the present time.

Senator MUNDT. You have 13,000 acres of national——

Mr. NELSON. Within this redwood purchase unit; yes.

Mr. CLIFF. Yes; that is correct.

Mr. NELSON. We are doing some experimental work on redwood management on that land.

Senator MUNDT. The State of California has a redwood State park; does it not?

Mr. NELSON. The State of California has a number of State parks with some very fine specimen groves of redwood. The redwood area that we have is more of the commercial type and is not the specimen-type redwood. This is speaking of the coast redwood. As for the big tree, over in the Sierra Nevada Mountains, we have some areas there of the big tree redwood. We have set some of those aside for specimen areas.

Mr. CLIFF. We have been acquiring, as we could, additional groves of big trees through land exchange in the Sierras. We have acquired a number of tracts of big trees through land exchange procedure, in the Sequoia National Forest.

Senator MUNDT. That is one of the fantastic sights one sees in the West. I would hate to see it lumbered out and get in the hands of private ownership so the public would not be able to see it.

Mr. CLIFF. I do not think there is any danger of that, Senator. There is 128,000 acres of land in public ownership that supports red-

wood, and of that, about 50,000 is predominantly redwood, most of this is in State parks. There is some in National monuments, for example, the Muir Woods, and there is some in the National Forests, and these lands will be protected so that there will be redwoods. There is a movement on foot now, as you know, to expand the public ownership of redwoods to preserve more of them.

This is in the province of the Park Service, and I do not think we would want to discuss it.

Senator MUNDT. That is all. I am happy to turn you over now to the tender and eager hands of the Senator from West Virginia.

Senator BYRD of West Virginia. Thank you, Senator Mundt.

STAFFING AT PARSONS, W. VA.

My first question will be directed to Dr. Harper.

Last year, Dr. Harper, you testified $150,000 would be needed to complete the full staffing of the watershed management laboratory at Parsons. Our committee recommended the addition of this amount of funds to the bill, and that figure of $150,000 was reduced to $75,000 in conference.

Do you still feel you need $75,000 to fully staff the laboratory at Parsons?

Dr. HARPER. Yes, sir, we do need the additional $75,000 to fully staff the laboratory at Parsons. This would accommodate two projects, watershed management and timber management, both of which would be increased. One of them by $40,000, and another one, I believe, $35,000.

Senator BYRD. The latter would be the timber management project?

Dr. HARPER. That is correct.

Senator BYRD. If $75.000 were made available, would the additional personnel tax your facilities at Parsons?

Dr. HARPER. No, these facilities at Parsons were designed for the size program that we contemplated last year, and as you say, the committee did recommend the $150,000. That was to fully staff the laboratory. We got half of it, and this other half would merely bring us to full staffing that we contemplated in the 10-year program we developed.

Senator BYRD. How many men do you presently have at Parsons?

TOTAL PERSONNEL OF LABORATORY

Dr. HARPER. We have eight scientists there and I am not sure I know the total. Yes, I have the figures here in my notes. The present staffing is 8 scientists and 10 supporting personnel. The total for the whole laboratory will be 24; that is the capacity of the laboratory.

Senator BYRD. Which would be 8 scientists and 16 supporting personnel?

Dr. HARPER. That is correct. We have all of the scientists at the present time, so the additional $75,000 would be for support personnel plus operating funds to effectively operate the laboratory.

Senator BYRD. You would not be adding any scientists?

Dr. HARPER. No, sir. We would, however add six technicians.

Senator BYRD. Did the Forest Service request of the Department the additional $75,000; and, if so, did this request go forward to the Bureau of the Budget?

Dr. HARPER. Yes, this amount was included in the recommendations that went to the Bureau of the Budget.

MARKETING RESEARCH AT PRINCETON, W.VA.

Senator BYRD. We are proud of our marketing research laboratory at Princeton, Dr. Harper, as you are well aware, I am sure, and our people down there are extremely encouraged by the work that is being done there, and we feel that it is producing real results. How much is in the budget for the marketing research work that you are doing at Princeton?

Dr. HARPER. $646,000 is the total fiscal year 1966 budget estimate for the Princeton marketing laboratory. With the increased funds in our 1966 budget, we are now fully staffed for the marketing studies at Princeton. We are in good shape there to go ahead rapidly on the solution of the major marketing problems.

Senator BYRD. This amount will permit you to fully staff your operation there?

Dr. HARPER. That is correct insofar as marketing research is involved.

Senator BYRD. What has been the principal emphasis in your program there, and could you state for the record briefly something concerning the progress you are making?

Dr. HARPER. The principal emphasis, of course, has been on developing more markets, expanding the old ones, developing new markets, and getting more industry established in the Appalachian region to make fuller use of a timber resource which is available for such use and, of course, this in turn supports employment and supports the general economy of the region.

ACCOMPLISHMENTS

We have accomplished quite a number of things, and I appreciate the nice things you said about the laboratory. We feel very proud of our crew at this laboratory, and their accomplishments.

One of the first things we undertook was a study of selected areas in the Appalachians, some of them were in West Virginia, as you may recall, where we made a detailed analysis of the timber resource to show what was available. The results were reported and made available to industries for study of the feasibility of expansion of existing or of establishment of new wood industries.

POSTS FOR GUARDRAILS

Another accomplishment has been the work on use of treated wooden posts along highways to support guardrails. The highway department had assumed that steel posts were cheaper to install. Results of our study showed that installed treated wooden posts would be at least 10 percent cheaper than the steel posts. Moreover, use of wood could utilize a local raw material in abundance. I understand there is a

new company established to manufacture and treat posts for use along highways and perhaps for other purposes.

This accomplishment in itself is rather small, but it is an example of a number of things that we have done in the Appalachian territory.

Wood for Furniture and Flooring

We are now deeply involved in studies of the use of wood in furniture manufacture. Also, I think one of our biggest studies we have undertaken as well as perhaps some of the most significant results achieved are in connection with our study of use of wood flooring. Oak wood flooring has been a principal market outlet for much of the timber in the Appalachian region. Oak flooring, however, has been declining in the market for a number of years now. We made a searching analysis of the problems and difficulties encountered. We have developed a number of leads which, if further developed, may reverse this unfavorable trend in the use of oak flooring.

Senator Byrd. You feel that your study will reveal the reasons why hardwood flooring is losing its earlier place in the market?

Dr. Harper. I think that is right. There are a number of problems involved, such as using wooden floors over concrete slabs, that have presented difficulties. Cost of installation, sound transmission, and other problems were also encountered. But a rather interesting result of the survey we made is that many homeowners preferred wooden floors. Much of the resistance to wood floors appears to come from contractors who install them and also must make good any deficiencies when installations are not satisfactory. They are experiencing real problems in getting the floors properly installed at a reasonable cost. This in turn may account for much of the switching to something easier to handle. These problems are essentially wood utilization problems.

Utilization Research

Some of these problems have been referred to our Forest Products Laboratory at Madison, Wis. They are going to work on them during this coming year. Some of the utilization problems ought to be attacked by a utilization research group at Princeton.

Senator Byrd. So, all of your problems are not in the area of marketing, rather, some of them are in connection with utilization?

Dr. Harper. That is correct. This conclusion is emphasized by our experience during this past year. We thought this to be true and we had visualized a close association of regional utilization work with marketing in the development of our 10-year program. But we were not as certain as we are now that a certain amount of utilization research is needed from the start to go right along with the marketing research to get the full answer on some of these problems.

Marketing research can identify the problems, but it cannot solve all of them by itself. We have to have wood technologists on the staff, too, who are organized to work on the marketing-related utilization problems.

Senator Byrd. I take it you are encountering some wood utilization problems in connection with your marketing research program at

Princeton, and these problems apparently fall outside the scope of your marketing research activity?

Dr. HARPER. That is correct.

Senator BYRD. I would suppose further, then, that a wood utilization research program would go hand in hand with your marketing research activity at Princeton?

Dr. HARPER. That is what we contemplate at Princeton whenever this is possible to do; yes, sir.

Senator BYRD. You are not presently doing any utilization research at Princeton?

Dr. HARPER. That is correct. We will continue to have work done at the Forest Products Laboratory at Madison of a more basic nature. but there is need also for a utilization research unit to work right on the ground day to day with the marketing folks to serve the utilization aspects of the problems.

Senator BYRD. There is a need to have such a program in conjunction with the marketing research program at Princeton?

Dr. HARPER. That is correct; that is our plan.

OVERLAPPING OF ACTIVITY

Senator BYRD. Would there be any overlapping of activity as between the Princeton Laboratory and your Madison, Wis., Laboratory?

Dr. HARPER. No. I think this is very carefully worked out in our plans for the development of the programs. They will complement each other, but there will be no overlapping.

Senator BYRD. There would be a close liaison?

Dr. HARPER. There will be a close liaison, and that is another reason for the utilization unit at Princeton, that it provides that liaison between our Madison Laboratory and the marketing project; not only the liaison, but they would be in a position to do the pilot plant work that must be done in the field.

Senator BYRD. So, it would not only complement the work you are already conducting at Princeton, it would also complement the work being done in Madison, Wis.?

Dr. HARPER. Yes, sir.

UTILIZATION RESEARCH PROGRAM FUNDS

Senator BYRD. How much money would be required to get your wood utilization research program off the ground the first year?

Dr. HARPER. Well, of course, the program that we ultimately plan there would be approximately $300,000. We can handle this by $100,000 units. I do not think we could do it less than by increments of $100,000. This would provide a team of three professional research men with technicians and so on. It is about the unit that one needs for pilot plant operation work. I would say $100,000 is the minimum we would need to adequately start such a program at Princeton.

Senator BYRD. And these two programs, utilization and marketing at Princeton would work together then to develop practical measures to cope with the problems of expanding markets not only in West Virginia, but throughout the Appalachian region?

Dr. HARPER. That is correct, throughout the Appalachian region on the associated utilization and marketing aspects of the problems with which the work at Princeton deals.

Senator BYRD. Are you prepared, Dr. Harper, to begin the wood utilization research program at Princeton if the $100,000 were to be made available in fiscal year 1966?

PILOT OPERATION

Dr. HARPER. Yes, we could get started on that work just as quickly as funds are available for it. As a matter of fact, we have one pilot operation in mind that we would like to start with—the manufacture of chipboard. We have basic research at our Forest Products Laboratory nearing the stage now where it could be taken to the field for pilot operation on a rather small scale, but big enough scale to develop the criteria and other requirements for a possible commercial operation. This work is deemed essential before a commercial operation could pick it up for further development, including acquiring the necessary hardware and other material for a larger pilot plant test and regular operation.

Senator BYRD. Would you need additional space, Dr. Harper, the first year, or do you have space available at Princeton?

Dr. HARPER. No, we have space available at Princeton. As you may recall, we have a methods testing laboratory alongside our main laboratory. The utilization project would operate mainly in this methods testing laboratory. This would be their laboratory area. Some work would be done in commercial plants as well.

Senator BYRD. How many persons are presently working in the Princeton Laboratory, scientists and supporting personnel combined?

Dr. HARPER. I am not sure I have that figure with me, Senator Byrd.

Yes, I have it here. Fiscal year 1965, total of 23.

ANTICIPATED STAFF EXPANSION

Senator BYRD. Twenty-three. Now, with the moneys that are included in the budget estimate for fiscal year 1966, by how much would you expect to expand this number?

Dr. HARPER. To a total staff of 53 in fiscal year 1966.

Senator BYRD. Fifty-three?

Dr. HARPER. Yes.

Senator BYRD. Scientists and supporting personnel?

Dr. HARPER. That is right, according to this table, 19 scientists and 34 supporting personnel.

Senator BYRD. How many additional persons would be involved in initiating your wood utilization research program?

Dr. HARPER. Approximately seven, I believe—three engineers and wood technologists, either wood engineers or wood technologists, and about four support people.

Senator BYRD. This could be accounted for by the additional $100,000?

Mr. HARPER. Yes.

Senator BYRD. When you reach your maximum effort of expenditure of $300,000, how many persons would be involved in the wood utilization research activity?

Dr. HARPER. It would be about 3 times that amount, I said 7 for the initial attack; it would be about 21 for the full utilization program. It could vary a little from that, Senator Byrd, because when you get into pilot plant operations, other extra expenses are involved besides that for personnel. Some of these services can be contracted for cheaper than they can be done directly by our personnel, so it is hard to translate this activity entirely in terms of number of people required. I can do it more easily for the number of engineers and wood technologists that are needed than I can for the total support people.

Senator BYRD. So, your combined operation within 3 years from the initiation of the wood utilization research activity would require an expenditure as you envision it now at Princeton of how much?

PROJECTED 1966 BUDGET

Dr. HARPER. That s the marketing and the utilization?

Senator BYRD. Yes. I am just looking ahead now.

Dr. HARPER. Well, we have in the 1966 budget $650,000 approximately which fully implements the marketing research. I would say $300,000 in addition to that which would be pretty close to $1 million.

Senator BYRD. Around $1 million?

Dr. HARPER. Yes.

NEW WOOD PRODUCT INDUSTRIES IN WEST VIRGINIA

Senator BYRD. Do you have information or could you supply information for the record, Dr. Harper, which would indicate the number of wood products industries which have come into the State of West Virginia as a result of, or certainly in part as a result of, the work that has been carried on at the Princeton Laboratory?

Dr. HARPER. I would have to do that for the record. There have been a number of them. I have not seen a tabulation on that since a couple of years ago, I believe, when we got up a similar tabulation for you.

Senator BYRD. Yes, you did.

Dr. HARPER. Which much to everybody's surprise, I believe about 41 new industries or expansions of existing ones had been established at that time.

Senator BYRD. I had thought it was 42 or 43. I think it would be interesting for the committee to have such information, if you can bring it up to date.

Dr. HARPER. I will be glad to try to get that information for you.

Senator BYRD. If it will not be too much trouble.

(The information referred to follows:)

MARKETING RESEARCH LABORATORY AT PRINCETON, W. VA.

The Marketing Research Laboratory at Princeton has provided information to a considerable number of wood-using firms and individuals considering investments in new or expanded facilities in West Virginia but no data are available on the number of new wood-using facilities established recently in this

area or the reasons for location in the area. A special survey would be necessary to obtain such information. The research program of the Princeton Marketing Laboratory is designed to assist established wood-using plants, as well as new firms coming into the area, by providing information from research studies and other assistance aimed at improvement of processing and marketing practices throughout the timber industries.

MORGANTOWN, W. VA., LABORATORY

Senator BYRD. Now turning to Morgantown, I believe the appropriations for planning was in the amount of $31,500 for the laboratory.

Dr. HARPER. That is correct.

Senator BYRD. And I understand you have a site under lease at the Morgantown University.

Dr. HARPER. Yes.

Senator BYRD. And the planning is completed and you have in the budget a request for $400,000-some-odd?

Dr. HARPER. $468,000 for construction.

Senator BYRD. $468,000. Now, when would construction start, Dr. Harper, and when would you like to complete the project?

Dr. HARPER. Construction would start just as soon as we have the funds in our 1966 appropriation and can let the contract. This would probably be about 2 months after July 1. Let us say in September. It would take, I think, 12 to 14 months to complete the construction once it starts. So about 16 months would be an overall lapse of time.

Senator BYRD. Between September and November or December of 1966?

Dr. HARPER. That is right.

Senator BYRD. Do you have any forest engineering research work that is presently being conducted at the University of West Virginia?

Dr. HARPER. Yes, we do. Morgantown is the headquarters for our engineering research for the Appalachian region. We have a project leader on the job. He has been devoting his time recently to laying out a broad approach, a plan to be followed in the development of the engineering research as soon as we are able to get underway in a fuller capability at Morgantown.

FUTURE STAFFING LEVEL

Senator BYRD. Could you use additional staffing at this time?

Dr. HARPER. I think we are somewhat in the same position here as we are in utilization research at Princeton. We could use a bigger staff at the present time. We have quite a job ahead in our forest engineering research, first to work in the official field in exploring alternative systems of engineering for timber harvest and transport, involving perhaps some new equipment and perhaps use also of existing equipment which might need modification. These studies may take a year or two depending on the level of effort that we can put into it before one could fully use laboratory facilities such as we are constructing at Morgantown. Currently our project is housed with the University engineering department.

In short, we are in shape to go ahead without waiting on this new laboratory to be completed. We could do needed work for a year or perhaps a year and a half on the office and field work involved in the

conceptual and theoretical work plus field studies before we get to the actual business of designing and modifying equipment and methods to fit the engineering system or systems which show promise of marked improvement.

PERSONNEL UTILIZATION

Senator BYRD. How many persons could you utilize effectively at this time, and prior to the opening of the new laboratory at Morgantown?

Dr. HARPER. Here, again, I would not want to attempt it under a minimum of three forest engineers which would require $100,000, including support expenses. We work in cooperation with the university. We would probably use some of their engineers and technicians, including graduate students, whom we would support out of funds available for the project. We would expect to have cooperation of some of the industries, particularly some of the machinery interests, once we have developed the engineering systems and have indications of new equipment that would be required for further development.

I think that an addition of about three men there now would get us ahead, but here again we could go faster than that. I would like to have as much as $400,000 for this project, I think we could very effectively use it.

Senator BYRD. You could use $400,000?

Dr. HARPER. Yes.

Senator BYRD. You could not use it this coming fiscal year, though.

Dr. HARPER. I could; yes.

PERSONNEL AND EXPENDITURES OF MONEYS

Senator BYRD. What is your objective insofar as personnel and the expenditure of moneys at Morgantown eventually when you get the new laboratory in full operation; would it be something on the order of $400,000 annually, or would it be more?

Dr. HARPER. Would you want me to add this for the record? I have found the figures here now; $400,000 is the full program planned on engineering research and $140,000 on wildlife habitat research.

Senator BYRD. So that would be about $540,000 or $550,000?

Dr. HARPER. Yes; that is correct.

Senator BYRD. As I understand you, a wise approach to the matter involving your new laboratory at Morgantown would be for an appropriation of moneys to be made for use in fiscal year 1966 so that you could proceed with the setting up of additional staffing and be ready to move in the doors the moment they open?

Dr. HARPER. That is right. I think that would be a wise thing to do, if possible. In fact, we contemplated this at the time we made our budget estimates for 1966, but we were not able to work this requirement into our budget under the present financial situation. We do want to move ahead here just as rapidly as we can.

Senator BYRD. Well, the upshot of failure to provide this money would simply be that you would be delayed in getting a full start?

Dr. HARPER. That is right.

Senator BYRD. And the benefits which would be expected to accrue from your work there will accordingly be delayed?

Dr. HARPER. Yes.

Senator BYRD. So you could use the money if it were made available by the Congress in the forthcoming year, you could use it effectively, and I would presume from what you have said that it would be wise to proceed as early as possible?

Dr. HARPER. Yes, sir.

Senator BYRD. Thank you, Dr. Harper.

Incidentally, has Dr. Marquis departed on his journey to Germany?

Dr. HARPER. Not yet. He is looking forward to it, though.

OBSERVATION TOWER AT SPRUCE KNOB

Senator BYRD. Now, Chief Cliff, if I might ask just a few additional questions of someone in your group, I would like to direct a question first of all concerning the proposed observation tower at Spruce Knob.

What is your latest estimate of cost for this facility?

Mr. CLIFF. I think I will ask Art Greeley to give you this information if he has it.

Mr. GREELEY. Senator Byrd, we have some information on this; I have a figure of $100,000 that is the estimated cost to erect an observation tower at Spruce Knob.

Senator BYRD. Last year, Mr. Greeley, I am under the impression that the amount that we talked about was $75,000.

Mr. GREELEY. Yes; I believe I recall that that was the figure, sir.

Senator BYRD. When we talk of $100,000, does this mean that the estimate has been upwardly revised or was the $75,000 discussed last year——

Mr. GREELEY. I think it was a more preliminary figure.

Senator BYRD. Could you provide a breakdown of the costs?

COST FOR CONTRACT CONSTRUCTION

Mr. GREELEY. Well, the information I have here is that there would be about $75,000 as the estimated cost for contract construction, and $5,000 for plans, specifications, and engineering supervision. Then some additional related facilities such as sanitation, walks, and landscaping for an estimated $20,000, which totals to the $100,000 figure.

I have an idea, Senator Byrd, that last year when we were talking to the amount of $75,000, the need for the walks, the landscaping, and sanitation, and so on probably had not been thought all the way through.

Senator BYRD. This money is not in the budget, I take it?

Mr. GREELEY. This is correct, sir.

Senator BYRD. If it were made available, could you effectively use it in the forthcoming fiscal year?

Mr. GREELEY. Yes; our information is that we could use it.

Senator BYRD. In your judgment is this a desirable project for the area?

Mr. GREELEY. We have so stated before, and we still think so; yes, sir.

Senator BYRD. Well now, I know something about Spruce Knob, having seen it and flown over it with Mr. Droege last year, Chief Cliff.

BENEFITS OF TOWER

What benefits could be expected to accrue from an observation tower on Spruce Knob? Why is one recommended?

Mr. CLIFF. I think I would like to comment on that, Senator. Spruce Knob is the highest point in West Virginia. It is now visited by large numbers of people. When you get on top of Spruce Knob, it is a rather flat-topped peak, and you cannot see over the shoulders of it very conveniently, although on a clear day you can see a long distance up and down the Appalachian chain. It is quite a spectacular sight.

And an observation tower there, of course, would enable people to get up high enough above the ground to get a better view of the surrounding country, the canyons and the mountain slopes surrounding this mountain.

I think it would be quite an attraction. There are a lot of people who go up there now even though they must use very rudimentary sanitation facilities. I have been there myself, and my family, and hiked around on top of the mountain. And to accommodate the number of people we are getting there now we do need better trails and more sanitary facilities.

The tower will be an added attraction to take care of the interests of people that go up there.

JUSTIFICATION OF PROJECT

Senator BYRD. So you would consider the facility on the whole to be a necessity to accommodate the increasing number of people who are visiting the area?

Mr. CLIFF. I think it would be a very attractive addition, it would probably even attract more people and hold them there.

Senator BYRD. Well, we feel that we have a great potential insofar as tourism is concerned, and we also feel that we really have not scratched the surface, and as the population centers which are very close by continue to grow and expand and people seek more and more to get out on weekends and enjoy the spiritual and healthful values of country living and viewing the beauties of nature, we certainly would concur that it would be well to have this facility at Spruce Knob. Our people in the area are interested in it and enthusiastic about it, and I have also been enthusiastic.

PRESIDENT'S MESSAGE ON NATURAL BEAUTY OF OUR COUNTRY

Mr. GREELEY. Senator Byrd, you perhaps recall that this area was listed in the President's message on natural beauty of our country as an area for which he would recommend funds be used from the Land and Water Conservation Fund Act for land acquisition. We have thought of this as an area that is important for development. In fact, we have thought of this as an area where visitor information facilities could well be developed at some date in the future.

It seems to us this all fits together in a project that would be a pretty nice development and recreation package.

NATIONAL RECREATION AREA

Senator BYRD. I have a bill, S. 9 I believe it is, that would establish a national recreation area in the vicinity of Spruce Knob and Seneca Rocks, so the location of an observation tower on Spruce Knob would certainly be a fine addition and integral part of this whole dream as we like to view it.

You mentioned an information center. How is the one coming along down at Cranberry Glades for which we provided money last year?

Mr. CLIFF. We are moving ahead on that, Senator, and Mr. Hendee can give you the details as to step-by-step progress.

CRANBERRY GLADES

Mr. HENDEE. Senator Byrd, this Cranberry Glades visitor center has been designed, and our architectural plans have been completed. We are working on the interior and interpretative detailed plans. These are being prepared and will be finished very shortly. The contract will be let and construction started this coming spring. We expect by the end of the summer to have this visitor center fully completed so it will be operational, fully operational in the 1966 summer season. This should be a very fine visitor center.

Mr. CLIFF. When we get this finished, I will give you the same kind of invitation we extended to Senator Hayden, and I invite you now to be our guest when we dedicate it.

Senator BYRD. Thank you, Chief Cliff, I will not insist that you make it following congressional adjournment if it is really prior to that time. I would just hope it would be on a Saturday.

INFORMATION CENTER, SPRUCE KNOB

Now with reference to an information center which I believe you indicated might be advisable in the Spruce Knob area, were you thinking in terms of something like we have at Cranberry Glades?

DESIRABILITY OF LOCATION

Mr. GREELEY. Without having any specific thoughts, this would be a good general location. This would be the sort of place where it would be desirable to have that kind of facility.

Mr. CLIFF. I am not sure whether it should be on Spruce Knob or some place else in that general area. If the national recreation area which you propose in your bill should materialize, that takes in a considerably larger area than just Spruce Knob. We would need to study that whole complex and attempt to establish our visitor center where it would intersect most of the travel of the public which would be going to the area. It might be down in the valley, near Seneca Rocks, or at some other point, rather than on Spruce Knob itself? I think it is premature right now to try to make any decisions on where that would be located. It would depend on a lot of things—on whether the national recreation area is set up, how fast necessary land could be acquired, and so forth.

Senator BYRD. So, it is a little early for any definitive planning with regard to appropriations for an information center.

Mr. CLIFF. Yes, sir; I would say so.

BRANDYWINE RECREATION AREA

Senator BYRD. Now, when Mr. Droege and I went over to the Brandywine Recreation Area last year, which was constructed with APW funds, we dedicated the opening of that facility there, we had a very good turnout on that day, and I understand that the attendance has already exceeded or is expected to soon exceed the capacity. Can you tell me what has occurred since last year's use or during last year's use?

Mr. GREELEY. The expectation has been realized. The area was used to capacity and our information is that more than 40,000 would-be visitors were turned away.

Senator BYRD. And what is the capacity?

Mr. GREELEY. Well the capacity when full developed, it will accommodate 35,000 visitors. Of course, the work that was done this past year did not bring it to the point that it was fully developed.

TROUT POND AREA

Senator BYRD. Yes. Well, if 40,000 were turned away, we should have a facility up around Trout Pond in Hardy County, Chief Cliff, to accommodate these people.

I asked your staff to supply me with a list of potential impoundment sites in the national forests in West Virginia. I asked for this last year, and this was supplied.

The Trout Pond area was one of the locations that were enumerated in this list. I am especially interested in the Trout Pond area which is located in, I believe, the George Washington National Forest.

Mr. CLIFF. On the West Virginia side.

DEVELOPMENT OF POND

Senator BYRD. Yes. Now, could someone give us a brief picture of the proposed development of Trout Pond and its present status?

Mr. CLIFF. I do not have that in my own mind, do you have information on that, Mr. Greeley?

Mr. GREELEY. Yes; the regional people, Senator, have provided us with this outline of information. They think that a good plan would be, in addition to the protection of Trout Pond, which is a natural lake in West Virginia, to provide an impoundment below the present lake. In addition the plan would provide recreation facilities that would take care of 150 units for tent and trailer camping, 100 units for picnicking, a beach, and a parking lot. The thinking of the regional people is that the facility as thus planned would accommodate about 100,000 visits a year. If the use would go above that point, then this plan would leave room for expansion so that additional facilities could be added to take care of more use. An increase in use could be anticipated.

Senator BYRD. What type of impoundment do you have in mind?

Mr. GREELEY. This would have to be a small dam and reservoir to artificially create a lake in addition to the natural lake.

Senator BYRD. It would be an earth core dam.

Mr. GREELEY. Yes, sir.

Senator BYRD. What is the estimated cost of the development?

ESTIMATED COST OF DEVELOPMENT

Mr. GREELEY. The estimate is: The impoundment itself would cost around $450,000; the recreation facilities, camping, picnicking and related facilities would cost $800,000; and the roads and trails and parking spurs would, we believe, cost about $250,000; making a total of $1,500,000.

Senator BYRD. Are any of the funds included in the fiscal year 1966 budget?

Mr. GREELEY. No, sir; they are not included in this budget.

Senator BYRD. When you say that this is preliminary planning, do you mean to say that a portion of this money could not be used in fiscal year 1966 effectively?

Mr. GREELEY. Well, this is a big enough project so that were it to be undertaken, it should be done in steps.

For instance, I am sure that our people have not done enough detail planning about a dam for me to be able to tell you, "Yes, we have a damsite and a design all worked out and in the plans," because I think that is not correct. Clearly this is a project of a sufficient size so that it should logically be broken down and undertaken in steps, with a more detailed planning job to do first.

PLANNING FUNDS

Senator BYRD. How much money would you need for this planning job?

Mr. NELSON. I talked to Mr. Droege on the phone the other day. He thought the full planning job could be done for about $50,000. That would include the remaining recreation planning as well as the design of the dam, including the core drilling that is necessary. That is about the same cost we had on a similar type project in Illinois, where we did that type of planning.

Senator BYRD. This is a necessary first step, and if the moneys were available in fiscal year 1966 you could proceed forthwith?

Mr. GREELEY. Yes, sir.

ATTITUDE OF FOREST SERVICE ON PROJECT

Senator BYRD. I take it this is a project that the Forest Service looks on with considerable interest and enthusiasm?

Mr. GREELEY. Senator, it is. This is the type of thing which by and large we have not been able to plan on doing because we had so many places in the national forest system where recreation use has built up to the point that we have urgent sanitation problems, policing problems, and maintenance problems that must be taken care of first.

OVERUSE OF PRESENT FACILITIES

We have problems of people overusing our present facilities and spilling out into the adjacent forest land where there is not adequate space to take care of them. So we have been using the funds which are available to meet these almost crisis-type, urgent demands, and have felt that we were not in a position to accord priority to the creation of impoundments and establishment of new water areas. That does not mean we are not interested in doing this. We have not been able to see that we were in a position to give it high priority. But we are interested in being able to construct some recreation water facilities.

PRIORITY OF PROJECT

Senator BYRD. Are you in a position to give the high priority in the event the $50,000 were furnished?

Mr. GREELEY. We could do the planning.

Senator BYRD. You could move forward with the planning?

Mr. GREELEY. Yes.

Senator BYRD. The money could be utilized effectively and just as economically as at a later date?

I take it you are not trying to discourage the committee from appropriating $50,000 for fiscal year 1966?

Mr. GREELEY. We think it would be most desirable to proceed with planning on the Trout Pond project.

RECREATION DEVELOPMENT NEED

Mr. NELSON. I might add, Senator Byrd, in my work with the Bureau of Outdoor Recreation in connection with the acquisition of lands for recreation purposes, that this area is one of the deficient areas where they feel, from their overall studies, we should have more recreation development and we have to take care of an increasing number of people close to population centers. They have made quite a study by subcensus regions of the United States, and this is one area where they are urging us to do more in the way of acquisition for the recreation, and it follows we have to have the recreation developments. This would be the type of development that would fill that need and help meet the overall national need for recreation improvement.

Senator BYRD. So in your judgment this type of project, and this specific project, as a matter of fact, would dovetail into the overall approach to a stimulation of the economy of the Appalachian area?

LAND AND WATER CONSERVATION ACT FUNDS

Senator BYRD. Mr. Nelson, could moneys under the Land and Water Conservation Act be used for this project?

Mr. NELSON. For the acquisition of land in this project, if that is necessary.

Senator BYRD. But only for the acquisition of land?

Mr. NELSON. Yes. For the Federal part of the land and water conservation fund, funds are not available for development but only for acquisition of land.

Senator BYRD. So, we have no other place to which we might turn in an effort to secure moneys for either the observation tower or the Trout Pond development.

Mr. NELSON. That is correct.

Senator BYRD. All right.

Now, I just have a couple of other fast, quick questions here.

ADDITIONAL IMPOUNDMENTS IN WEST VIRGINIA

Would you bring us up to date for the record on the progress you have made with regard to the additional impoundments which were included in the list last year and as to the status and as to the amount of moneys that could be used in each case for planning. I have reference particularly to Hills Creek in the southwest portion of Pocahontas County, South Branch, in Grant County, and Laurel Fork in Randolph County.

Mr. GREELEY. Senator Byrd, our people picked rather carefully over the list which was developed at your request last year, and we have made some studies of Hills Creek and Laurel Fork.

SOUTH BRANCH DEVELOPMENT

As far as South Branch is concerned, we have been out on the ground and have determined a possible site for a dam, but it has not gone much further than that. We do not have with us today any dollar estimates for possible work at the South Branch area.

HILLS CREEK DEVELOPMENT

As far as Hills Creek is concerned the feasibility study is about complete and indications are that it is favorable. Our general plan is that there would be a reservoir and dam costing about $315,000; recreation facilities for camping, picnicking, sanitation facilities, and water system that would cost about $350,000; access roads, and parking spurs, that would cost in the vicinity of $190,000; the total cost would be $855,000. That estimate is for the Hills Creek site.

LAUREL FORK DEVELOPMENT

Then for the Laurel Fork site, in Randolph County, our folks think that a 70-acre impoundment could be developed there. It would have camping, picnicking, fishing, and swimming. It would accommodate at least 50,000 visitors annually, and I would judge that this figure is for a first phase development, and there could be later development phases which would accommodate more visitors than that. Again, on the basis of a feasibility study which is about complete and that looks good, our estimates are: The impoundment would cost about $465,000; camping, picnicking and other recreation facilities would cost $125,000; and access roads and parking facilities would cost $350,000. That makes a total in round figures, of $940,000.

I am sure that the figure of 50,000 visitors annually could be increased with a second phase development of recreational facilities.

We do not have comparabe information on the South Branch site, Senator Byrd.

Senator BYRD. Thank you.

PLANNING FUNDS FOR THREE PROJECTS

Could you utilize any planning moneys for the three?

Mr. GREELEY. I think planning money would be the thing to think about with reference to these projects. Our information is that we could definitely use planning money for Trout Pond and I believe we could also use planning money in fiscal year 1966 for the others.

Senator BYRD. Could you give us a pretty definite figure?

Mr. GREELEY. I believe that a figure of $50,000 to $60,000 on each of these would be probably about the right level for planning. The figure for Trout Pond, where some planning has been complete, is definite.

Senator BYRD. Do I properly infer that while you are not attempting to designate any priority to any one of the four, the Trout Pond facility might be a little further along or if completed might produce the ——

Mr. GREELEY. I think it is one that would produce a flow of benefits sooner.

SELECTION OF PROJECT

Senator BYRD. Let me put it this way, if the committee and the Congress were to appropriate moneys for planning for only one of the four facilities for fiscal year 1966 which one would you think would be most advisable?

Mr. GREELEY. I think Trout Pond definitely would be in priority over the others.

Senator BYRD. Would you agree, Mr. Nelson?

Mr. NELSON. Yes; I certainly agree. We have already done enough preliminary engineering at Trout Pond to know that it is feasible. As for the other three, there might be an overall less cost to the Government if all three were engineered in the same fiscal year. I am speaking of such engineering that we might contract, and it would include core drilling, and soil analysis and design of dams. It could result in less overall cost as far as the engineering portion of the planning on these three projects is concerned.

Senator BYRD. If you do not have the figure at this moment please supply it for the record. What amount would you think would be necessary for planning of all four in 1 year?

Mr. NELSON. That would be a portion of the $50,000 to $60,000 for each project, which would be between $200,000 and $240,000 altogether. I understood from Regional Forester Droege that this would include some actual recreation planning as well as designing the dams themselves. We will arrive a figure for each one of the dams and put it in the record for you.

(The information referred to follows:)

ESTIMATED COST OF CONSTRUCTION, PLANNING, AND DESIGN OF THREE RECREATION PROJECTS IN MONONGAHELA NATIONAL FOREST, W. VA.

Name of project	Estimated total cost of construction	Estimated engineering, design, planning costs [1]	Estimated total planning costs
Trout Pond	$1,500,000	$50,000	[2] $50,000
Hill Creek	855,000	20,000	45,000
Laurel Fork	940,000	30,000	40,000

[1] Includes dams only.
[2] The recreation planning for Trout Pond has been done; therefore the need is for dam design and engineering.

PLANNING FUNDS

Senator BYRD. But can you supply a lump sum figure which would enable you to proceed with planning on all four in fiscal year 1966?

Mr. GREELEY. We can do that. I think the present thinking is about an average of $50,000 to $60,000 for each one, or about $200,000 to $240,000 but I understood from Mr. Droege that would include some recreation planning, as well as the core drilling and design.

Mr. NELSON. It could save the Government money by doing engineering design on the three additional dams at the same time. We will find out what portion of the total is engineering for the three dams.

Senator BYRD. I had the impression that you were saying Trout Pond alone would cost $50,000 in planning money.

Mr. NELSON. Yes. At Trout Pond the recreation planning part of the total planning has been done. Needs here are for engineering and design work that we would propose to contract.

Senator BYRD. For each of the remaining three the cost would be $50,000 or less.

Mr. GREELEY. Around $50,000 to $60,000 in round figures.

Senator BYRD. So, if we were to anticipate a saving by virtue of lumping the three in 1 fiscal year it would be somewhat less; would it not?

Mr. GREELEY. Yes, it could be.

Mr. CLIFF. I think we are talking about something that we here do not know enough about to be precise. Our total planning on this sort of a project would include not only core drilling, it would include engineering design of the dam at each site, include road location and design; it would include layout of recreation areas, and a lot of things that I do not believe we are in a position to sit at the table here and make an intelligent estimate about what it would cost.

Now, perhaps some of our field people who are acquainted with these sites could help us develop better estimates.

I think what has been going on in the way of discussion here is just talking in general figures.

Senator BYRD. Well, I do not want the record to be left to indicate that there is not something pretty definite in the way of an estimate.

BASIS OF ESTIMATES

Mr. GREELEY. The total construction figures I have given you for each of these projects are based on good preliminary planning. The planning figure for Trout Pond of $50,000 is a definite figure. That is a firm figure that our field people gave us. We are going on the assumption that the other three would be about a comparable amount—I would assume on the basis of $50,000 to $60,000. This is the figure we would like to provide for the record, sir.

Senator BYRD. Could you then provide for the record a pretty firm estimate of the planning costs for either Trout Pond alone or the four or any part thereof, and indicate, if you will, what the advisable approach would be if the committee were to decide to make an appropriation for planning. I would like very much to see Trout Pond get underway if we could not make a beginning on one or more of the remaining three. So if you feel that we are at a stage where moneys can be feasibly and appropriately and economically spent for planning of one or more of these projects I would like for the record to show this.

(The information referred to follows:)

PROJECTS PRIORITIES

Of the four projects discussed the highest priority is Trout Pond. The needs are for $1,500,000 of which $50,000 is for engineering and design of the dam. Recreation planning on this project is mostly complete so that construction on roads and recreation improvements could proceed rather quickly.

The priorities for the remaining three are Hill Creek, Laurel Fork, and South Branch in that order. It would be desirable to proceed to contract for engineering design on one or more of these projects at the same time. If all these are handled in one contract it is estimated that we could save $10,000. If two are placed in one contract we estimate a saving of $5,000.

RECREATION SITE ADVANTAGES

Senator BYRD. There is no question as to the desirability of having these various recreation sites, is there?

Mr. GREELEY. We agree fully that they are desirable and needed.

Senator BYRD. And there is no question but that one or all of them would greatly enhance the attraction of tourists to that section of Appalachia. And I would assume that if we were to talk in terms of cost-benefit ratios one or all of these could be greatly justified.

Mr. GREELEY. That is the indication, yes. But from the information I have before me today I cannot say positively that that is the case.

Senator BYRD. If 45,000 visitors were turned away from Brandywine since it was opened for visitation this year, this would appear to indicate that the benefits to be derived from Trout Pond would greatly offset the costs involved.

STATE RECREATION AREAS

Mr. NELSON. Senator, as you know, in West Virginia, the State has built some dams on the national forests. Those dams, when I was over there a year ago, were by far the most popular recreation areas in the Monongahela National Forest. There is no reason to believe the dams we are talking about, with the related recreation developments, would not be as popular as those already constructed.

We found that such improvements, built in relation to wildlife benefits, have been most beneficial. The State has found this to be true and published that the benefit to the economy around the Monongahela from wildlife far exceeds such benefit elsewhere in the State. They published a map listing the places that are making money off of hunters and fishermen, and most of the places listed were around the Monongahela Forest because that is where the hunting and fishing are better because of developments and the way the land is managed. Wildlife on the Monongahela has been improved by our working cooperatively with the State.

Senator BYRD. All right. I certainly appreciate your patience in going into this matter.

I take it them, that your people will get their microscopes and slide rules and really give us a rockbottom figure that will be firm and dependable. I am not trying to pressure you into taking action that is premature, but if it is advisable to move in the forthcoming fiscal year I would like to at least make the attempt to get you whatever money is needed.

Mr. CLIFF. We will furnish the information to the best of our ability.

Senator BYRD. I have just one final project.

SHERWOOD LAKE

You have been rehabilitating and expanding at the Sherwood Lake Recreation Area. Has this work been completed?

Mr. CLIFF. Do you know about that Mr. Greeley? Where is Sherwood Lake? I should know.

Senator BYRD. Greenbrier County.

Mr. GREELEY. Senator Byrd, no, we have not finished what needs to be done at Sherwood Lake. My information is that we have worked up a revision of the master plan for the development of that area. According to this revised master plan there should be included 130 additional family units for camping and picnicking. We should also enlarge the beach area, and should work out the construction of a bathhouse and administration building. We should complete and enlarge the water system and the sanitation system. As you indicate, Senator, some work has been done. There are facilities there now. This is the additional work that should be done for full development of the recreation resources that are there. Additional work at Sherwood Lake has a higher priority than new work at South Branch which we previously discussed.

COST ESTIMATE

Senator BYRD. What is your estimate on the cost?

Mr. GREELEY. About $700,000, which includes $225,000 for interior roads and parking areas; the rest would be for recreation improvements.

Senator BYRD. Are these in the fiscal year 1966 budget?

Mr. GREELEY. No, sir; these are not.

Senator BYRD. Could you use the moneys if they were made available?

Mr. GREELEY. Yes, sir; I am sure that we could make some fine progress on it. I doubt if we would be in a position to move on everything I have mentioned today.

HIGHLAND SCENIC HIGHWAY, MONONGAHELA NATIONAL FOREST

Senator BYRD. Mr. Nelson, are you familiar with the Highland Scenic Highway in the Monongahela National Forest where the Bureau of Public Roads is allocating funds for this highway which will open up a beautiful recreation route on the crest of the highest mountain in West Virginia?

Mr. NELSON. Yes, sir. This route has been considered by Congress for use of public lands highway funds. It will eventually be about 160 miles long and will generally be west from your proposed Spruce Knob-Seneca Rocks National Recreation Area.

Senator BYRD. Will this land and water conservation fund be involved in acquisition of lands for recreation purposes along this Scenic Highway?

Mr. NELSON. Yes, it will. We consider this very thing of high priority in your State—high priority, along with some land purchases also in the proposed Spruce Knob-Seneca Rocks National Recreation Area which was included in President Johnson's message on natural beauty.

Senator BYRD. Do you have authority to acquire this land without special legislation?

Mr. NELSON. The Land and Water Conservation Fund Act gave us no new authorities. We in the Forest Service have two basic acquisition authorities that will be used. The first, and one that will be used in the majority of cases, is the Weeks law of 1911. The other is the 1956 act applying to the Department of Agriculture for acquiring lands or interest in lands by purchase, donation, or exchange. This act will be used in States or situations where the Weeks law does not apply.

It will also be used where we determine that the public recreation interest can be properly served by acquisition of only an interest in the land or water—such as a scenic easement. We can also use this authority to exchange interests such as mineral, water, or timber. Thus the 1956 act may be used in connection with the Highland Scenic Drive or other recreation complexes.

QUESTIONS AND ANSWERS

Senator BYRD. Several Senators who were unable to be here this afternoon have requested that I secure from you information which can be provided by responses to questions which would have been asked if they could have been present. I will furnish the questions to you and ask that you prepare the responses for inclusion in the record.

(The material referred to follows:)

QUESTIONS SUBMITTED BY SENATOR MCGEE

WILDLIFE HABITAT IN WYOMING

Question. Last year, I was in contact with the Secretary of Agriculture in reference to the possibility of the Forest Service undertaking a study and research of wildlife habitat in Wyoming with the center of its activities being situated in Laramie, Wyo. He indicated to me by letter of June 1, 1964, that the Department recognized the need for strengthening endeavors in wildlife habitat research and that the studies of the elk population in Wyoming particularly would be of extreme importance.

With this background, I would like to be advised if any funds have been requested in the budget requests of the Forest Service this year for the establish-

ment of such facilities at Laramie. If not, could you advise me what funds would be required to establish such facilities at this time.

Answer. The Forest Service did make a request for funds to start research on the improvement and management of elk range in Wyoming. The amount requested was $60,000 but in the budgeting process this was deleted, along with all other increases requested for wildlife habitat research in fiscal year 1966. We believe the need for research on management and improvement of elk range is urgent and merits substantial funding as soon as possible.

You will recall that at last year's Senate Appropriations Committee hearings in the statement furnished to you at your request, "Forest Service plans call for at least $90,000 to start this research when the situation makes such a program feasible." Within initial budgeting levels required in developing the Forest Service budget we had to limit our request to $60,000 for fiscal year 1966 in order to provide for other high priority wildlife habitat research needs. As you know, the new Forest Range and Watershed Laboratory at Laramie is equipped to facilitate basic ecological and physiological research to support work done at field locations. Results obtained through this project would be generally applicable to elk habitat throughout the Rocky Mountains.

FOREST SERVICE AND JOB CORPS CENTERS COORDINATION

Question. I would like to know what cooperation or coordination exists between the Forest Service and those in charge of the Job Corps centers throughout the country. Some localities in my State have indicated to me their interest in obtaining such Job Corps centers, and it is my understanding in some areas that the Forest Service has made preliminary studies to determine the feasibility of the establishment of such centers. I would like to have your comments regarding the role of the Forest Service in this area, including what financial commitments, if any, are expected from the Forest Service in the establishment of centers under its auspices.

The town of Kemmerer, Wyo., for one example, has indicated its almost unanimous support of such a center, and I was wondering if you have any information or can supply any information for the record in regard to any plans for this area.

Answer. The allocation of Job Corps conservation centers has been a joint undertaking between the Office of Economic Opportunity and the Departments of Agriculture and the Interior. The Forest Service has the responsibility of selecting proposed sites, taking under consideration the availability of meaningful work programs, community support, etc. The sites selected are then presented to the Office of Economic Opportunity for their approval.

No financial commitments are expected from funds appropriated to the Forest Service. Funds for the Job Corps program are transferred from the Office of Economic Opportunity to the Forest Service.

We have made preliminary investigations of many locations, Senator McGee, for potential Job Corps conservation centers. I believe that Kemmerer was one of these places. The number of such centers proposed by the Office of Economic Opportunity for the Forest Service for fiscal year 1966 was recently reduced from 148 to 56. This has meant that many of the potential centers cannot be activated. We are glad to know of the interest in Kemmerer for a center. We can assure you that if the center program is enlarged we will be glad to consider the wishes of these fine people.

SCENIC ROADS AND PARKWAYS

Question. It is my understanding that the Department of Commerce has set up a commission to study potential scenic roads and parkways for establishment and construction throughout the country. Presumably, such roads would be located on traverse land under the control and jurisdiction of the Forest Service as well as other Federal agencies, and presumably State and private land as well. I would like to know what coordination exists between this Commission of the Department of Commerce and the Forest Service in reference to potential locations on Forest Service land.

Answer. You are correct. There is a study group preparing a report on scenic roads and parkways. This study team is headed up by the Department of Commerce but it is really an interagency team with representation from and financing by the various departments. The Forest Service has a man working with this study team. The Outdoor Recreation Advisory Council, set up by the

President, directed that the study be made. It is being done under the coordinating eye of the Bureau of Outdoor Recreation. I would say the Forest Service is fully represented. We previously conducted a study of potential recreation ways on the national forests. This study has been useful to the group. In addition, our field people are working closely with the various State highway departments to coordinate their recommendations with opportunities for scenic roads within the national forests.

USE OF MOTOR VEHICLES ON FOREST SERVICE LANDS TRACTS

Question. Recently, I have received complaints from constituents in Wyoming regarding the ever-increasing use of gasoline-powered vehicles on trails within the Forest Service lands which were generally understood to be reserved for foot travel. I understand for the most part that the vehicles referred to are specially designed two-wheeled vehicles. Some instances have been called to my attention in which parties on horseback have literally been forced off narrow mountain trails by these motor vehicles. Among other things, it appears to me that this could well create a dangerous situation and is one which I feel is deserving of some attention at this time.

With this in mind, I would like to have you explain the policy of the Forest Service in reference to use of such vehicles off of the established roadways which were, of course, designed for motor-vehicle traffic.

Answer. You have raised a problem that is becoming increasingly complex. Before I answer the question may I make an observation?

Question. Yes, go ahead.

Answer. The issues you raise are not simple ones. Public interest in the use of motorbikes or scooters has literally mushroomed in the last 3 or 4 years. They are small low-speed but high-geared vehicles that use very little fuel, and which have been made so sturdy and reliable that they are capable of going almost anywhere. And where they won't go, many of their riders can actually carry them. Further, competitive manufacturing, both domestic and foreign, has resulted in a fairly inexpensive machine.

Organizations and clubs have been formed, and they have a natural association. As owners have become more proficient with these machines, they have looked for increasingly challenging uses for them. Cross-country travel—and the rougher terrain the better—has become a rapidly growing activity. Naturally the mountainous areas of the national forests of the West are most attractive in this respect. The result is that where we had no, or only a few of the most hardy scooter riders a very few years ago, they are now visiting us by the hundreds and thousands. And all of them are convinced that they are participating in one of the best possible of all outdoor recreation activities.

The fact is, Senator, that they feel that they have as much right to use the publicly owned national forests for their chosen recreation use as have those that would question that right. I'm sure they would quickly challenge any general understanding that national forest trails are, or should be, reserved for foot travel.

Of course, there are many that use the trails both afoot and by horse that do not share these feelings. To many of them, unexpectantly encountering one of these noisy powerful little machines way back from the roads where they are expected, is a rather shattering experience. The result is that the whole situation involving the off-road use of national forests by scooters and motorbikes is complex and controversial and is certain to become more so.

In light of this I must point out that the situation is undergoing very careful scrutiny, and study. Basically our policy is this:

We do recognize that cross-country travel, in the right place, is a perfectly proper form of national forest recreation use, and that in other instances it is also a means of travel to other recreation resources in relatively wild country. Our policy recognizes this. Our decisions as to whether such use should be permitted in any given area is based on our appraisal of the public benefits versus the detrimental effects in the area involved.

Forest supervisors are instructed to study the effects of such travel on an area-by-area basis and to determine whether it is in the public interest. If in their opinion an area should be closed to such use in order to prevent erosion, to protect forest resources, or to further other authorized national forest activities, including other kinds of recreation, they are authorized to make such closures. This has been done in many places and studies are underway to determine whether it is necessary in still others. Of course, it has not been allowed in

areas of the national wilderness preservation system, and national forest primitive areas. This was true quite some time before the passing of the Wilderness Act.

RESTRICTION ON USE OF MOTOR VEHICLES

Question. Does the Forest Service at the present time have ample authority to restrict or prohibit the use or motor vehicles in areas and on mountainous trails under its jurisdiction?

Answer. Yes, sir. We believe we have adequate authority to restrict the use of motor vehicles where we are sure it is necessary, and where Forest Service jurisdiction is clear under the act of 1897. But there are some areas where the jurisdiction picture may be clouded.

USE OF MOTOR VEHICLES

Question. I would like to know also the extent to which these specially designed two-wheeled vehicles are being used in forests and other mountainous terrains throughout the United States today and to what extent their operations have become a problem to proper management of Forest Service lands.

Answer. I touched on this a moment ago. We have a lot of use, and it seems certain that we can expect it to grow. To date, most of the activity has been in the West. There are some signs that it is begining to show up in national forests in the East. This growth, in the case of scooters, has caused us problems. In some areas of steep slopes and unstable soils the small wheel tracks left by these machines can cause very serious damage. There are also problems where the admittedly noisy machines, and hikers and horseback riders try to use the same steep mountain trails. Here they can be a real safety hazard. On the other hand, there are many places where they do little or no damage to the resource, they do not impinge upon other resource uses, and they are no safety hazard. But the biggest problem is going to be in making the studies necessary to decide whether or not they should be permitted. We have well over 100,000 miles of trails, and we are building more all of the time so the job of making the studies on which to make the decisions is a major one.

QUESTIONS SUBMITTED BY SENATOR YOUNG

GREAT PLAINS SHELTERBELT LABORATORY, BOTTINEAU

Question. How much do you have in this year's budget for the staffing of the Great Plains Shelterbelt Laboratory located at Bottineau?

Answer. We have the same amount as last year, $120,000.

Question. At the time this facility was built, what was the estimated annual operating budget?

Answer. The Laboratory was built to house a projected program with a budgetary requirement of $280,000.

Question. Last year the Senate approved an increase of $150,000 for the Bottineau program but only $75,000 was agreed on in conference with the House. Did the Forest Service request additional funds for Bottineau in the fiscal year 1966 budget?

Answer. Yes, we did request these funds but because of the general financial problems the proposal for an increase at Bottineau was not allowed.

Question. I recall that greenhouses are needed to complete the facilities. What is the present status of meeting this need and what is yet required?

Answer. The research at Bottineau does require both greenhouses and headhouses and they are very important facilities in our program. Up to now we have barely gotten by through the use of some benches that the college has permitted us to occupy in their greenhouses. They need the space, however, and this has been a very temporary expedient. In fiscal year 1965, we managed to make some program adjustments and with a part of the $75,000 increase which you mentioned we invited bids for a first unit of a greenhouse which will be built this spring. We still need additional greenhouse space and headhouses to go with them. It has been our intention to complete these facilities as part of the program development.

Question. Then to complete these facilities and carry on the necessary research still to be done you need to have the programs strengthened?

Answer. That is correct.

Question. How much could you effectively use at this time?

Answer. An increase of $75,000 above the fiscal year 1966 estimate would enable us to complete the greenhouse facilities and strengthen the staff for continued research on the more important problems. This would give us about $200,000 for the program at Bottineau.

Questions by Senator Stennis

REFORESTING IDLE LANDS

Question. I have followed the outstanding work that is being done in reforesting idle lands, especially in the South. Tree planting and some of the newer techniques of sowing tree seeds directly, have been combined into a highly successful program in many areas. Also, I am encouraged by the development of seed orchards to eventually supply high-quality seed of superior trees. These seeds will be valuable and should not be wasted in poor collecting and storing practices. In discussing these operations with southern foresters, I have learned that there are serious problems relating to forest tree seed. Is this true?

Answer. Yes, there are many critical aspects of supplying adequate quantities of good, high-quality seed to support the grow-reforestation programs. This is true for both hardwood seeds and pine seeds. Especially for some of the preferred hardwood species which will be used more and more in reforestation programs, we are deficient in our knowledge of how to collect, store, plant, and how to protect the seed from pests in planting programs. The prospects of soon having seed from superior trees in seed orchards emphasizes the importance of our knowing more about tree seed requirements.

Question. What is being done to solve seed supply problems? Would you conclude that more research is needed?

Answer. Practically nothing has been done to find out the requirements for successful hardwood seed handling; that is the storage methods; successful techniques for sowing in nurseries or directly in the forest; determination of germination; protection from birds, rodents, and insects; and related problems. Some progress has been made on pine seed problems but here, too, there are great deficiencies in knowledge. Currently, very little is being done on any of these problems and much more research is needed. This need was emphasized recently in our review of seed problems.

TREE SEED RESEARCH

Question. Would special laboratory facilities be required for a program of tree seed research?

Answer. Special facilities would be needed, including tree seed physiology laboratories, facilities for studying seed germination, environmental controlled rooms, greenhouses, and the like. We have looked into alternative locations for tree seed research. One of the best locations would be at State College, Miss., where Mississippi State University has a school of forestry, and a very strong agricultural seed research program. There is already established at this location a strong scientific community concerned with seed problems. Thus, a rather modest facility would accommodate a forest tree seed research center for the South if it were located at State College, Miss., to take advantage of the associated programs underway.

Question. What would you estimate a forest tree seed Laboratory would cost?

Answer. Our preliminary estimate indicates this Laboratory would cost approximately $250,000. Architectural plans and design of the laboratory and auxiliary facilities would require $20,000.

Communications Received

Senator Byrd. The chairman has asked me to place in the record a number of communications received by him. They will be printed at this point.

(The material referred to follows:)

ARIZONA WATERSHED PROGRAM

LETTER FROM PRESIDENT, ARIZONA WATER RESOURCES COMMITTEE

ARIZONA WATER RESOURCES COMMITTEE,
Phoenix, Ariz., February 16, 1964.

Hon. CARL HAYDEN,
Chairman, Committee on Appropriations,
U.S. Senate, Washington, D.C.

DEAR CARL: In our letter of August 24, 1964, we enclosed a tabulation of items we were requesting for inclusion in the Forest Service budget for fiscal 1966 in connection with the Arizona watershed program.

Two of these items involved increases for forest research, one in connection with the work in progress on Beaver Creek; the other in the field of controlled burning in ponderosa pine.

Both items apparently were rejected by the Budget Bureau and were not in the budget transmitted to Congress by President Johnson.

We would like to see these items restored, if at all possible. To reach maximum effectiveness, the Beaver Creek project needs an additional $60,000 to provide a few extra men at the lower professional level. This would release the more experienced scientists from the necessity of collecting data in the field, giving them more time to analyze the data and prepare reports on the research results.

Studies of prescribed or controlled burning in ponderosa pine have been fragmentary to date because of a lack of funds. Such little work as has been done shows that controlled burning may be a promising tool in controlling wildfires and in increasing water yields. We believe this effort should be augmented in the amount of $60,000.

We realize how tough it is, especially this year, to get any increases in the budget for the Department of Agriculture, but we know you will do all you possibly can.

With best wishes always, we are
Sincerely yours,

C. C. "BUD" COOPER, *President,*
KEL M. FOX, *Secretary.*

FOREST PRODUCTS LABORATORY, MADISON, WIS.

LETTER FROM INSULATION BOARD INSTITUTE

INSULATION BOARD INSTITUTE,
Chicago, Ill., February 9, 1965.

Subject: Expansion of research facilities at Forest Products Laboratory, Madison, Wis.

Senator CARL HAYDEN,
Chairman of Subcommittee, Senate Appropriations Committee for Interior and Related Agencies, Senate Office Building, Washington, D.C.

DEAR SENATOR HAYDEN: You may recall that I have written you both in 1962 and 1963 urging you and your committee's support of the program for the expansion of research facilities at the Forest Products Laboratory in Madison, Wis.

On behalf of our industry I certainly thank you and the Senate Appropriations Committee for the program which has been assured to date for the research facilities at the Forest Products Laboratory, and assure you of our sincere appreciation of your effective assistance in making these improvements possible.

Again this year I wish to support the necessary appropriation for changes in the present building which will provide the proper utilization of space vacated by the divisions moving into the newly completed building under the program approved to date.

In support of this program, I again call to your attention the importance of the Forest Products Laboratory program both to our industry and to the national economy as I have outlined in my previous letters:

The history and growth of the insulation board industry parallels that of the Forest Products Laboratory in Madison, Wis., and we feel that the cooperation

which we have enjoyed from Forest Products Laboratory has been an important factor in the development of our industry into one of the major American industries utilizing forest products.

The first insulation board was produced in 1914 as a means of utilizing a residue from pulp and paper manufacture and the industry has shown a consistent growth since that time over half a century ago.

Insulation board is now manufactured from both wood and cane fibers by felting the pulped fiber into thick, stiff building panels which are used in construction where a combination of structural properties, thermal insulation, acoustical properties and cost satisfy important needs. At present, over 3 billion square feet, on a ½ inch thickness basis, of this material are produced and used in the United States each year. The insulation board industry is important to the integrated utilization of the production of the forests because it uses wood that is a residue of other forest products manufacture or species of lower utility than many other phases of forest products manufacture.

As mentioned, the history of the insulation board industry has been one of steady growth which has been predicated on the development of specific products to do certain jobs as components of buildings. For example, at present, over 45 percent of the houses sheathed in this country each year use structural insulation board sheathing. The Forest Products Laboratory in Madison, Wis., has served the 15 major manufacturers of insulation board of this association on many occasions in the past in proving a new product for a specific use. Many of these uses required complex technology and equipment not available at member company facilities. Future applications and products of our industry will need even more extensive facilities for adequate evaluation of the needs for prospective uses. We consider the Forest Products Laboratory's physical plant expansion, as proposed in the building program, as sound and necessary for its future ability to conduct urgently needed research on full-size or nearly full-size structural units, such as those produced by our industry, as well as other industries utilizing forest products for construction materials.

Structural insulation board was used to some extent in World War I and to a considerable extent in World War II in providing military housing which could be quickly and economically constructed. Insulation board's contribution both to our military needs and to the general economy of the country as a forest products industry which provides thousands of jobs and positions requiring many varied types of skills and abilities is well established. Therefore, as an industry, which we consider of major importance to the American economy, we wish to again go on record as supporting and urging the approval of the necessary funds to expand the facilities for structural research at the Forest Products Laboratory in Madison, Wis., as proposed.

Sincerely yours,

CHARLES M. GRAY, *Manager.*

TELEGRAM FROM TIMBER STRUCTURES, INC.

TUCSON, ARIZ., *March 5, 1965.*

U.S. SUBCOMMITTEE ON INTERIOR AND RELATED AGENCIES,
(SUBCOMMITTEE TO SENATE APPROPRIATIONS COMMITTEE),
Senate Office Building, Washington, D.C.:

With regard to hearing before you next week on financing of forest research construction we respectfully request your favorable consideration of a supplemental appropriation which would make available to the U.S. Forest Products Laboratory at Madison by July 1, 1965, a sum of $190,000 to be extended by them for the planning now of suitable and economical conversion of space and plant which will become available in 1967 by reason of completion then of new and improved facilities for wood chemistry at fiber products research provided for by the last Congress. We understand that the total contemplated cost of the conversion referred above is to approximate $2,750,000 a present request is, however, for the planning item only. The construction funds would not be required till July 1, 1967, and will no doubt be the subject of separate request. No particular interest in this matter arises from rather close knowledge of the great need for advanced research and full-scale testing required for intelligent development and use of the structural values of wood. We think this is highly important not only from a commercial standpoint and that of stumpage values of Government timer but from a community and small enterprise outlook as well. We ourselves have been and are among the national leaders in developing

structural glued laminated timbers, and active in association work protecting and advancing them and thereby furnishing some hundreds of men with steady jobs.

The Laboratory at Madison has been invaluable to all engaged in this work whether large or small but they as well as we who manufacture and market the product need badly to know more. This can be accomplished only by superior facilities for learning and we submit that the U.S. Forest Laboratory with 33 years of experience at their present location already under their belt and their fine record indicates the place to get the job done. If given the tools they will do so. In Glulam as we call this particular product and which is growing in commercial use, and in such other forms of wood manufacture as require research and proof. Such a program we submit in the public interest and again we do respectfully request your favorable consideration.

WARD MAYER,
Chairman, Timber Structures, Inc., Portland, Oreg.

LETTER FROM POTLATCH FORESTS, INC.

POTLATCH FORESTS, INC.,
Lewiston, Idaho, February 27, 1965.

NEED FOR PLANNING FUNDS FOR U.S. FOREST PRODUCTS LABORATORY

FOREST PRODUCTS LABORATORY PROPOSALS

Congress has already provided funds to begin construction of a major addition to the Forest Products Laboratory in Madison, Wis. When the new buildings are completed and several departments moved from the present buildings into the new structures, space will have been vacated which must be effectively utilized. In order to take advantage of the areas in the old buildings that will be available, adequate planning for the extension of other departments to these vacated areas is extremely important.

The U.S. Forest Service has suggested that $190,000 be included in the budget of the next fiscal year to provide for the planning of the effective utilization of the space in the present Forest Products Laboratory buildings.

THE NEED FOR FEDERAL SUPPORT FOR FOREST PRODUCTS RESEARCH

The question is frequently asked, "Why should the Federal Government support research in forest products?"

The forest products industry is a basic industry made up of about 57,000 different companies employing 1,600,000 people and providing an annual payroll of approximately $7 billion. An industry of this size comprising so many different companies is obviously made up of many small firms. The vast majority of these firms simply do not have enough profits to be able to afford the staff and equipment required to conduct effective research. The combined taxes of merely these small firms, however, much more than meet the annual expenses of the Forest Products Laboratory. Furthermore, larger units in the forest products industry are conducting research. For example, in a recent survey that I made, it developed that approximately $3 million per year was being spent by forest products concerns in the Inland empire for research and product development. But even those of us who are conducting research depend heavily on the fundamental data developed at the U.S. Forest Products Laboratory.

The Federal Government is justified in carrying on forest products research to protect the Government holdings of timberlands. In order to make the vast national forests and other federally owned forests economically productive on a permanent basis, continuing research is necessary. The markets for forest products are continually being attacked by other materials. In today's modern society it is generally recognized that only by effective research development can an industry maintain its relative position in the face of competition from other materials.

If land ownership should be the basis of determining who is responsible for spending the research dollars, then private industry would carry only a very small share. An estimate made in 1960 revealed that of the commercial forests in the United States only 13 percent were owned by the forest industries.

In this era of gold flowing out of the United States, the status of our forest industries in the world is significant. It is estimated that the United States

produces 30 percent of the world's lumber, 43 percent of the world's paper and paperboard, and 51 percent of the world's plywood. It is obvious that with such large proportions of the world's production, much of our forest products materials are exported. Our products must be of the latest design and the highest quality in order to remain competitive on the world markets. Research will play an important part in maintaining our position in the export of items coming from forests.

FOREST PRODUCTS LABORATORY CONTRIBUTIONS

The chemists' and chemical engineers' work in the Forest Products Laboratory in the field of pulp and paper were largely resopnsible for the development of the Kraft pulping process for southern pines. This industry is now well established, continues to grow, but is now old enough that the income taxes which it has paid into the Federal Treasury much more than offset the total cost of the Forest Products Laboratory throughout its entire life. Obviously, then, the income taxes from this industry each year greatly exceed the annual operating costs of the Forest Products Laboratory.

A great deal of the credit for the brandnew and rapidly expanding Southern pine plywood industry belongs to the Forest Products Laboratory. This new industry, with at least three units in operation now and three to five more to be underway before the end of this year, will continue to expand rapidly. In only a relatively short time the Southern pine plywood industry also will be paying Federal income taxes in excess of the operating costs of the Laboratory.

One of the early developments of the Forest Products Laboratory in Madison was to develop kiln drying techniques for rapidly removing the moisture from lumber. The basic theories developed by the Laboratory are still in use by the lumber industry today. For example, in Lewiston, Idaho, alone we have 70 kilns operating on principles established by the Forest Products Laboratory.

The Forest Products Laboratory has fostered the development of new glues and tested adhesives over the years so that a wealth of information is available on use and behavior of glues. Today, many buildings such as churches, schools, factories, and homes are erected with glued laminated structural members supporting smaller wooden parts, all of which add to important sales volume to the lumber industry.

Developments in fiber and lumber containers have saved the United States millions of dollars during two World Wars. Furthermore, the Forest Products Laboratory developments also provide savings in civilian shipments over the years.

Forest Products Laboratory has been instrumental in developing materials and methods for applying films to the surfaces of lumber and plywood. These films may be paper base or plastic films. In any event they provide great improvement in the surface appearance of the wood covered. They greatly increase the durability of paint applied to these surfaces. Such films make possible the introduction of wood products into new markets not now available to wood. There are already several factories producing such materials; many more firms will be utilizing the Forest Product Laboratory developments in the field of overlays in the next few years.

CONCLUSION

The information presented here by no means completely covers the programs and benefits of the Forest Products Laboratory. Other persons considering this matter will unquestionably mention other accomplishments, many of which may be more important than those presented here. Insofar as my home State of Idaho is concerned, as well as many other States in the Nation, the lumber industry is by all odds the most important wood product. The lumber industry faces greater competition in the years immediately ahead than it has ever encountered in the past. It is therefore important that every possible effort be made to maintain and expand markets for lumber. The activities that will be carried on in those areas of the Forest Products Laboratory for which planning funds are now requested will have valuable influence in maintaining and improving the prosperity of the lumber industry.

HERBERT B. MCKEAN,
Director of Research.

BALLOON LOGGING

Engineering research, Seattle, Wash..... $200,000

This increase would be used to expand research in aerial approaches to the harvest of timber from difficult access areas—in particular the promising concept of balloon logging.

Systems studies have shown that balloon logging can be both technically and economically feasible under the proper conditions. Use of this aerial approach would seem to offer many of the advantages of helicopter logging but at far less cost and with early availability of equipment. Pilot operations using subscale balloons have shown that the system is capable of logging in difficult terrain. The problems are in selection of the proper balloon configuration and size and the correct operational criteria for economic use.

There is urgent need for logging systems suited for use on steep slopes and in areas of high recreation value and in areas where ground access is costly, as in Alaska. The balloon system would solve this need in many areas. Accelerated research could result in making balloon logging operational in about 2 years. This would require an increase in Forest Service research effort of $200,000 annually.

FOREST HYDROLOGY LABORATORY, FRANKLIN, N.C.

LETTER FROM JOHN W. SQUIRES

SEARS, ROEBUCK & CO.,
FORESTRY DIVISION,
Jackson, Miss., February 22, 1965.

Hon. CARL HAYDEN,
Chairman, Committee on Appropriations,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: I have learned that provision for constructing a laboratory at Franklin, N.C., to serve the Coweeta experimental forest watershed research program is not included in the fiscal year 1966 budget of the Forest Service.

I am deeply concerned about this. In my opinion, this is a serious omission from the budget. I hope your committee will inquire into this.

I have considerable personal knowledge about the research at Coweeta and the great importance of this type of research to both public and private forest land managers. Water management and use has become of great importance as our needs have increased, and, all estimates of future trends indicate these needs will continue to grow.

I once served as a district ranger and then as assistant supervisor of the Pisgah National Forest in North Carolina. During that time I became quite familiar with the early work done at Coweeta and the value of the research results to those of us charged with managing public lands for multiple uses and products. For example, research findings led to guides for improved location and maintenance of logging roads to prevent accelerated storm-water runoff and sedimentation of headwater streams. Other studies showed the effects on runoff and erosion of heavy grazing by domestic livestock in hardwood forests to the detriment of water resources.

More recently during my tenure as president of the Southern Forest Farmers Association, I renewed my knowledge of the Coweeta program and the importance of the present and proposed research to our whole southern economy. Maintaining reliable, sustained flows of good-quality water from our forest watersheds is vital to our communities and industries. The research at Coweeta is aimed at learning how to do this as efficiently and effectively as possible—in harmony with other uses of forest lands. But, I was surprised and even shocked that the Forest Service scientists charged with this important and complex research had not been provided with the best and most modern laboratories and scientific equipment available.

I would humbly urge that your committee give this need your serious consideration, and I hope a way can be found to provide at least the authority and enough funds for planning the specifications for this laboratory in the fiscal year 1966 budget for the Forest Service.

Sincerely yours,

JOHN W. SQUIRES, *Forester.*

PURPOSE OF THE LABORATORY

A laboratory at this location will provide modern facilities for research serving the high water-yielding southern Appalachian Mountain forests. This research is aimed at development of techniques for increasing water yields, maintaining and improving water quality, and repairing damaged watersheds—all to guide effective multiple-use management of commercial forest lands which supply most of the clean quality water for some 50 million people. Architectural design and plans are estimated to cost $38,000. The total cost is estimated to be $480,000.

The present research program, developed around experimental watersheds at Coweeta, has produced much usable information now being applied on both public and private ownerships. However, to provide the sound, practical management prescriptions needed for broader application will require a better understanding of underlying processes and relationships. Watershed managers want to know more about the amount of water trees consume as compared with other types of watershed cover. They want to know how much water timbered units in hardwoods or pines will dependably produce from year to year. And, they want to know how timber cutting and other forestry practices affect the quantity, quality, and timing of streamflow yields.

What is required is study in depth of the four physical elements affecting watershed performance—the forest cover, the soil, the atmosphere, and the unique hydraulics of individual watershed units. Much of the knowledge of these relationships can be gained only through controlled studies in a laboratory environment utilizing the most up-to-date monitoring techniques. Experimental watersheds will continue to serve for pilot testing of watershed management principles and techniques, but these pilot tests must be supplemented by more intensive research.

A site for the laboratory is available on the federally owned Coweeta watershed. No other forest hydrology laboratory with a similar program is planned for the southern Appalachian Mountain area.

RESOLUTIONS OF THE IDAHO WILDLIFE FEDERATION ON U.S. FOREST SERVICE WILDLIFE HABITAT RESEARCH

RESOLUTION 1

Whereas there are needs and opportunities in Idaho for improvement, management, and protection of wildlife habitat and its coordination with other forest and range land uses; and

Whereas the U.S. Forest Service Intermountain Forest and Range Experiment Station has responsibilities for wildlife habitat research essential to the development of more efficient practical procedures for achieving the above; and

Whereas the Intermountain Station cooperatively with the Idaho Fish and Game Department is conducting limited research on methods for improving browse on big game winter ranges, and cooperatively with the Idaho Wildlife Research Unit some research related to coordination of sagebrush control with sage grouse needs for habitat; and

Whereas such research is far below the level justified by the importance of these game resources: Now, therefore, be it

Resolved, That the Idaho Wildlife Federation express support for these wildlife habitat research programs and further urge Members of our Idaho congressional delegation to seek additional appropriations for the U.S. Forest Service to expand this essential research; and further

Resolved, That copies of this resolution be sent to our congressional delegation and interested congressional committees.

RESOLUTION 2

Whereas periodic outbreaks of forest insects, such as the spruce budworm, cause serious losses of timber of direct concern to the important forest industries of Idaho; and

Whereas available methods for controlling forest pests such as spruce budworm do have the potential of serious damage to our wildlife resources; and

Whereas we do not want to endanger our important wildlife resources any more than we want to see unnecessary timber losses in our valuable forests; and

Whereas a substantial expansion of research by the U.S. Forest Service is urgently needed to learn more about the insects, how to control them without using insecticides, or where insecticide use is essential what means might be employed that would be less harmful to wildlife: Now, therefore, be it

Resolved, That the Idaho Wildlife Federation urge Members of our Idaho congressional delegation to seek additional appropriations for the U.S. Forest Service to expand this essential research; and further

Resolved, That copies of this resolution be sent to our congressional delegation and interested congressional committees.

Forest Research Facility, Ames, Iowa

Statement by Dr. Carl Stoltenberg

Chairman Hayden and members of the Senate Subcommittee on Appropriations for the Department of the Interior and Related Agencies, I am Carl Stoltenberg, head of the Forestry Department of Iowa State University.

I appreciate this opportunity to describe the need for a Federal forestry research facility on the Iowa State University campus and to ask you to include funds for it in the 1966 Forest Service budget.

For several years the effectiveness of the research of Forest Service scientists headquarters with my department at the university has been severely hampered by inadequate research facilities. The research that they, and we, are doing is urgently needed. Our programs are carefully planned and well coordinated—indeed they are a model of cooperative State-Federal research.

For 19 years the university has furnished, without cost to the Forest Service the offices, laboratories, and other research facilities for their work. In turn, these Forest Service scientists have made fine contributions to forestry in Iowa and the Midwest. They have helped the State and university to develop their forestry programs, they have cooperated in graduate student research, and they have given both graduate and undergraduate students an opportunity to become acquainted with the work of this important national conservation agency.

These years of productive, harmonious work together provide an excellent base for attacking urgent forestry problems cooperatively, using the most effective research techniques. We are doing so to the best of our ability, but the Forest Service scientists' efforts are rather inefficient because they must frequently use outmoded techniques and very restricted facilities.

Iowa State University and the Iowa Legislature have recognized both these fine working relations and the need to change and intensify our joint forestry research program. Within a few weeks we will break ground for the new $4 million plant sciences building at Iowa State University. This new building will provide, at no cost to the Forest Service, modern scientific laboratories for Forest Service scientists, as well as for the forestry faculty of the university. These new research laboratories, together with the experimental forests already available to Forest Service and university scientists, will furnish the major part of the facilities needed for the thorough, comprehensive research program required to solve some of our most critical hardwood forestry problems.

Iowa and neighboring States of the Midwest have and can continue to grow some of the finest hardwoods in the world. These include ash, maple, walnut, butternut, and cherry species that are highly prized for specialty uses, furniture, paneling, and similar products. But the supply of high-quality and high-value trees of these species is running out, and consequently the citizens of our Nation are forced to accept imported woods from foreign lands or poor substitutes. This causes our landowners to lose potential income, local communities to lose employment opportunities where they are badly needed, and we are jeopardizing many of our wood-using industries that manufacture fine hardwood consumer goods that are sought throughout the Nation.

To rebuild the supply of high-value hardwoods in the Midwest we must learn how to plant successfully the species that are in short supply. We must quickly learn (1) the amounts and kinds of fertilizers that are required, (2) the kinds of soils best suited for growing various hardwood species, (3) the relationships between hardwood growth and various soil fungi and bacteria, (4) practical ways of protecting planted hardwoods from rodents, and (5) practical methods for eliminating weeds and brush and for cultivating hardwood plantations.

The Forest Service research program at Iowa State University is designed to solve these problems. In deciding upon this program of research the Forest Service recognized that Iowa State University was a very logical place to do this work because of the university scientists there and because Iowa is located in the center of some of the most productive agricultural soil in the world. The production of high-quality hardwoods in the Midwest requires a type of forestry related specifically to rich land, to agricultural practices, and to the farm mechanization that is so highly developed in the Corn Belt. Thus, their program utilizes the natural attributes and existing practices in the region. The Forest Service and the university also recognize that the planting and growing of high-value hardwods may provide a profitable way for farmers of the Midwest to divert land from crops in surplus to timber crops that are in short supply now, and that are likely to be in short supply for many years ahead.

The remaining research facility needed to enable the Forest Service and university scientists to work efficiently and rapidly on these complex problems, is a modern research greenhouse. It would give them the necessary control over their experiments, control that cannot be obtained under field conditions. In combination with the laboratories of our new plant science building and existing experimental forests, it would give them a complete research facility for their work.

The greenhouse would cost approximately $200,000. This facility is included in the national forestry research program that was approved by the Secretary of Agriculture and transmitted to the Congress last year.

If you will add $200,000 to the Forest Service budget which you are preparing, Iowa State University will furnish the land and will provide complete architectural plans for the facility. Thus, Federal funds for land and for planning would not be needed, and construction contracts could be awarded almost immediately.

Thank you for this opportunity to describe for you the urgent need for a Forest Service research greenhouse at Ames, Iowa.

Commendation of Forest Service

Senator Byrd. Well, Chief, I want to compliment you and your fine people on the excellent job that you are doing. I think that the Forest Service is one of the really fine, outstanding agencies in this Government of ours, and I want to personally pay my respects to you and your people for the cooperation and the assistance that you have given to our people in West Virginia. I realize that you cannot just look at West Virginia as a State and the work there as something which is beneficial only to West Virginia. Rather, it is a part of the whole, and it helps the Nation. We in our area are very proud of the work that is being done by the Forest Service and we look forward, Dr. Harper, to increasing the good results from the work that is being done by your very competent staff down at Princeton and over at Parsons. I cannot really tell you how much I thank you, Chief Cliff, and your people, for what you are doing to help West Virginia and West Virginians to help themselves.

Mr. Cliff. Thank you, Senator Byrd. It is a great satisfaction to work in this organization and I am quite proud of it myself.

Senator Byrd. You have been most patient today, and I apologize for having imposed on you and your staff by keeping you later than 5 o'clock. On Friday, the 26th of February, at 10 o'clock, the committee will take testimony on the budget request of the Division of Indian Health.

Subcommittee Adjournment

The subcommittee stands adjourned until that time.

(Whereupon, at 5:38 p.m., Thursday, February 25, 1965, the subcommittee adjourned, to reconvene at 10 a.m., Friday, February 26, 1965.)

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1966

FRIDAY, FEBRUARY 26, 1965

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Carl Hayden presiding.

Present: Senators Hayden, Bible, Mundt, and Young.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

STATEMENTS OF DR. CARRUTH J. WAGNER, CHIEF, DIVISION OF INDIAN HEALTH; DR. ERWIN S. RABEAU, DEPUTY CHIEF, DIVISION OF INDIAN HEALTH; HENRY V. CHADWICK, CHIEF, OFFICE OF ADMINISTRATION, DIVISION OF INDIAN HEALTH; OWEN E. RYE, ASSISTANT CHIEF, CONSTRUCTION AND MAINTENANCE BRANCH, DIVISION OF INDIAN HEALTH; ALBERT H. STEVENSON, CHIEF, OFFICE OF ENVIRONMENTAL HEALTH, DIVISION OF INDIAN HEALTH; SOL ORDEN, CHIEF, FINANCIAL MANAGEMENT BRANCH, DIVISION OF INDIAN HEALTH; DR. LEO J. GEHRIG, CHIEF, BUREAU OF MEDICAL SERVICES; G. RICHARD CLAGUE, DEPUTY CHIEF FINANCE OFFICER; AND LOYAL C. FISHER, DEPARTMENT DEPUTY COMPTROLLER

INDIAN HEALTH ACTIVITIES AND CONSTRUCTION OF INDIAN HEALTH FACILITIES

Chairman HAYDEN. The subcommittee will be in order.

For fiscal year 1966 there is a budget estimate of $66,093,000 for "Indian health activities," which is $4,473,000 greater than the amount which has been appropriated for fiscal year 1965. I may say, however, that there is pending a pay increase supplemental of $1,082,000. The justification for the 1966 estimate will be included in the record.

(The justification referred to follows:)

INDIAN HEALTH ACTIVITIES

HIGHLIGHT STATEMENT

The Division of Indian Health has the responsibility of providing total medical care services to approximately 380,000 Indians and Alaska natives. These health services are of a comprehensive type which include preventive, treatment, and rehabilitation services on an individual as well as a community basis.

43-666—65—pt. 1——59

Services in 1966 will be provided through a system of 49 hospitals, their outpatient clinics, 46 health centers (which includes centers at larger Bureau of Indian Affairs boarding schools) and at about 300 other locations which include health stations and satellite field clinics. Services will also be provided through contractual arrangements with non-Federal hospitals, private physicians, dentists, and State and local agencies.

Despite the steady improvement in the health status of the Indian and Alaska native beneficiaries, they still bear excessive burdens of disease, illness, accumulated disability, and premature death. The health status of American Indians and Alaska natives is comparable to that found in the general population of a generation ago.

Most illnesses and 18 percent of the deaths are due to infectious diseases and their residuals. These diseases include gastroenteritis, dysentery, influenza, pneumonia, tuberculosis, otitis media, and trachoma.

Health problems among these people reflect the extreme hardship of their physical environment, social isolation, varying levels of education and limited economic opportunity in the places they live.

Gross insanitary conditions, poor and crowded housing, lack of available safe water supplies, inadequate nutrition based on impoverished socioeconomic status and the emotional problems inherent in a cultural transition support the high rates of infectious disases, emotional problems, and mental illnesses.

Despite significant improvements in the health status of the beneficiaries in the last 10 years, as evidenced by the decrease in mortality and morbidity rates, much remains to be accomplished.

The latest available data (1963) indicate significantly higher mortality rates among Indians and Alaska natives than among the general population. Indian mortality rates for selected causes as compared to those for all races, are as follows:

Infant deaths per 1,000 live births:

Indian, excluding Alaska native: about 1.7 times greater.

Alaska native: about 2½ times higher than all races.

Infectious diseases (rates per 100,000 population):

Tuberculosis mortality:

Indian, excluding Alaska native: about 5 times greater.

Alaska native: about 7 times greater.

Gastroenteric diseases: Indian: about 5 times greater.

Influenza and pneumonia:

Indian, excluding Alaska native: over 2 times greater.

Alaska native: almost 3 times greater.

These health deficiencies and the need for resources and methods for nurturing acceptable health practices to overcome the existing problems are recognized by both the Public Health Service and its Indian and Alaska native beneficiaries. Their growing recognition of the benefits of modern medicine and health practices is amply demononstrated by their increasing use and acceptance of available health services and the more active participation of tribal councils and individual members in health affairs.

Hospitalization and clinic services

Hospital admissions continue at a high rate and reached 90,000 in 1964. Leading reasons for hospitalization, outside of the Alaska native hospitals are: (1) deliveries, (2) respiratory conditions, (3) accidents, (4) diseases of the digestive system, (5) ear and eye disases, and (6) other infective and parasitic diseases. In Alaska, respiratory illnesses rank first, deliveries second, and accidents third.

Pediatric workload is high, comprising between 35 and 40 percent of the general hospital discharges. Readmission, especially among the very young children up to 5 years of age, are high (attributed to a great extent to the home environment, lack of sanitary facilities, exposure to reinfections, malnutrition, neglect, accidental injuries).

Outpatient visits and workloads at all hospital clinics, field health clinics and stations are increasing, especially the immunization workloads.

In the spring of 1964 the Division of Indian Health completed its program plan for fiscal year 1966. This plan was initiated at the service unit level and consolidated into a comprehensive plan with Indian cooperation and consultation. This plan identifies the existing health deficiencies among the beneficiaries served and the major areas in which programs must be strengthened to meet these deficiencies.

The Division's objectives and plans for 1966 are as follows:

I. Objective

To reduce the incidence of infectious diseases, particularly with respect to infants and young children.

Plan

We propose to—

A. Intensify and emphasize the immunization program (measles, polio, influenza, diphtheria).

B. Emphasize beneficiary education through teaching at all facilities through home visits, by influencing the application of hygienic practices, through proper use of newly acquired sanitation facilities and by stressing the relation of healthful practices to incidence of frequently occurring communicable diseases; and through improvement of nutrition practices.

C. Emphasize staff education through training in application of epidemiologic techniques; use of more intensive case finding, followup and influencing beneficiaries to present themselves for treatment; emphasizing the impact of infectious diseases in all courses conducted by the Division. Expand training in good food service practices.

II. Objective

To reduce morbidity and disability from injuries (leading to hospital and clinic treatment, etc.) and mortality from accidents.

Plan

We propose to—

A. Refine accident data collection, and analyze causes.

B. Emphasize education of beneficiary and staff, and work with other agencies in promoting action.

III. Objective

To reduce maternal morbidity, particularly in relation to conditions complicating pregnancy and their effect on neonatal mortality (during the first 4 weeks of life); and to decrease newborn mortality and morbidity especially among prematures.

Plan

We propose to—

A. Intensify and expand education efforts to—

(1) Bring under medical supervision a greater percentage of pregnant women, during the first and second trimesters of pregnacy.

(2) Promote improved nutritional status and encourage breast feeding.

(3) Promote improved home sanitation and personal hygiene.

B. Improve the patient referral system to insure continuity of all needed services in the clinic and home.

C. Establish additional clinics as necessary.

D. Provide for special training, supervision, and direction in maternal and child health activities for all health workers in the program.

IV. Objective

To reduce dental diseases and abnormal loss of teeth in Indians and Alaska natives.

Plan

We propose to concentrate our resources on services to children (infants to 18 years) by—

A. Providing preventive and corrective services to children.

B. Intensifying preschool roundup services and improved referrals from medical and parimedical personnel so that the number of children in the program below age 6 is increased.

c. Emphasizing better nutritional practices and better oral hygiene as preventive measures.

V. Objectives

To more fully identify through improved and more complete reporting coverage the health deficiencies and conditions encountered within the clinic patient load.

Plan

We propose to—

A. Develop and pilot test a method for recording, and reporting morbidity data and immunizations on a continuing basis in all clinic facilities.

B. Improve the competency of medical record clerks through training in recording and reporting procedures.

The amount of $66,093,000 in appropriated funds is requested for 1966. This represents an increase of $3,391,000 over 1965 estimated availability and will be used for the above objectives to permit further progress toward the goal of the program, that is, "Elevation of the health status of the Indian and Alaska native beneficiary to the highest possible level."

Hospital health services

The 1966 estimate provides for a program increase of $1,175,000. This increase will permit (1) increase in employment and other related costs, commensurate with workload changes; (2) funds to establish a general practice residency program; (3) additional funds for equipment requirements.

The budget for 1966 provides for (1) a net decrease in the average daily patient census of 30 patients per day (increase of 20 general medical and surgical patients and decrease of 50 tuberculosis patients); (2) an increase in hospital admissions of 2,000; (3) workload resulting from an increase in births of 300; and (4) an increase in outpatient visits of 20,000.

Contract medical care

An increase of $1,077,000 will provide for contract hospitalization of an additional average daily load of 51 patients, representing an increase of 19 general patients, 5 neuropsychiatric patients, and 27 tuberculosis patients, as well as higher per diem contract hospital costs.

Field health services

The 1966 estimate provides for a program increase of $914,000. This increase will permit an increase in employment and other related costs for the extension and improvement of preventive health services to Indian communities.

Administration

The 1966 estimate provides for a minor program increase of $2,000.

Appropriation, 1964		$58,960,750
Transferred from "National Heart Institute" (78 Stat. 210)		737,000
Comparative transfer from other accounts		14,000
Transferred to "Operating expenses, public buildings service" (75 Stat. 353)		−5,141
Total amount available, 1964		59,706,609
Appropriation, 1965	$61,620,000	
Proposed supplemental to cover Public Law 88-426 pay act increase	1,000,000	
Proposed supplemental to cover Public Law 88-422 pay act increase	82,000	
Total amount available, 1965		62,702,000

Summary of increases and decreases, 1966

Hospital health services:	
To provide for mandatory increases, and program increases for additional staff; establishment of a general practice residency program and equipment for replacement and new construction	+1,547,000
Less: Operation of Tucson hospital (to be closed by July 1, 1965)	−250,000
Net change, hospital health services	+1,297,000

Contract medical care:	
To provide for additional workload and price increases	+912,000
To provide for additional contract patients as result of converting Tucson hospital to health center	+165,000
Net change, contract medical care	+1,077,000
Field health services:	
To provide for mandatory increases, and program increases in preventive health activities of sanitation, public health nursing, health education, and field medical services	+923,000
To provide for operation of health center at Tucson	+85,000
Net change, field health services	+1,008,000
Administration: To provide for mandatory increases	+9,000
Net change, 1966	+3,391,000
Budget estimate, 1966	66,093,000

Analysis by activities

Activity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increases
Hospital health services	$35,976,444	$37,931,000	$38,688,000	$1,297,000
Contract medical care	11,029,177	11,815,000	12,892,000	1,077,000
Field health services	10,676,870	11,662,000	12,670,000	1,008,000
Administration	1,737,765	1,834,000	1,843,000	9,000
Unobligated balance lapsing	286,353			
Total	[1] 59,706,609	[1] 62,702,000	[1] 66,093,000	3,391,000

[1] Excludes reimbursements as follows: 1964, $678,096; 1965, $760,000; 1966, $790,000.

1. Hospital health services

Activity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
Hospital health services	$35,976,444	$37,391,000	$38,688,000	+$1,297,000

The estimate of $38,688,000, an increase of $1,297,000, consists of the following:

Statutory salary promotions	$101,000
FICA rate increase	9,000
Annualization of 1965 new positions	50,000
Annualization of Military Pay Act increase, Public Law 88-422	11,000
Annualization of Civilian Pay Act increase, Public Law 88-426	8,000
Wage board increases from Sept. 15, 1963, through Sept. 15, 1964	193,000
Total mandatory increase	372,000
Program increase	1,175,000
Total increase	1,547,000
Less: Conversion of Tucson Hospital operations	−250,000
Net increase	1,297,000

Need for increase

The increase of $1,297,000 is requested for the following:

1. Funds for additional personnel, workload, and cost increases.
2. Funds to establish a general practice residency program.
3. Funds for equipment. (To replace old and obsolete equipment; for new construction requirements.)
4. Funds to cover mandatory increases.

Additional personnel and workload

A continued increase in the number of admissions, births, and outpatient visits will require additional resources in personnel and other expenses. While the average daily patient load reflects a net decrease the more intensive medical care increase given acute general medical and surgical patients is much more expensive than routine TB patient care which is reduced. Workload changes anticipated for 1966 are as follows:

Increase in number of outpatient visits	20,000
Increase in number of births	300
Increase in number of hospital admissions	2,000
Increase in number of general patients per day	20
Decrease in number of tuberculosis patients per day	50

The drop in TB workload reflects largely the conversion of operations at the Tucson (San Xavier) Hospital by the beginning of fiscal year 1966 with a decrease in resources and workload in the hospital health activity and a corresponding increase in contract medical care and field medical activities.

A program increase of $424,000 is requested for 1966 to provide for the increased costs required to maintain the additional workload for more expensive general medical and surgical patients; the increased number of outpatient visits, admissions, and births; as well as for funds to support 63 additional positions. This increase in employment will provide for an employee patient ratio in 1966 of 150 which is a slightly higher level than the 1965 level of 147.

The validity of manpower requested for the Indian hospital system is substantiated when compared with other hospitals as shown in the latest statistical tables of the American Hospital Association's Hospitals Guide issue (dated Aug. 1, 1964) which reports 1963 ratios for patient stay and full-time employees per 100 patients in U.S. short-term general hospitals as follows:

	Patient stay	Employees per 100 patients
All short term	8.3	233
Federal—Short term	19.6	184
Non-Federal—Short term	7.7	240
PHS Indian general hospitals	9.8	[1] 169

[1] The above ratio reported in 1963 for Indian Service hospitals included personnel for outpatient operations. It is pointed out that in 1964 personnel have been prorated between inpatient and outpatient and the resulting inpatient ratio for general hospitals in the Indian Service was 148 employees per 100 patients. The turnover of patients (patient stay) and types of cases (obstretric, pediatric, etc.) and illnesses compare with the small community voluntary hospitals.

General practice residency

An increase of eight positions and $118,000 is requested to initiate a general practice residency training program at the Gallup Hospital. This program has been developed in cooperation with the Indian Health Committee, American Academy of General Practice of the American Medical Association. Graduates of a general practice residency program will be able to make more effective use of the Division of Indian Health hospital as the focal point for a comprehensive health program, preparing the physician to be a better manager of integrated clincial and community health programs required in the Indian service unit areas. The program is a 2-year general practice residency following internship with an op-

tional third year. In the first 2 years assignments are made of all major services, subspecialties as well as outpatient services and hospital clinical management. The third year includes 6-month specialization on one of the major services—i.e., surgery, OB, pediatrics, or internal medicine—and 6 months in community health management.

While Division of Indian Health facilities are constructed and equipped to permit a wide range of medical and surgical services to be provided, the experience and training of young physician staff does not provide for their fullest utilization. A significant proportion of the physician staff are serving in the program directly after internship (79 percent) and have not had adequate educational exposure nor the special training necessary to permit such expanded function activities, as are required. General practice residency training would materially offset this deficiency, and provide a more useful, better trained, well rounded, and oriented physician to serve in the capacity of family physician to the Indian and his community.

At the present time the rate of retention of entering physicians planning careers in the Public Health Service is quite low. A general practice residency program will not only increase the numbers of men remaining in career service but will also have a substantive effect on recruitment of additional numbers of promising physicians with a desire for doing general practice.

Equipment

An increase of $633,000 is requested for equipment; $228,000 of this amount is requested to provide for groups II and III (portable) equipment requirements related to newly constructed or remodeled facilities. Prior to this budget submission the groups II and III equipment requirements related to new construction was requested under the "Construction of Indian health facilities" appropriation.

The remaining $405,000 is requested to apply against the extremely large backlog of equipment requirements that exist.

The following table sets forth the hospital health services current equipment backlog and the replacement requirements and estimated acquisitions for 1965 and 1966:

Backlog as of July 1, 1964 (beginning fiscal year 1965)	$2,418,000
1965 replacement requirements	+671,000
1965 estimated acquisition	[1] —579,000
Backlog as of July 1, 1965 (beginning fiscal year 1966)	2,510,000
1966 replacement requirements	+526,000
1966 estimated acquisitions	[1] —984,000
Backlog as of July 1, 1966 (beginning fiscal year 1967)	2,052,000

[1] Includes estimated acquisitions of $50,000 from GSA surplus items.

Plan of work

For 1966 an appropriation of $38,688,000 is requested for the hospital health services activity to cover (1) the operation of 49 Public Health Service Indian hospitals and attached outpatient clinics; (2) a nurse training program associated with Public Health Service Indian hospitals; and (3) the maintenance of all Public Health Service Indian health facilities, consisting of hospitals, health centers, stations, school clinics, and staff quarters.

This estimate reflects the conversion of operations at the Tucson (San Xavier) hospital by July 1965 (beginning of fiscal year 1966). This conversion will result in a decrease of $250,000 in the hospital health service activities. A corresponding increase will be required in the contract medical care and field medical services activities. An amount of $165,000 will be required in contract medical care to provide inpatient service and $85,000 will be required in field medical services to provide outpatient care. The conversion of operations at this location is consistent with the guidelines set forth in "Criteria for Construction of Health Facilities for Indian Patients" as developed by the Department of Health, Education, and Welfare in collaboration with the Department of Interior.

The contemplated workload for 1966 and a comparison of the average daily inpatient census, admissions, births, and outpatient visits for the fiscal years 1964, 1965, and 1966 is reflected in the table that follows:

HOSPITAL HEALTH SERVICE

Workload data

	1964 actual	1965 estimate	1966 estimate	Change (+) or (−)
Average daily patient census by type of patient (excluding newborn):				
Total average daily census	2,316	2,275	2,245	−30
General patients	1,904	1,925	1,945	+20
Tuberculosis patients	412	350	300	−50
United States excluding Alaska	1,709	1,675	1,655	−20
General patients	1,458	1,475	1,495	+20
Tuberculosis patients	251	200	160	−40
Alaska	607	600	590	−10
General patients	446	450	450	
Tuberculosis patients	161	150	140	−10
Total admissions (excluding births)	65,934	67,000	69,000	+2,000
Total births, all Public Health Service Indian hospitals	9,458	9,700	10,000	+300
Outpatient visits for medical therapeutic and preventive service at hospital facilities:				
Total visits	742,383	754,000	774,000	+20,000
United States excluding Alaska	671,420	683,000	701,000	+18,000
Alaska	70,963	71,000	73,000	+2,000

Employee/patient ratios and average daily patient loads, by type of hospital

Type hospital	Number	Average daily patient load	Employees per 100 patients		
			1964	1965	1966 [1]
United States excluding Alaska:					
General	2	120–160	154	150	151
Do	6	45–100	149	154	154
Do	14	25–45	133	137	138
Do	18	10–25	170	169	172
Do	40		148	150	152
Tuberculosis	3	45–95	96	101	106
Alaska:					
General	2	100–350	146	154	160
Do	2	40–60	151	144	147
Do	3	10–25	200	184	185
Hospitals	50		145	147	150

[1] Reflects conversion of operations at Tucson. Hospital (TB) to be converted to health center.

ITEMIZATION OF ESTIMATE

Hospital health services

Obligations by objects	Actual, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
11 Personnel compensation	$24,895,318	$26,326,000	$26,910,000	+$584,000
12 Personnel benefits	2,030,867	2,119,000	2,180,000	+61,000
21 Travel and transportation of persons	1,073,729	1,038,000	1,038,000	
22 Transportation of things	519,901	517,000	520,000	+3,000
23 Rent, communication, and utilities	1,425,101	1,453,000	1,461,000	+8,000
24 Printing and reproduction	69,315	69,000	69,000	
25 Other services	1,834,736	1,812,000	1,811,000	−1,000
26 Supplies and materials	4,238,496	4,292,000	4,306,000	+14,000
31 Equipment	611,664	529,000	1,162,000	+633,000
42 Insurance, claims, and indemnities	5,563			
Subtotal	36,704,690	38,155,000	39,457,000	+1,302,000
Deduct quarters and subsistence charges	728,246	764,000	769,000	−5,000
Net obligations	35,976,444	37,391,000	38,688,000	+1,297,000

[1] Excludes reimbursements as follows: 1964, $678,096; 1965, $760,000; 1966, $790,000.

2. Contract medical care

Activity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
Contract medical care	$11,029,177	$11,815,000	$12,892,000	+$1,077,000

The estimate of $12,892,000 provides an increase of $1,077,000 consisting of—

1. An increase of $497,000 for rising costs of program operation.
2. An increase of $578,000 for the hospitalization, medical care, and transportation of an average of 51 additional patients per day during fiscal year 1966 and $15,000 to meet minimum demands of the contract Dental program.
3. An increase of $2,000 to provide for statutory pay increases.

Need for increase

An upward trend of approximately 4.5 percent annually is revealed by analysis of the rates negotiated in contracts with the various hospitals, clinics, physicians, and dentists with which the Division of Indian Health has continuing formal agreements. This trend is corroborated by published national surveys which indicate an even higher rate of increase. In order to maintain the ongoing level of the number of patients provided care under this program it is necessary to take into account this additional cost and request funds sufficient to cover the expected increase. The amount of $497,000 representing 46 percent of the total increase is requested.

In order to provide for the adequate care of 19 additional general medical and surgical patients per day an increase of $366,000 is requested. This increase consists of (1) $240,000 to cover hospital per diem costs; (2) $96,000 for physicians services; (3) $15,000 to provide transportation; (4) $15,000 for additional laboratory, X-ray prescription, and prosthetic appliance expenses. The projected increase in general medical surgical load is due to the addition of services to certain groups of beneficiaries in the Portland area who currently do not receive contract medical services under the PHS Indian health program. The provision of services to these groups, as reflected in this budget estimate, will provide health care comparable to that now provided in other areas under similar conditions.

An increase of an estimated 27 additional tuberculosis cases to be cared for by contract will require $185,000. Included in this amount is $165,000 to provide for the conversion of operations at Tucson.

The expected increase of five neuropsychiatric cases per day resulting from improved diagnostic effort will require $12,000.

The potential use of contract dental services to meet beneficiary needs is considerably above current contract resources. To meet minimum demands of the ongoing program an increase of $15,000 will be required.

A mandatory increase of $2,000 is necessary to provide funds for periodic pay increases.

Plan of work

The request for $12,892,000 is for an essential element of the Public Health Service Indian health program whereby medical care is purchased through contractual arrangements. To assure that quality care is obtained, formal agreements are negotiated with community hospitals, private physicians and clinics, dentists, and providers of ancillary health services. The widely scattered and small groups of Indian beneficiaries are effectively and efficiently provided urgently needed medical and related services through this mechanism. The use of contract services also makes possible special diagnostic and therapeutic services which cannot be provided in the many small and intermediate sized Public Health Service Indian hospitals at economical costs.

In addition, emergency hospital and medical care services are frequently required at locations not readily accessible to health facilities directly operated by the PHS Indian health program. Facilities equipped to provide psychiatric care to Indian beneficiaries are not operated by the Division of Indian Health necessitating the procurement of all such services through contracts.

The following table indicates the distribution of funds under the various items requested for the 1966 program. It also shows how 1964 funds were obligated and the plan of funding for 1965 operations. The actual experience of average daily patient loads are reported for 1964 together with expected levels for 1965 and 1966.

Contract medical care

	1964 actual			1965 estimate			1966 estimate		
	Average daily census	Rate	Amount	Average daily census	Rate	Amount	Average daily census	Rate	Amount
Hospitalization:									
General	504	$31.29	$5,771,878	507	$32.91	$6,090,000	526	$34.62	$6,647,000
Tuberculosis	172	17.00	1,070,184	203	17.91	1,327,000	230	18.84	1,582,000
Neuropsychiatric	219	6.15	492,947	202	6.51	480,000	207	6.85	518,000
Subtotal	895		7,335,009	912		7,897,000	963		8,747,000
Patient and escort travel			237,634			240,000			260,000
Professional field supervision			80,738			219,000			221,000
Physicians' services (inpatient fees, office visits, consultation services)			2,339,746			2,384,000			2,511,000
Dental services (emergency services, dental, laboratory prosthesis)			415,046			425,000			460,000
Other costs (laboratory and X-ray services, pharmaceuticals, proprietary drugs for inpatients and outpatients, prosthesis and burials)			621,004			650,000			693,000
Total			11,029,177			11,815,000			12,892,000

3. Field health services

Subactivity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
(a) Sanitation	$1,645,082	$1,778,000	$2,119,000	+$341,000
(b) Dental	1,835,783	2,017,000	2,044,000	+27,000
(c) Public health nursing	1,648,523	1,831,000	1,893,000	+62,000
(d) Health education	507,632	568,000	671,000	+103,000
(e) Field medical services	5,039,850	5,468,000	5,943,000	+475,000
Total	10,676,870	11,662,000	12,670,000	+1,008,000

SUMMARY OF CHANGE

Statutory salary promotions	$35,000
FICA rate increase	6,000
Annualization of 1965 new positions	44,000
Annualization of Military Pay Act increase, Public Law 88–422	7,000
Annualization of Civilian Pay Act increase, Public Law 88–426	2,000
Program increase	914,000
Net increase	1,008,000

(*a*) *Sanitation.*—The estimate of $2,119,000 is an increase of $341,000 consisting of:

Statutory salary promotions	$5,000
FICA rate increase	1,000
Annualization of 1965 new positions	5,000
Annualization of Military Pay Act increase, Public Law 88–422	2,000
Program increase	328,000
Net increase	341,000

Need for increase.—Lack of basic sanitary facilities, gross insanitary practices, and inadequate understanding of modern health and sanitation in the Indian and Alaska native home and community continue to exist despite increasing attention being given to these problems by Indian tribes and their members. These conditions are a major factor in perpetuating the poverty under which Indians continue to live. Surveys made from 1957 to 1964 of representative groups of Indian reservations including more than 10 percent of the total beneficiary population showed that (1) 50 percent of the Indian families (average 5.5 persons per family) lived in one- or two-room houses; (2) 75 percent obtained their domestic water from potentially contaminated sources; (3) 79 percent hauled or carried all water for domestic purposes; and (4) 77 percent had grossly inadequate facilities for sanitary waste disposal with a sizable portion of these having no facilities at all. These environmental conditions as well as lack of understanding of modern health practices are, in large measure, responsible for the high incidence of preventable diseases among Indians including the leading notifiable disease, gastroenteritis, and needless premature deaths particularly among infants, occasioned by diarrhea, dysentery, and respiratory ailments. These diseases continue to cause a significant patient load at Public Health Service hospitals, clinics, and contract facilities, and, at the same time, result in sporadic epidemics on Indian reservations.

Under the authority of Public Law 86–121, the Indian Sanitation Facilities Act, a coordinated tribal-Federal attack is being made to correct gross deficiencies in individual home and community water supplies, waste-disposal facilities, and other sanitation facilities. Indians participate in project planning and facilities construction, and assume responsibility for the operaton and maintenance of the completed facilities. The staff time devoted to project engineering, technical support, and motivation and training of Indian families and groups has resulted in their acceptance and participation in the program to a marked extent. Indian participation in the form of manpower, money, and materials amounts to about one-third of the total construction effort.

With the completion of all authorized projects through fiscal year 1965, including those funded under the public works acceleration program, basic sanitation facilities will have been provided for more than 24,000 Indian and Alaska native families in 349 communities, representing about 29 percent of the known need for such facilities.

In 1964–65 this activity has been closely coordinated with Federal housing programs for Indians which are conducted by the Public Housing Administration and the Bureau of Indian Affairs. By agreement between the 3 agencies, PHS is responsible for provision of water supply and waste-disposal facilities at the site of new or improved Indian housing construction. In 1965 a limited number of public housing unit "starts" are scheduled to be made on 39 reservations where water supply and sewerage facilities are most readily available.

The sanitarian aid program continues to be the key element in bridging the gap of cultural differences and modern environmental health practices. The Indian sanitarian aids, located on reservations in the contiguous States, evaluate sanitation conditions and motivate Indian families and groups to overcome basic environmental health deficiencies by the use of their individual resources and by participation in sanitation projects. The program operating level to date has provided full coverage to only one-half of the Indian beneficiary population. In addition, through a contractual agreement with the Alaska State Department of Health and Welfare, Eskimo sanitarian aids provide similar services to about half of the beneficiaries living in the remote native villages of western Alaska. The efforts under this program have resulted in a 20-percent increase in environmental sanitation improvements over the previous year. The inability of the program to render full environmental health service coverage to the total beneficiary population denies a substantial proportion of them the information and guidance necessary to reduce the high incidence of certain infectious diseases.

In addition to sanitarian aid services, the basic environmental health activities of the field health service include technical guidance and assistance to tribal governing bodies, Indian communities, and agencies providing services to Indian beneficiaries. Assistance is provided in the following areas: (1) Sanitation problems associated with economic development projects, the rapid growth of "tourism" on Indian reservations, and the rising Indian population; (2) trading post and celebration area sanitation inspections, with impetus from adoption of sanitary codes by tribal governing bodies; (3) environmental health surveys and food service training at hospitals, schools, and other institutions employing Indians and serving the beneficiary groups; and (4) followup surveys of completed sanitation facility projects to assure that maintenance and care are being furnished and that facilities are being properly used. Minimum criteria for basic environmental sanitation coverage provide that: (1) All plans for new tribal enterprises be checked from a sanitation standpoint; (2) all trading posts be inspected at least semiannually, and all major celebrations be monitored for sanitary conditions to minimize opportunity for epidemic outbreaks; (3) all Government institutional food service be surveyed at least twice per year, comprehensive institutional surveys be made biennially, and food service training courses be conducted to cover major facilities annually; and (4) followup surveys of completed sanitation facilities be made at least twice during the succeeding year after completion and at least annually thereafter. It is anticipated that about one-half of these essential services can be provided at the 1965 level of operation.

Plan of work.—Ten of the additional staff positions requested, together with increased service contracts, will extend basic environmental health activities on 22 Indian reservations and in many communities in Alaska and Oklahoma with a total beneficiary population of about 44,000. Technical assistance will be furnished to tribes on sanitation aspects of all new tribal enterprises; activities will be increased on trading post and celebration area sanitation conditions; and institutional and food service sanitation coverage will be increased by about 20 percent. Stress will be given to followup activities at Indian homes and communities to assure the maintenance of sanitation facilities completed under Public Law 86–121 by the Indians and to encourage their use of the facilities for maximum health benefit. The estimate provides $108,000 for support of the 10 positions and the Alaska contract coverage.

Twenty-two of the additional positions requested will implement the $2.2 million increase in level of Indian sanitation facilities construction under Public Law 86–121. Experience has demonstrated that to achieve effective implemen-

tation of the construction activity, 10 additional engineer and support positions are required for each $1 million increase in the construction level. The staff will provide engineering competence in the development of projects, negotiate agreements with Indian groups on the extent of their participation in the work, furnish logistical support and supervision of installation of facilities, and provide essential training to the Indian people in operation, maintenance, and care of completed sanitation facilities. The construction program requested will permit an additional 5 percent of the known need to be met. It will also provide sanitation facilities so that Public Housing Administration commitments to local Indian housing authorities for new housing units may be carried out in full and new applications for "conventional" and "mutual help" public housing for Indians may be initiated. The assistance to Federal Indian housing programs will permit construction or improvement of approximately 2,700 Indian housing units in 1966. The estimate provides $220,000 for support of the 22 positions.

(*b*) *Dental.*—The estimate of $2,044,000 provides an increase of $27,000 consisting of:

Statutory salary promotions	$7,000
FICA rate increase	1,000
Annualization of 1965 new positions	17,000
Annualization of Military Pay Act increase, Public Law 88–422	2,000
Program increase	0
Net increase	27,000

Status of program.—Dental caries, periodontal disease, and orthodontic conditions continue to be major health problems afflicting the Indian and Alaska native populations. In recent years the problems have been magnified by the inability to increase the dental resources to keep up with the tremendous growth in the child population. During 1964, in the direct services program, 100,000 examined patients received 390,481 dental treatments in 207,619 visits. For this group representing 26.3 percent of the beneficiary population only 61.5 percent of the essential dental therapeutic care was provided. The data demonstrate that about 15 percent of the beneficiary population's dental needs were treated and the children were the recipients of most of the provided care.

Although the dentist to general population ratio is about 1 to 1,900, in the Indian health program there is 1 clinician to about 4,000 people. This situation is further complicated by the fact that there is still a tremendous backlog of unmet dental needs. Most of the deplorable dental conditions found among these people are due to a lifetime of neglect, lack of understanding of measures that may be taken to prevent dental diseases and inadequate amounts of dental resources.

Over recent years there has been a marked increase in corrective and preventive services provided. For example, during 1964, Indian health direct services clinicians provided topical fluoride treatments to 48,842 patients as compared to 24,914 in 1963 and 3,139 in 1958. The number of filled teeth per patient examined has incerased from 0.9 in 1958 to 2.7 in 1964. In general, there was a 16 percent increase in dental services provided in 1964 over 1963 with absolutely no increase in staff. This improvement in the efficiency of the dental program was the result of expanded and improved use of auxiliary personnel, upgrading of fixed multiple chair dental facilities and the addition of mobile dental units.

Plan of work.—The Dental Branch to the greatest extent possible with existing resources, will continue its program of bringing beneficiary children to a maintenance level of dental care. A program of health education and other preventive services will be emphasized. The following table sets forth major practices planned for accomplishment in the direct services program during 1966 as compared to 1964 and 1965.

	1964	Estimate, 1965	Estimate, 1966
Patients examined	100,000	103,000	103,000
Visits	207,619	214,000	214,000
Completed cases	50,585	52,000	52,000
Total treatments provided (including topical fluorides)	390,481	402,000	402,000
Topical fluoride cases	48,842	53,000	53,000

(c) *Public health nursing.*—The estimate of $1,893,000 provides an increase of $62,000 consisting of:

Statutory salary promotions	$6,000
FICA rate increase	1,000
Annualization of 1965 new positions	4,000
Annualization of Military Pay Act, increase Public Law 88–422	1,000
Program increase	50,000
Net increase	62,000

Need for increase.—It is chiefly the public health nurse who provides needed health services in the home. Therefore, home followup to provide continuity of care for patients discharged from hospitals as well as those treated in clinics, and for case finding, health teaching, and preventive services is dependent upon a sufficient number of these personnel to be able to make a significant impact. The very nature of her work gives the public health nurse the greatest opportunity for close rapport with, and influence on, the Indian family as a whole, as well as tribal groups.

Plan of work.—The program increase of $50,000 for 1966 will provide for the following; one public health nurse supervisor, four public health nurses, one nursing assistant, one driver-interpreter, and three clerks. This will allow only a very modest increase in services. It is estimated that Public Health Nursing Service can be extended to an addition 1,100 families, and will permit greater depth of services in some areas such as maternal and child health and tuberculosis.

(d) *Health education.*—The estimate of $671,000 provides an increase of $103,000 consisting of:

Statutory salary promotions	$3,000
Program increase	100,000
Net increase	103,000

Need for increase.—Lack of knowledge and understanding of what causes disease and how disease is spread underlies the Indian health problem. In addition, the Indian people have their own explanations for illness. In many groups, for example, health is completely interwoven with their religion and hence, cures are achieved by ceremonials. The Indians are completely sincere in their beliefs as these are what they have been taught since birth. These two factors, lack of understanding of modern concepts and the possession of a set of beliefs of their own, make the health education task very complex and require modifications of the usual approaches and methods used in community public health activities. Typical of the lack of understanding are: (1) failure to know when and how to obtain health care; (2) poor nutrition; (3) poor oral hygiene practices; and (4) the existence of insanitary conditions in and about the home.

All specialty staff such as doctors, dentists, nurses, nutritionists, and sanitarians have opportunities in their activities to do health education. One of the functions of the health education staff specialist is to help these professionals achieve the maximum returns from their educational efforts. This assistance is the most effective when it leads the professional to present his ideas in a manner that is acceptable and understood by the Indian people.

Health Education staff also make a significant contribution by facilitating the efforts of the Division in marshaling the forces of other groups and agencies such as the Bureau of Indian Affairs, voluntary health groups, and colleges and universities in our mutual endeavors to teach the Indians and Alaska natives how to improve their health status.

Plan of work.—An increase of 12 positions will permit the extension of professional guided health education activities to Alaska and to 6 reservations not presently covered in the States of North Carolina, Oklahoma, South Dakota, Wyoming, and Arizona.

(e) *Field medical services.*—The estimate of $5,943,000 provides an increase of $475,000 consisting of:

Statutory salary promotions	$14,000
Federal Insurance Contributions Act rate increase	3,000
Annualization of 1965 new positions	18,000
Annualization of Military Pay Act increase Public Law 88–422	2,000
Annualization of Civilian Pay Act increase Public Law 88–426	2,000
Program increase	436,000
Net increase	475,000

Need for increase.—Increased workload: Current facilities have continued to experience an increased demand for services as a result of better acceptance of care by the Indian beneficiaries. The 1966 estimate of 625,000 outpatient visits for therapeutic and preventive services at Indian health centers, health stations, schools and satellite field clinics, exceeds by 50,000 visits the 1965 estimate. Plans have been made to expand the activities of the ongoing programs particularly in the fields of maternal and child health care by increasing the prenatal and postnatal preventive health activities, the number of infants and children cared for in the well-child clinics and the levels of immunization of the infants and preschool children. To meet the increase in workload and expansion of programs an increase of $241,000 is requested in 1966 to cover the cost of drugs, medical supplies, and laboratory services as well as the salaries and related costs of additional professional and supporting staff.

Preventive medicine residency program: The present shortage of physicians in the United States who are certified as specialists in preventive medicine and the expanding need for these qualified professionals in the Division of Indian Health program prompted the Division of Indian Health to establish a residency program in preventive medicine and public health with the University of Oklahoma. This program, accredited by the American Medical Association and the Board of Preventive Medicine provides for 1 year at a school of public health, 1 year at a State or local health department, and 1 year at an Indian health installation. An increase $110,000 is requested in 1966 to move forward with this all-important program.

Tucson Health Center: By the beginning of 1966 it is expected that the Tucson tuberculosis hospital operations will have been converted to the contract medical care program for inpatient care and that operation of a health center for outpatient preventive and therapeutic activities will have been started. For the operation of this health center in 1966 an increase of $85,000 is requested.

Plan of work.—The request of $5,943,000 for "Field medical services" encompass medical care and preventive health services provided at fixed field facilities, outside of hospitals, and at numerous field locations as close as practicable to the widely scattered and isolated groups of Indian and Alaska native beneficiaries. Associated with this activity is the field nutrition program, medical social service, and epidemiology training.

Services are provided to the ambulatory. These include diagnosis and treatment, referral of persons needing hospital care and followup by appropriate staff specialists; and the wide range of preventive health services such as well-baby care, prenatal and postnatal care; communicable disease control, including immunizations; disease detection services and screening through specialized clinics for such things as diabetes, tuberculosis, and ear and eye diseases.

The facilities in which these services are provided include 46 field health centers (which includes centers at larger Bureau of Indian Affairs boarding schools) and at about 300 other locations which include health stations and satellite field clinics.

The health center services are coordinated by a medical officer in charge. Centers are staffed with a full-time medical officer as a minimum, nurses (clinical and public health), nursing assistants, pharmacists, laboratory and X-ray technicians, clerical assistants, interpreter-drivers, and maintenance staff. Medical social workers and nutritionists are among the professional specialists whose services are available full-time or on a part-time scheduled basis. The health centers and stations provide the office and clinic space as well as supporting services for other members of the health team such as sanitarians, dental officers and their assistants, and community health workers.

School health centers are health facilities located in the larger boarding schools operated by the Bureau of Indian Affairs. Some of these have infirmary-type facilities and more complete medical staff, but most of them are limited to nursing and clerical personnel only. Medical care and preventive health services are provided at the smaller Bureau of Indian Affairs schools by scheduled visits of medical officers and other health personnel from Division of Indian hospitals and health centers or by medical personnel from nearby communities under contract. About 53,000 Indians and Alaska natives are enrolled in Federal (boarding and day schools), mission, and other nonpublic schools.

Health stations are smaller facilities usually without full-time staff where services are provided by teams of health personnel on either a regularly scheduled or an itinerant basis. These stations are located in small Indian communities where Indians would otherwise be without health services or would need to travel excessive distances. The schedule of services may vary from several visits a week made to a station near a busy trading post, to one visit a year made to a remote village in Alaska.

There follows a distribution by major fixed facility of the outpatient visits for 1964, 1965, and 1966:

	Actual, 1964	Estimated, 1965	Estimated, 1966
Health centers	271,700	277,000	283,500
School health centers	87,500	90,900	94,000
Other stations and satellite field clinics	192,800	207,100	247,500
Total	552,000	575,000	625,000

ITEMIZATION OF ESTIMATE

Field health services

Obligations by objects	Actual, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
11 Personnel compensation	$6,799,028	$7,673,000	$8,357,000	+$684,000
12 Personnel benefits	762,698	850,000	934,000	+84,000
21 Travel and transportation of persons	712,915	679,000	722,000	+43,000
22 Transportation of things	265,218	253,000	278,000	+25,000
23 Rent, communications, and utilities	411,128	415,000	429,000	+14,000
24 Printing and reproduction	33,880	31,000	35,000	+4,000
25 Other services	728,249	760,000	810,000	+50,000
26 Supplies and materials	861,381	895,000	988,000	+93,000
31 Equipment	217,407	226,000	242,000	+16,000
42 Insurance, claims, and indemnities				
Subtotal	10,791,904	11,782,000	12,795,000	+1,013,000
Deduct quarters and subsistence charges	115,034	120,000	125,000	5,000
Total obligations	10,676,870	11,662,000	12,670,000	+1,008,000

4. Administration

Activity	Amount available, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
Administration	$1,737,765	$1,834,000	$1,843,000	+$9,000

The estimate of $1,843,000 provides an increase of $9,000 consisting of:

Statutory promotions	$5,000
Annualization of Military Pay Act increase, Public Law 88-422	1,000
Annualization of Civilian Pay Act increase, Public Law 88-426	1,000
Program increase	2,000
Total increase	9,000

The Division of Indian Health headquarters staff required to effectively direct a widely dispersed and extremely complex health service program is funded under this title. This staff includes (1) positions specializing in the field of curative and preventive health; (2) staff engaged in such specialized fields as nutrition, medical records, medical social work, statistics, financial management,

general services, and personnel; (3) staff required for engineering and construction, who review estimates, and act as liaison between the Division of Indian Health and the Construction Branch of the Bureau of Indian Affairs.

Within the total authorization for this activity funds and positions are included for the Office of the Bureau Chief, Bureau of Medical Services. This office provides program direction to the division under its supervision. It is financed by allocating its costs among the component divisions.

The 1966 estimate of $1,843,000 for the administration activity provides for a continuation of operation in 1966 comparable to that of 1964 and 1965.

ITEMIZATION OF ESTIMATE

Administration

Obligations by objects	Actual, 1964	Amount available, 1965	Estimate, 1966	Increase (+) or decrease (−)
11 Personnel compensation	$1,353,415	$1,428,000	$1,437,000	+$9,000
12 Personnel benefits	134,381	143,000	143,000	
21 Travel and transportation of persons	99,846	103,000	103,000	
22 Transportation of things	11,443	12,000	12,000	
23 Rent, communications, and utilities	74,403	79,000	79,000	
24 Printing and reproduction	5,020	6,000	6,000	
25 Other services	31,910	31,000	31,000	
26 Supplies and materials	18,613	20,000	20,000	
31 Equipment	8,734	12,000	12,000	
Subtotal	1,737,765	1,834,000	1,843,000	+9,000
Deduct quarters and subsistence charges				
Total obligations	1,737,765	1,834,000	1,843,000	+9,000

Itemization of estimate

	Actual, 1964	Amount available, 1965	Estimate, 1966	Increase (+) decrease (−)
Program and financing:				
Obligations	[1] $59,420,256	[1] $62,702,000	[1] $66,093,000	+$3,391,000
Unobligated balance lapsing	286,353			
Total amount available	59,706,609	62,702,000	66,093,000	+3,391,000
Transferred from "National Heart Institute" (78 Stat. 210)	−737,000			
Comparative transfer from other accounts	−14,000			
Transferred to "Operating expenses, Public Buildings Service" (75 Stat. 353)	5,141			
Proposed supplemental to cover Public Law 88-426, pay act increase		−1,000,000		+1,000,000
Proposed supplemental to cover Public Law 88-422, pay act increase		−82,000		+82,000
Appropriation	58,960,750	61,620,000	66,093,000	+4,473,000
Obligations by objects:				
11 Personnel compensation	33,110,275	35,606,000	36,885,000	+1,279,000
12 Personnel benefits	2,932,485	3,124,000	3,270,000	+146,000
21 Travel and transportation of persons	2,137,316	2,075,000	2,128,000	+53,000
22 Transportation of things	800,842	786,000	812,000	+26,000
23 Rent, communications, and utilities	1,955,837	1,994,000	2,016,000	+22,000
24 Printing and reproduction	110,176	109,000	113,000	+4,000
25 Other services	12,866,551	13,511,000	14,608,000	+1,097,000
26 Supplies and materials	5,503,543	5,607,000	5,734,000	+127,000
31 Equipment	840,948	774,000	1,421,000	+647,000
42 Insurance, claims, and indemnities	5,563			
Subtotal	60,263,536	63,586,000	66,987,000	+3,401,000
Deduct quarters and subsistence charges	843,280	884,000	894,000	−10,000
Total obligations	59,420,256	62,702,000	66,093,000	+3,391,000

[1] Excludes reimbursements as follows: 1964, $678,096; 1965, $760,000; 1966, $790,000.

Summary of positions and average employment

Activity	Positions			Average employment		
	1964	1965	1966	1964	1965	1966
Hospital health services	4,325	4,372	4,411	4,098	4,088	4,127
Contract medical care	20	20	20	6	20	20
Field health services:						
Sanitation services	169	175	207	159	169	200
Dental services	193	213	213	189	204	208
Public health nursing	190	195	205	177	189	198
Health education	51	51	53	50	51	60
Field medical services	498	522	557	492	518	565
Total, field health	1,104	1,156	1,235	1,067	1,131	1,231
Administration	153	153	153	146	146	146
Total	5,602	5,701	5,839	5,287	4,385	5,524

Indian Health Activities

Passenger motor vehicles

Authorization is requested for purchase of 39 passenger vehicles of which 23 are for replacement. All vehicles to be replaced will have met the standards as to age or mileage.

The additional vehicles scheduled for procurement in 1966 are as follows:

Program and location	Number of vehicles	Type
Contract medical care:		
Billings area	1	Sedan.
Oklahoma City area	1	Do.
Portland area	1	Do.
Total, contract medical care	3	
Field health services:		
Public health nursing: Oklahoma City area	2	Sedans.
Health education:		
Billings area	1	Sedan.
Oklahoma City area	3	Sedans.
Total, health education	4	
Field medical services:		
Billings area	3	Do.
Oklahoma City area	1	Sedan.
	1	Station wagon.
Portland area	2	Sedans.
Total, field medical services	7	
Grand total additional	16	

Status of American Indians and Alaskan Natives

Chairman Hayden. Dr. Wagner, will you please file for the record your written statement and then summarize its contents for the committee, commenting principally on increases and decreases which you have proposed for the coming fiscal year?

Dr. Wagner. Thank you very much, Mr. Chairman. We have a long statement which we will submit for the record. I will read a short statement, with your permission, sir.

NEED FOR PROGRAM

The Indian health program differs considerably from other governmental health services which are provided in the United States. American Indians and Alaska natives occupy unique positions in the sociological structure of our Nation. They are set apart from the general population by a combination of many factors. The majority live in geographically isolated areas and their contact with society as a whole is extremely limited. They do not belong to any community other than their own. They have their own languages, peculiar to the respective tribes and their own cultures which have been preserved throughout past centuries.

Their educational levels and rates of economic advancement are lower than those of any other single group. Their average income is less than $1,500 a year. Their rates of unemployment range from an average of 50 percent to as high as 90 percent of certain reservations. Their homes are substandard and their environmental conditions medieval.

NUMBER OF BENEFICIARIES

The 1960 U.S. census counted 552,000 Indians and Alaska natives. Approximately 383,000 of them come within the scope of the Public Health Service's Indian health program. Some 340,000 live in 23 States containing Federal Indian reservations; the 43,000 Alaska natives are scattered over the 600,000 square miles comprising the 49th State. These people are young, with the median age about 18 in contrast to nearly 30 in the general U.S. population.

HEALTH REQUIREMENTS

Meeting the health needs of these populations requires that a comprehensive approach be utilized, which includes not only curative medical treatment but also rehabilitative services and, most important, preventive services. The whole realm of environmental health activities also must be integrated into the program.

One of the major effects of the deplorable living conditions and wretched economic level of American Indians and Alaska natives is the serious health problem which is aggravated by malnutrition, inaccessibility to medical practitioners and facilities, and by the peoples' lack of knowledge of good health principles. They suffer from excessively high rates of disease, illness, and accumulated disability, and from premature death. Their health status is comparable to that of the general population a generation ago.

Most illnesses and 18 percent of the deaths among Indians and Alaska natives are due to infectious diseases and their residuals, all of which can be considered preventable. In comparison with the general population, their infant death rate is about 70 percent higher and their average age at death is only 44 in contrast to 63 in the general population.

GOAL OF PROGRAM

The goal of the Indian health program is to raise the health status of American Indians and Alaska natives to the highest possible level. With the support of Congress significant progress has been made in

the past 10 years since the transfer of program responsibility to the Public Health Service from the Department of the Interior. Infant death rates are down from 65 to 42.9 per 1,000 live births among Indians and from 83 to 51 among Alaska natives. Tuberculosis deaths among Indians have declined from 54 to 24 per 100,000 and among Alaska natives from 236 to 37 per 100,000.

The wide disparities still existing between these populations and the general population, however, prohibits any relaxation of vigilance and efforts relating to health services.

1966 BUDGET ESTIMATE

As a step toward improving the health status of our beneficiaries, an increase of $3,391,000 and 138 positions is being requested for 1966 under the "Indian health activities" appropriation for a total of $66,093,000. An amount of $9,088,000 representing an increase of $753,000 over the funds authorized in 1965 is being requested in 1966 under "Construction of Indian health facilities."

In addition to mandatory items such as statutory increases, price increases under the "Contract medical care" program, and increased pay cost requirements in the amount of $972,000, the funds requested in 1966 for "Indian health activities" will provide for (1) a small increase in hospital employee patient ratio; (2) conversion of one hospital and transfer of the inpatients to contract facilities and the establishment of a health center in the hospital facility; (3) a slight increase in the workload of the contract medical care program; and (4) an increase in the preventive health activities consisting of sanitation, public health nursing, health education, and field medical services.

The "Construction" appropriation request provides for (1) a 50-bed G.M. & S. hospital at Belcourt, N. Dak., for which planning funds were appropriated in 1965 ($1,453,000); (2) a school health center at Fort Wingate, N. Mex. ($390,000), and health stations at Kaibeto, Ariz. ($84,000), and Lower Greasewood, Ariz. ($84,000), for which planning funds were appropriated in 1965; (3) funds for construction of 7 quarters units at Pine Ridge, S. Dak., and Crow, Mont. ($119,000); (4) alteration projects at 7 locations and planning funds at 1 location ($117,000); (5) 35 sanitation projects and provisions of sanitation facilities to serve Federal housing programs for Indians ($6,000,000); (6) funds to complete projects which were not fully funded in 1965 including $390,000 to reinstate funds reprogramed from the 12 units of quarters authorized for Bethel, Alaska, in 1965 which were used to repair the earthquake damaged Anchorage hospital ($1,064,000).

An amount of $223,000 of savings from previously appropriated projects will be applied to the 1966 program.

(The statement referred to follows:)

STATEMENT BY DR. CARRUTH J. WAGNER

Mr. Chairman and members of the committee, the Indian health program differs considerably from other governmental health services which are provided in the United States. American Indians and Alaska natives occupy unique positions in the sociological structure of our Nation. They are set apart from the general population by a combination of many factors. The majority live in

geographically isolated areas and their contact with society as a whole is extremely limited. They do not belong to any community other than their own. They have their own languages, peculiar to the respective tribes and their own cultures which have been preserved throughout past centuries.

Their educational levels and rates of economic advancement are lower than those of any other single group. Their average income is less than $1,500 a year. Their rates of unemployment range from an average of 50 percent to as high as 90 percent on certain reservations. Their homes are miserably substandard and their environmental conditions generally medieval.

The 1960 U.S. census counted 552,000 Indians and Alaska natives. Approximately 385,000 of them come within the scope of the Public Health Service Indian health program. Some 340,000 live in 23 States containing Federal Indian reservations; the 43,000 Alaska natives are scattered over the 600,000 square miles comprising the 49th State. These people are young, with the median age about 18 in contrast to nearly 30 in the general U.S. population.

Meeting the health needs of these people requires that a comprehensive approach be utilized, which includes not only curative medical treatment, but also rehabilitative services and most important, preventive services. The whole realm of environmental health activities also must be integrated into the program.

Among the major effects of the deplorable living conditions and wretched economic level of American Indians and Alaska natives are serious health problems which are further aggravated by malnutrition, inaccessibility to medical practitioners and facilities, and by the beneficiaries' lack of knowledge of good health principles. They suffer from excessively high rates of disease, illness, and accumulated disability; and from premature death. Their health status is comparable to that of the general population a generation ago.

Most illnesses and 18 percent of the deaths among Indians and Alaska natives are due to infectious diseases and their residuals. These diseases include gastroenteritis, dysentery, influenza, pneumonia, and other respiratory diseases, tuberculosis, measles, otitis media, and trachoma, all of which can be considered preventable. Their infant death rate is about 70 percent more than the general population. Their average age at death is 44 in contrast to 63 in the general population.

The goal of the Indian health program is to raise the health status of American Indians and Alaska natives to the highest possible level. In endeavoring to carry out the program, the Division of Indian Health has set the following criteria:

1. Institution of health programs which assure achievement of the Division goal through self-help activities conducted by and with the Indians and Alaska natives. The aim of these programs would be the assumption by the beneficiaries of fuller responsibilities in meeting their health needs.

2. Management of Division resources (manpower, money, and materials) in a manner that provides a coordinated and balanced preventive, curative and rehabilitative health program through a constantly updated areawide operations plan, initiated at the service unit level and consolidated in a comprehensive Division plan with Indian cooperation and consultation.

3. Institution of continuing appraisal of health status to insure efficient application of effort in those areas that will have the greatest impact on achieving the Division's goal, coupled with continued development of additional tools for measurement, evaluation, and application.

4. Management of manpower resources not only to provide for the most efficient utilization of these resources, but also to provide opportunity for total growth and development of individual staff.

5. Fostering and promotion of all extra divisional resources, public and private, with particular reference to State and local government responsibilities for their Indian citizens.

ACCOMPLISHMENTS

Significant improvements have been made in the health status of American Indians and Alaska natives in the past 10 years. The continued interest of the Congress in making this progress possible must be acknowledged. This interest is evidenced by the passage of supportive legislation subsequent to the transfer of the responsibility for Indian health to the Public Health Service in 1955 and its appropriation of requested funds; to Indian and professional organizations; to States and communities where the Indians live; and to the Indians themselves.

Mortality rates from several diseases have been dramatically reduced. Infant death rates among Indians are down from 65 to 42.9 per 1,000 live births, and

down from 83 to 51 among Alaska natives. Tuberculosis deaths among Indians have declined from 54 to 24 per 100,000 and among Alaska natives, down from 236 to 37 per 100,000. Deaths from influenza and pneumonia are approximately 30 percent lower in the two groups. Deaths from gastroenteric diseases have declined 60 percent among Indians.

Comparisons with the general U.S. population, however, are still highly unfavorable. Tuberculosis death rates are five times higher in Indians and seven times higher among Alaska natives. Deaths from influenza and pneumonia are two and three times as great, respectively, and the gastroenteritis death rate is about five times higher among Indians. The high infant death rate has already been cited.

The existence of these wide disparities prohibits any relaxation of vigilance and efforts relating to health services.

One of the keys to the conduct of a successful health program is the participation of the beneficiaries. In general, Indians have maintained much of their traditional culture language, religion, beliefs, and social organization. Among children who go to Federal Indian schools, about 8 out of 10 enter with limited ability to speak English and their knowledge of the human body and of illness and remedies is based on principles of magic rather than of medicine. Although most Indian people gain facility or become expert with English words and sentences as they grow to maturity, many others exhibit varying difficulties in grasping and accepting health concepts regularly expressed in English and commonly known and accepted in the general population. These difficulties are further complicated by the conflicts between the system of beliefs in Indian culture and of science in non-Indian culture.

In order to assure that each individual Indian's health problems are understood and are met with responsive action, including early detection of illness and Indian acceptance of treatment and effective followup services, a variety of unusual techniques must be employed by the program. Included are the use of interpreters, orientations of staff regarding Indian attitudes, beliefs and practices as they relate to health services; maintenance of close, continuous coordination of efforts with the governing bodies of tribes relative to program activities and administration; and employment and training of Indians to work in hospitals and field settings. The Division places considerable emphasis on the utilization of persons of Indian descent wherever possible, and more than 50 percent of the employees are Indians.

The increasing use of available medical facilities and the growing participation in environmental health projects are measurable indications that both Indians and Alaska natives are accepting modern medical practices as a healthful and desirable way of life. This acceptance will directly benefit their well-being and indirectly benefit their ability to compete in non-Indian society.

Since 1955, hospital admissions have increased 79 percent and births in Indian hospitals, 41 percent. The number of outpatient visits made to hospital facilities, health centers, and field clinics has nearly tripled, reaching 1,294,000 in 1964. These represent both therapeutic and preventive services. Visits to physicians at school health clinics and general school clinics held by hospital and field health center staff in 1964 were nearly 120,000; additional thousands were served through radio contact or by itinerant clinic teams in hundreds of villages in Alaska, accessible only by bush plane and dogsled; and over 100,000 patients were seen by physicians under contract to the Public Health Service.

As a result of a combination of Indian acceptance and an increased program capability, immunization activities have received progressively greater emphasis, particularly in recent years. In 1964, approximately 117,000 completed immunizations were reported by hospitals and health centers, including polio, influenza, diphtheria, pertussis and tetanus, smallpox and measles. Another 88,000 boosters and revaccinations were given.

Indian cooperation and participation in attempting to improve their health status is well illustrated by progress, made under authorization of Public Law 86–121 (the Indian Sanitation Facilities Act), which permitted initiation of a coordinated attack to correct gross environmental deficiencies by construction of domestic and community water supplies, waste disposal systems, and other essential sanitation facilities. Project planning and execution are a joint effort and the responsibility for operation and maintenace of completed facilities is assumed by the Indians. Upon completion of the 386 projects authorized from 1959 through 1965, basic sanitation facilities will have been provided to more than 24,000 Indian and Alaska native families in more than 349 different geographical locations. The beneficiaries themselves will have contributed sub-

stantially in terms of labor, money or materials. Increased program emphasis is being placed on training for both the householder and the community plant operator in the care and repair of equipment and on good health practices relating to sanitation.

Conduct of the Indian health program requires an adequate staff sufficiently trained to be able to provide total health services under these specialized conditions. Many programs have been introduced to counteract staff shortages, to improve job performance, and to assure that all resources—personnel, money, and materials—are most effectively and efficiently utilized. Examples are expanded training for licensed practical nurses to enable them to relieve registered nurses of some of their duties; training of professional staff in epidemiology, epidemiological methods, and health indices; training of headquarters and area staffs in sound management practices; execution of coordinated program planning efforts at all levels of administration, followed by continuing evaluation and refinement of plans.

New hospital and clinic facilities have been added and existing facilities improved to better serve the Indian's and Alaska native's needs. Since 1955, 4 new hospitals have been constructed and 3 hospitals which were inadequate and unsafe have been replaced; through Public Law 85–151, 110 beds have been added in 15 community hospitals serving Indians and non-Indians; 11 hospital modernization projects have been completed; 116 alteration projects have been accomplished to increase the efficiency and utilization of the health facilities; 18 field health centers and 24 field health stations have been built to bring curative and preventive health outpatient services closer to the beneficiary's home. In addition, over 600 staff quarters have been constructed since 1955.

We anticipate that continued improvements in program activities, staff training, facilities, and Indian acceptance of health services will be reflected in health statistics which will be more compatible with those in the general population.

INDIAN HEALTH ACTIVITIES

Direct medical care is currently provided to Indian and Alaska native beneficiaries by the Public Health Service through a system of 50 hospitals (including San Xavier, Tucson, which is to be converted to a health center by fiscal year 1966), each with inpatient and outpatient services; 45 health centers, 29 in various field locations and 16 at Bureau of Indian Affairs boarding schools; and more than 300 field health stations and special school clinics. In addition, where there are no Public Health Service facilities or personnel is limited, contractual arrangements for health services are made with community hospitals, private physicians, dentists and pharmacists, and State and local health agencies.

As mentioned previously in this statement, beneficiaries are using hospital, clinic, and contract services at increasingly high rates. A major proportion of the services involves various aspects of maternal and child care, due to the low median age of the populations. Another significant portion is directed to treatment of acute accidental injuries.

Hospital health services

The 1966 request of $38,688,000 for hospital health services will provide for (1) the operation of 49 Public Health Service Indian hospitals and attached outpatient clinics at an employee/patient ratio slightly higher than 1965; (2) continuance of the practical nurse training programs associated with the Indian hospitals; (3) maintenance of all Public Health Service Indian facilities, including hospitals, health centers, field stations, school clinics, and staff quarters; (4) initiation of a physicians' residency training program in general practice; (5) a more intensive effort to overcome the backlog of equipment needs; (6) the supplying of portable equipment requirements related to new construction formerly requested under the construction appropriation request; and (7) mandatory increases.

In consonance with the Indian tribes affected and the guidelines established jointly by the Department of Health, Education, and Welfare and the Department of Interior, a decision was made to close the San Xavier Indian Hospital at Tucson, Ariz., by July 1, 1965, thus reducing the number of Indian hospitals by one. Hospitalization for beneficiaries in the area served by this hospital will be provided by contractual arrangement and outpatient services through the Public Health Service field medical program.

Three practical nurse training programs for young Indian women are conducted by the Public Health Service. The oldest and largest is the school of practical nursing in Albuquerque where some 80 girls are trained and graduated each year. After graduation, they take State board examinations and following qualification as licensed practical nurses, are assigned to hospital or field positions within the Division of Indian Health, or if none are available, to other Public Health Service facilities.

In the first training program established for graduate practical nurses at the Public Health Service Experience Center at Shiprock, N. Mex., the young women learn to serve as assistants to graduate public health nurses who work in Indian homes, schools, and field clinics.

New funds made available in 1964 permitted the giving of additional clinical training and experience to graduate practical nurses at Indian health facilities in South Dakota.

All of these programs have proven highly beneficial both to the Public Health Service and to the Indian population.

The establishment of a general practice residency program in major Indian hospitals was recommended by the Indian Health Committee of the American Academy of General Practice to increase the capability of the physician to serve the Indian's needs and to assist the individual physician's professional development. A 2-year program of training and supervised experience at the Gallup, N. Mex. hospital was approved by the American Medical Association. An optional third year is provided for the physician who desires additional training.

Contract medical care

Where the Public Health Service does not have facilities or sufficient personnel, medical and dental services are provided through contractual arrangements with community hospitals, clinics, laboratories, pharmacies, and private physicians and dentists. In addition, special diagnostic and therapeutic services which are used only occasionally, are purchased through contracts, avoiding the necessity for the Division of Indian Health to support these activities on a full-time basis. Emergency hospitalization and medical care in locations where an Indian facility is not readily available are also provided under this program. Funds requested in 1966 of $12,892,000 will provide for cost increases and an increase of 51 additional patients per day during 1966. The increased workload reflects the transfer of tuberculosis patients to contract facilities from the Public Health Service San Xavier Indian Hospital, which is to be closed in 1966, an increase in neuropsychiatric cases of 5 per year and 19 additional general, medical, and surgical patients.

The projected increase in general, medical, surgical load in 1966 is due to the proposed addition of services to certain groups of beneficiaries in the Portland area who currently do not receive contract medical services under the Public Health Service Indian health program. The provision of services to these groups, as reflected in this budget estimate, will provide health care comparable to that now provided in other areas under similar conditions.

Field health services

Included in field health services activities are all preventive health services and medical and dental care provided outside hospitals at field health stations, schools and health centers, in homes, communities, and villages.

Each member of the health team is involved in this coordinated effort to improve the health of Indian and Alaska native populations. Services include medical and dental diagnoses and treatment; clinical and public health nursing; referral of persons needing hospitalization or specialized care; immunizations; communicable disease surveillance and control; specialized clinics for screening and treatment of diabetes, tuberculosis, heart disease, cancer, ear and eye diseases; followup home visits; well-baby care; prenatal and postnatal care; health education; medical social services; guidance in nutrition problems; accident prevention; environmental health services; and implementation of a cooperative Federal-tribal program to construct water supply and other sanitation facilities.

As cited previously, most of the illness and a high proportion of deaths among Indians and Alaska natives are caused by preventable diseases. It is in the field preventive health program where personnel can work directly with the people in their homes and communities that the greatest opportunity for improvement lies.

The 1966 request of $12,670,000 provides for 99 new field health positions critically needed in the program. Included in this request are funds to staff a health center at the San Xavier Hospital facility which is to be converted by the beginning of fiscal year 1966. The beneficiaries' lack of knowledge of basic health concepts and practices is a great deterrent to program accomplishment and they should benefit considerably from education in the causes of diseases and how they can be prevented; how to recognize illness and what treatment is available; and how to minimize the numbers and effects of accidents. We look forward also to increases in environmental sanitation improvements and accompanying reductions in infectious disease rates.

When the physicians' residency training program in preventive medicine which has been planned in cooperation with the University of Oklahoma and the Oklahoma State Health Department is introduced, a nucleus of specially trained qualified leaders will be established for the Indian field health program, assuring mutual benefits to the program and the beneficiaries.

CONSTRUCTION OF INDIAN HEALTH FACILITIES

Hospitals, field health centers, and field health stations

To follow modern medical practices, fully operative, functionally arranged facilities are essential to permit the most efficient utilization of the skills of specialized personnel. Many of the deficiencies which existed at the time of transfer of the program from the Bureau of Indian affairs to the Public Health Service have been corrected through alterations, additions, and new construction. But many still exist due to age, obsolescence, deferred maintenance, and unsafe conditions. In addition, population changes may create a need for increased capacities of facilities, or for construction of facilities where none exist or where they are located in borrowed quarters completely unadaptable for health services. Within the past year, construction was started on a 12-bed hospital at Barrow, Alaska, and a 27-bed hospital at Fort Yates, N. Dak. A feasibility planning study was completed by the architect for construction of a 200-bed hospital at Phoenix, Ariz. Although no funds are requested in 1966 for a new project at Mescalero, N. Mex., the Service is proceeding with plans to construct a new (replacement) 15-bed general hospital in 1967 in lieu of the health center authorized in 1963. Two major alteration projects were completed: provision of heating facilities for the Cherokee, N.C., hospital to replace the central heating system which was discontinued by BIA, and the addition of an outpatient wing and modernization of the electrical system at the Tahlequah, Okla., hospital.

Construction was completed of three health centers at Fort Hall, Idaho, McLaughlin, S. Dak., and Dulce, N. Mex. Field health stations were completed at Peach Springs, Ariz., Arapahoe, Wyo., and Rocky Boy, Mont. Construction was started on a health center at Toppenish, Wash., and on field health stations at Gila Crossing and Shonto, Ariz., and Toadlena, N. Mex.

The 1966 appropriation provides for the construction of the following facilities, for which planning funds were authorized in 1965: (1) A replacement hospital of 50 beds at Belcourt, N. Dak.; (2) a school health center at Fort Wingate, N. Mex.; (3) health stations at Kaibeto and Lower Greasewood, Ariz.

It will also permit small alterations at seven locations involving primarily the safety of patients and staff, and planning funds for a sewage treatment plant at Kotzebue, Alaska.

Staff quarters

Because of the remoteness from established communities and the isolation of many of the locations where Indian beneficiaries live, the Public Health Service must provide housing facilities in order to recruit and retain qualified personnel. When the Indian health program was transferred to the Public Health Service in 1955, a great many of the housing units made available to the Indian health staff were substandard, often mere shacks, or did not meet minimum Government standards of adequacy required for commissioned officers pursuant to law.

In 1956, to meet the critical emergency needs, approximately 350 used, prefabricated, temporary units were acquired. In addition, since 1955, over 600 permanent housekeeping units have been constructed. Currently, approximately 1,400 housekeeping units are available of which approximately one-third are inadequate (includes 280 of the temporary units which are still in use). Approxi-

mately 800 non-house-keeping units are available. No deficiency exists in this category.

The Surgeon General's Advisory Committee on Indian Health, the American Academy of General Practice and the Association of State and Territorial Health Officers have all gone on record as substantiating these needs.

The 1966 appropriation request will permit the procurement of three units of relocatable quarters at Pine Ridge, S. Dak., and four of the same type at Crow, Mont.

Sanitation facilities construction

Indian and Alaska natives live in a physical environment which is grossly lacking in safe water supplies and basic sanitation facilities. Approximately 75 percent of the beneficiary population obtain domestic water from potentially contaminated sources and about 79 percent must haul or carry all water for household purposes. An estimated 77 percent have either inadequate or no facilities for the disposal of human and other household wastes.

These conditions are in large part responsible for the spread of infectious diseases and premature deaths from diarrhea and dysentery, particularly among infants.

Under Public Law 86–121, which has been augmented through the accelerated public works program authorized under Public Law 87–658, the Division of Indian Health, in cooperation with the Indians, constructs both community and individual water systems and other needed sanitary facilities. This activity also includes the training of Indians in the use and maintenance of facilities, and motivating and educating them to desire a better environment.

The 1966 request will permit (1) the construction of 35 projects urgently needed to correct gross sanitation deficiencies and for investigations, emergency works, supplies and equipment; (2) construction of sanitation facilities to complement the Federal housing programs for Indians conducted by the Public Housing Administration and the Bureau of Indian Affairs in accordance with mutual understandings reached between the three agencies.

SUMMARY

In summary, the appropriation request before you for "Indian health activities" of $66,093,000 represents an increase of $3,391,000 and 138 positions (39 hospital, 99 field health). In addition to mandatory items such as statutory increases, cost increases under the contract medical care program and increased pay cost requirements in the amount of $972,000, the funds requested will provide for (1) a small increase in the hospital employee-patient ratio, (2) conversion of one hospital by transfer of the inpatients to contract facilities and the establishment of a health center in the hospital facility, (3) a slight increase in the workload of the contract medical care program, and (4) an increase in the preventive health activities consisting of sanitation, public health nursing, health education, and field medical services.

The "Construction" appropriation request in the amount of $9,088,000 provides for (1) a 50-bed general medical and surgical hospital at Belcourt, N. Dak., for which planning funds were appropriated in 1965 ($1,453,000); (2) a school health center at Fort Wingate, N. Mex. ($390,000), and health stations at Kaibeto, Ariz. ($84,000), and Lower Greasewood, Ariz. ($84,000), for which planning funds were appropriated in 1965; (3) funds for construction of 7 quarters units at Pine Ridge, S. Dak., and Crow, Mont. ($119,000); (4) alteration projects at 6 locations and planning funds at 1 location ($117,000); (5) 35 sanitation projects and provision of sanitation facilities to serve Federal housing program for Indians ($6 million); (6) funds to complete authorized projects not fully funded in 1965 including $390,000 to reinstate funds reprogramed from the 12 units of quarters authorized for Bethel in 1965 which were used to repair the earthquake-damaged Anchorage hospital ($1,064,000).

An amount of $223,000 of savings from previously appropriated projects will be applied to the 1966 program.

DECREASE IN TUBERCULAR PATIENTS

Chairman HAYDEN. I am interested in a sentence in your highlight statement to the effect that your average daily patient census is expected to decrease by 30 patients per day. The supplementary mate-

rial indicates that this decrease is among the tubercular patients. Is this because there is less infection of patients or a greater cure of those who have been infected?

Dr. WAGNER. Mr. Chairman, this is true, there has been a steady decrease in the number of tuberculosis patients and it is due to two factors: one is the early detection of the disease and the availability of drugs and other methods of treatment which bring it under control. I think also with the increased resources that have been made available to the Division by the Congress we have been able to find these cases earlier and bring them under treatment. We project there will be a decrease of the average daily patient load for tuberculosis by some 50 next year as compared to last year.

CLOSING OF HOSPITAL AT TUCSON, ARIZ.

Chairman HAYDEN. In the coming year you will operate only 49 hospitals. Yet you have indicated you plan to close out the hospital at Tucson, Ariz. Your text indicates there will be no overall savings to the Division of Indian Health inasmuch as the money appropriated for the Tucson hospital must be utilized in other places. What is the reason for eliminating the Tucson hospital?

Dr. WAGNER. Mr. Chairman, as you know, we are running an average daily patient load of tuberculosis patients in the Phoenix, Ariz., area of around 85 and we have beds at the Tucson facility for only about 45 to 50. We have a contract facility in Tucson, which has a capacity of over 100 beds. It would be more economic and we feel to the benefit of the Indian to combine the Tucson facility with the Oshrin facility by placing all of the patients together. This would then release the Tucson facility so that we could set it up as a health center and concentrate on preventive health services and outpatient services to the San Xavier Reservation and the northern Papago.

The savings, although not monetary, will be in the form of increased program. We will not only be able to take care of the tuberculosis patient but also to add services in the form of preventive health, well-baby clinics, prenatal care, and curative services on an outpatient basis to a larger number of people within the same amount of money we are now spending for tuberculosis care alone.

Chairman HAYDEN. I have received a letter from Congressman Udall, a Member of Congress from Arizona, with regard to this matter. I will place it into the record. I shall appreciate it if you will prepare an answer to the letter which can also be included in the record.

Dr. WAGNER. I will be glad to, sir.

(The letter and reply referred to follows:)

SAN XAVIER HOSPITAL

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., February 25, 1965.

Hon. CARL HAYDEN,
Old Senate Office Building,
Washington, D.C.

DEAR CARL: Last Thursday I conferred with leaders of the Papago Tribe and they expressed dismay at plans of the Public Health Service, Division of Indian Health, to convert San Xavier Indian Hospital to a "full-time health center." I

had assumed the tribe would be in communication with your office prior to tomorrow's meeting of your committee when this budget item will be discussed. But I have just learned that no statement of the tribe's position has been forthcoming.

From what I was told Thursday, the Papagos are concerned with the PHS proposal on several grounds.

First, the Papagos are confused about the intentions of PHS so far as future use of this facility is concerned. For instance, a PHS news release of January 26, 1965, states that the "full-time health center" to be maintained after July 1, 1965, will "provide more general medical services for the approximately 2,000 Indians living in and around San Xavier Reservation." Reservation population is between 450 and 700. In a January 18, 1965, letter from Dr. Ernest C. Siegfried, Indian health area director at Phoenix, Eugene J. Johnson, who was then tribal chairman, was told that the San Xavier Hospital would be converted to a health center "to provide general medical services to the residents of San Xavier." It is felt, then, that the matter of health services to nonreservation Papagos needs to be clarified.

Also, the Papago Council feels it was led to believe that it would have an opportunity to submit recommendations with regard to the hospital prior to a PHS decision. But PHS moved quickly and before the tribe could offer suggestions.

There is also a concern over loss of jobs upon changeover from hospital status to health center status. Instead of the 18 jobs now available to Papagos, it is my understanding that the Indians could qualify for only 5 jobs under the proposed health center setup.

Without an outpatient clinic at San Xavier, the Papagos would be forced to obtain medical help from private physicians in Tucson or travel 65 miles to the hospital at Sells. It should also be borne in mind that the Pima County Hospital requires a year of off-reservation residence before it can render assistance.

All these factors understandably are causing worry for the Papagos. Any efforts you can make to clarify the policies and future plans for the San Xavier facility would be extremely welcome.

Best regards,

MORRIS K. UDALL.

OSHRIN INDIAN TUBERCULOSIS HOSPITAL

The following is in response to Congressman Morris K. Udall's letter of February 25, 1965, which concerns the Division of Indian Health proposal to convert the San Xavier PHS Indian Hospital to a health center and transfer the care of all tuberculosis patients in the Phoenix area to the Oshrin Indian tuberculosis hospital at Tucson, Ariz.

During the past 2 years the Division of Indian Health has undertaken a thorough analysis of its tuberculosis control program in the Phoenix area with specific reference to the future status of the San Xavier facility. Our study reveals the following:

1. The tuberculosis inpatient load shows an encouraging continuous decline for the past several years. We project that a total of 52 beds will be required in 1970 to allow for peak periods as compared to approximately 100 now required.

2. The San Xavier facility has a bed capacity of 50 and would be very expensive to expand; the Oshrin hospital has a bed capacity of 110 and requires no revision.

3. The per diem cost at the San Xavier hospital exceeds the contract cost at Oshrin by $1.24.

4. The Oshrin tuberculosis hospital at Tucson has the capability of caring for the total tuberculosis inpatient load for the area. They have geared their operation strictly for the care of Indian tuberculosis patients and provide a quality of service that is capable of meeting Indian needs, both medical and psychological.

5. The residents of the San Xavier Reservation are faced with health problems which require an intensive preventive health program which they are not now receiving. By converting the San Xavier Hospital to a health center, these important services can be provided and supported by the savings realized by taking advantage of the lower per diem rates at Oshrin.

For these reasons, the Public Health Service plans to make the conversion on or about July 1, 1965.

The health center, which will be established in the San Xavier facility, will be staffed with a medical officer, community health educator, and other supporting clinical, preventive health, and administrative personnel. Two major types of services will be provided to the approximately 700 residents of the San Xavier Reservation. Regular outpatient general medical and surgical services will be available to the Indian people, the same as provided in any private physician's office in the country today. If the individual requires inpatient hospital care, a referral will be made to the Sells PHS Indian Hospital if the patient can be safely transported. If immediate hospitalization is required, the patient will be referred to one of the private general hospitals in Tucson through contractual arrangements.

The second major type of service to be provided to the San Xavier residents will be a preventive health program combining health education, maternal and child health, and measures to overcome many of the communicable diseases and environmental health problems with which they now suffer.

The Papago tribal members who move to the city of Tucson will be provided services in the health center during the year they are establishing residency and become eligible for welfare and other city and county services.

Although the decision to convert the San Xavier facility to a health center may appear to be a rather abrupt proposal to some members of the tribal governing body, we wish to point out that the tribal officials have been aware of this plan since March 2, 1964, when Mr. Eugene Johnson was officially apprised of the proposal during a meeting in Washington, D.C., with members of the Division of Indian Health headquarters staff. Since that date, through a series of meetings at Sells and through written communications from our PHS area staff at Phoenix, continuing developments of this proposal have been brought to the attention of the governing body. In addition, other tribes within the State of Arizona have been advised of the proposal. The tribes other than the Papago have raised no major objections.

It is true that some Papago tribal members now employed at the San Xavier hospital may be affected by the conversion. The health center will not require a kitchen staff or as large a maintenance and subprofessional group as is now employed in the hospital operation. However, all staff members so affected will be provided jobs in the Phoenix area if they are able and willing to move. For those who choose to remain in Tucson every effort is being made to assist them in finding local employment with other governmental or private agencies.

We believe that the proposal to convert the San Xavier hospital to a health center and consolidate all inpatient tuberculosis care in the Oshrin facility to be to the best interest of the Papago and other tribal groups and permits program expansion to meet a real need of these groups without additional cost.

General Practice Residency Training Program at Gallup, N. Mex.

Chairman Hayden. I observe that you plan to initiate a general practice residency training program at the Gallup Hospital. Is this a new program?

Dr. Wagner. Yes, sir, it will be a new program, in which we hope we can recruit these young physicians and train them in general practice so that they can go out prepared and capable of managing a total comprehensive health program at the reservation level.

Nurse Training Program

Chairman Hayden. Last year, the Senate added $20,000 to your budget for enrollment of qualified students who have completed practical nursing training at Sioux Sanitarium Professional School of Nursing. What is the status of this program?

Dr. Wagner. Mr. Chairman, this is a very important item. We have recruited for professional nurse training from those girls who have completed their practical nurse training. We have had some difficulty in getting the number that the $20,000 authorized into school,

because, first, it was a new program and just getting off to a start, and, second, it was difficult to find girls whose training in high school met the qualifications requirements of the professional nursing school. We hope that we can get this under full operation this year, sir.

Dental Health Program

Chairman Hayden. Last year, Congress added an unbudgeted $100,000 to your dental health program. What have you been able to accomplish with these additional funds?

Dr. Wagner. Mr. Chairman, this was extremely valuable to us, because, as you know, we are only meeting about 10 percent of the total dental needs of the Indian population. This has forced us to restrict our services to the preschool children and the child in school, and then take care of only emergencies amongst the rest of the population.

The $100,000 that we were provided last year allowed us to extend our services not only to these children, but to include additional services in the form of some care to pregnant women and some care to children who required, in addition to the routine care, special services in the way of correction of deformities, prevention of deformities, and this type of activity.

Chairman Hayden. I have received another letter from Dr. I. Lawrence Kerr, Council on Legislation, American Dental Association, requesting an additional $350,000 for this purpose, which will be printed in the record at this point.

(The letter referred to follows:)

American Dental Association,
Washington, D.C., February 24, 1965.

Hon. Carl Hayden,
Chairman, Committee on Appropriations,
U.S. Senate, Washington, D.C.

Dear Senator Hayden: I am writing you in regard to the fiscal 1966 appropriations for the Dental Services Branch of the Division of Indian Health of the U.S. Public Health Service.

The American Dental Association believes that the allocation in the proposed fiscal 1966 budget for dental health activities of the Division is inadequate to meet the needs and recommends that the appropriation for this purpose be increased by about $350,000. Such an increase would permit the addition of sorely needed personnel and would permit acquisition and operation of additional mobile treatment units. Such an increase would have at least these effects:

It would permit dentists to provide about 35,000 treatments to 8,000-10,000 additional patients;

The present ratio of dentists to Indian beneficiaries, 1 to 4,100, would be lowered to about 1 to 3,700. In the general population of the United States, the ratio is about 1 to 1,900;

It would bring the proportion of the total Indian health budget spent on dental health closer to the amount spent by the general population. The current budget for the Division devotes 4.5 percent of its funds to dental activities. In fiscal 1966, were the additional $350,000 to be appropriated, this would be revised upwards to 4.7 percent. Among the general population, 10 percent of the health dollar goes for dental care.

Available information documents the needs for this modest increase in the funds available for dental activities. The U.S. Public Health Service inherited a massive backlog of accumulated dental needs when it assumed full responsibility for the health of the Indian people. Since the resources needed to reduce this were lacking and since most forms of dental disease are progressive, the decision was reached that care of adult population would be restricted almost

entirely to emergency treatment so that most of the limited resources available could be applied on an incremental basis to children.

This approach has characterized the program of the Dental Services Branch of the Division for several years now. Professional services are extended to children through the efforts both of commissioned corps personnel and of civilian dentists under contract. The program is sound in design, but in operation, it is far too limited because of restrictions on personnel and equipment imposed by the inadequate budget.

Statistics for fiscal 1963 indicate that slightly more than 203,600 of the 380,000 persons in the Indian beneficiary population were then under age 18 and that of this number, approximately 122,000 were between ages 6 and 18, the critical years for the control of dental disease and the teaching of sound oral health habits. The dentists were able to treat only 88,000 patients in the reporting year. These patients received a total of about 380,000 services and needed, but could not be provided, an additional 185,000 services. Since even this number of patients treated represented less than 25 percent of the total beneficiary population, virtually all of whom need dental care, it is obvious that the dental program needs to be broadened considerably in scope.

The association appreciates the fact that Congress has been becoming more and more aware of the health needs of the Indians. The notable increase in effective performance by the U.S. Public Health Service since it received this responsibility in 1955 could not have taken place without substantial appropriations. Related to the size of the problem, however, such success serves merely to underscore the need for constant and increasing support of the well-constructed and well-administered programs of the Division of Indian Health. The increase requested in this letter for the Dental Services Branch would be a real step forward.

The association appreciates this opportunity of communicating to you and your colleagues the viewpoint of the dental profession. It is my hope that this letter may be made part of the hearing record.

Sincerely yours,

I. LAWRENCE KERR, D.D.S.
Member, Council on Legislation.

PROFESSIONAL HEALTH GUIDANCE PROGRAM

Chairman HAYDEN. Your statement indicates that you are asking for an additional 12 positions to extend professional guided health activities to 6 reservations. Where are these reservations?

Dr. WAGNER. Mr. Chairman, this is under the field health item and it allows us to provide for the first time health education in the State of Alaska, and in addition to that to add health educators at the reservation in North Carolina, two in Oklahoma, one at Winterhaven in the Phoenix area, one each in the Aberdeen area and one in the Billings area in Wyoming at Wind River Reservation.

ALLOCATION OF FUNDS FOR OFFICE OF BUREAU CHIEF, BUREAU OF MEDICAL SERVICES

Chairman HAYDEN. In your justification of funds for administration you indicate that funds and positions are included for the office of the Bureau Chief, Bureau of Medical Services. How much money do you transfer to that office, and how many of your positions are made available to that office?

Dr. WAGNER. I will have Mr. Chadwick answer that, sir.

Mr. CHADWICK. Mr. Chairman, the Office of the Bureau Chief is funded from several appropriations. We would be glad to put into the record the amount from each appropriation, if you would so desire.

Chairman HAYDEN. Very well.

(The information referred to follows:)

BUREAU OF MEDICAL SERVICES, OFFICE OF BUREAU CHIEF

The Office of the Chief, Bureau of Medical Services provides program direction to the activities under its supervision. It is financed by the allocation of its costs among Bureau activities.

The 1966 financing and estimated cost for this Office is as follows:

Source of funds	Positions	Amount
Indian health activities	24	$332,000
Hospitals and medical care	23	300,000
Foreign quarantine	3	45,000
Total	50	677,000

Chairman HAYDEN. There will be placed in the record the budget estimate for construction of Indian health facilities in the amount of $9,088,000, which is $753,000 more than was appropriated last year.

(The justification referred to follows:)

CONSTRUCTION OF INDIAN HEALTH FACILITIES

Appropriation, 1965		$8,335,000
Unobligated balance from prior years		4,170,509
Total available for obligation		12,505,509
Decreases:		
Hospitals and clinics	$5,605,868	
Personnel quarters	885,323	
Alterations	1,391,097	
Construction of Indian sanitation facilities	4,249,221	
		12,131,509
Carried into 1966		374,000
Increases:		
Hospitals and clinics	2,124,200	
Personnel quarters	607,600	
Alterations	156,200	
Construction of Indian sanitation facilities	6,200,000	
		9,088,000
Total available for obligation		9,462,000

Analysis by activities

	Amount available 1965	Fiscal year 1966			Total available 1966 compared to total available 1965
		Unobligated balance from prior years	1966 budget requests	Estimated total available	
1. Hospitals and clinics	$5,621,668	$15,800	$2,124,200	$2,140,000	−$3,481,668
2. Personnel quarters	1,188,723	303,400	607,600	911,000	−277,723
3. Alterations	1,445,897	54,800	156,200	211,000	−1,234,897
4. Construction of Indian sanitation facilities	4,249,221		6,200,000	6,200,000	+1,950,779
Total	12,505,509	374,000	9,088,000	9,462,000	−3,043,509

CONSTRUCTION OF INDIAN HEALTH FACILITIES

HIGHLIGHT STATEMENT

Modern-day Indians are afflicted with health problems that our father overcame a generation or more ago. Diseases that are not a serious problem throughout the non-Indian population still cause untoldl illness, misery, and death among Indians.

Inadequate Indian health facilities are in part to blame. This inadequacy is a product of age, obsolescence resulting from transition to modern hospital practice, lack of facilities, and deferred maintenance. Present-day health practices necessitate modern, functionally arranged facilities. Specialized equipment and facilities must be employed in the conduct of these services. Furthermore, there is an increasing necessity to achieve the maximum possible utilization of the skills and talents of specialized personnel by providing the most efficient circumstances in which to practice.

To assist in conquering the controllable health conditions afflicting the Public Health Service Indian beneficiary and to achieve and maintain an improved health status, the program for 1966 contains construction funds for a new (replacement) hospital at Belcourt, N. Dak. Planning funds for this hospital were appropriated in 1965. Additional funds are included in this estimate under the alterations activity to correct hazards or for other necessary improvements at seven other locations.

Although no funds are requested in 1966 for a new project at Mescalero, N. Mex., the Service is proceeding with plans to construct a new (replacement) facility for inpatient and outpatient care in 1967 in lieu of the health center authorized in 1963. The balance of Mescalero Health Center planning funds and savings from other projects are being used to plan this replacement facility.

Much of the medical care is provided in field health centers and outpost stations. A great many of the clinics are badly in need of repair or are housed in obsolete, substandard buildings, or in borrowed space (school basements, chapter houses, trading posts); many are without adequate water, toilet facilities or heat. In 1966, funds are included for the construction of a new school health center at Fort Wingate, N. Mex., and health stations at Kaibeto, Ariz., and lower Greasewood, Ariz. Planning funds for these projects were appropriated in 1965.

The acute need for staff housing still persists. The Indian tribes who represent the beneficiary populace of the Public Health Service are generally located in isolated and sparsely populated areas, where trained personnel needed to carry on a health program cannot be locally recruited and where the local economy and practices are such that essential personnel recruited elsewhere discover that housing for rental simply does not exist. Recruitment and retention of professionally and technically trained personnel at the barren and hardship posts to which the bulk of Indian health employees are assigned depend on the availability of adequate housing. The seven houses proposed in this estimate will help alleviate the critical shortage at two locations. The Surgeon General's Advisory Committee on Indian Health, the Association of State and Territorial Health Officers, and the American Academy of General Practice have strongly recommended the need for adequate staff quarters to recruit and retain qualified staff.

However, inadequate facilities and lack of health services and personnel are not wholly to blame for the Indian health plight. The lack of basic sanitation facilities, the deficiencies in sanitary conditions and the substandard and overcrowded dwelling conditions are in large measure responsible for causing and perpetuating diseases, illnesses and causes of deaths to the Indian. In a concerted and cooperative tribal-Public Health Service effort to correct these gross deficiencies, the request for 1966 contains funds to help resolve some of the sanitation problems at 35 project sites. In addition, funds are included with which the Service will, in cooperation with the Public Housing Administration and the Bureau of Indian Affairs, engage in the provision of water and sewage facilities to public housing sites for Indian beneficiaries.

The estimate also contains $1,064,000 to complete 1965 program projects undertaken, for which total project requirements were not provided.

Funds requested in 1966 and justified in this estimate (new program) on a project basis by activity, follow:

	To complete 1965 program	1966 new program	Total 1966 request
Hospitals and clinics:			
Hospitals	$100,000	$1,453,000	$1,553,000
Health centers and stations	29,000	558,000	587,000
Total, hospitals and clinics	129,000	2,011,000	2,140,000
Personnel quarters	641,000	119,000	760,000
Alterations	94,000	117,000	211,000
Sanitation facilities (Public Law 86-121)	200,000	6,000,000	6,200,000
Total 1966 request	1,064,000	8,247,000	9,311,000
Application of prior year funds	0	223,000	223,000
Appropriation request	1,064,000	8,024,000	9,088,000

HOSPITAL AND CLINICS

1966 request $2,124,200

Belcourt Hospital, Belcourt, N. Dak 1,453,000

Construction of a new 50-bed general medical and surgical hospital, including an outpatient department, to replace the existing hospital facility.

PROJECT COST ESTIMATE

Planning funds appropriated, 1965	$85,000
Construction funds requested in 1966	1,453,000
Equipment funds to be requested in 1967 under Indian health activities appropriation	165,000
Total estimated project cost	1,703,000

EXISTING FACILITY

The existing hospital at Belcourt was constructed in 1930 as a 47-bed facility. Although its current bed capacity is listed as 38 beds, its optimum capacity based on minimum accepted space requirements for hospital patient bedrooms is only 29. In addition, the adjunct hospital services areas, the outpatient area, the allied and specialized service areas, and the field health areas are grossly inadequate and poorly located functionally.

Entrance to both the operating room and the delivery room is made from the main corridor. There is no provision for essential sterilization facilities (flash and other), surgical dressing areas, cleanup room, anesthesia, storage or janitors closet in the surgical area. No scrub facilities, cleanup area or utility room for the obstetrical suite exists. In addition, no space is available in the nursery for a treatment room or for a suspect nursery and it is impossible to control the ventilation in this area.

The outpatient clinic consists of three examining rooms and a grossly inadequate emergency room, which by necessity, is used as a fourth examining room and small waiting area. Under these extremely crowded conditions, outpatient visits handled by the staff totaled 22,136 during 1963 and 25,676 in 1964.

The laboratory is located in two small rooms in the basement which are remote from the inpatient area and inadequate for the many procedures required in performing inpatient and outpatient services. Many deficiencies exist in the construction and arrangement of the dietary department which result in an inefficient operation. The office areas for the hospital and field health services are also located in the main building and are below the accepted standards.

The existing building does not lend itself to modernization and as a result of an inspection by the State fire marshal, the hospital has been declared obsolete and unsafe for use.

The proposed new replacement hospital will provide inpatient and outpatient services by Public Health Service medical and ancillary staff and also by a contract surgeon. Preventive health services will be extended from the hospital through field health clinics at Dunseith and at schools and by home visits.

When the new facility is opened, use will be continued of three referral hospitals in Minot, N. Dak., 137 miles away, to the extent necessary to provide certain infrequently used specialty services that will not be available at the Indian hospital. Tuberculosis cases will be hospitalized at a State sanatorium located near the facility and psychiatric cases will be sent to a State facility 179 miles from Belcourt.

PROJECTED UTILIZATION

The following is an estimate of the inpatient and outpatient workloads anticipated after construction is completed:

Admissions	2,200
Births	310
Average length of stay (days)	7
Average daily patient load	42
Outpatient visits (facility), medical	27,000
Dental visits	3,800

The pediatric load is expected to remain high and a progressive increase in the hospitalization of older patients is anticipated. Outpatient visits will increase as health education and public health activities in the community and home are increasingly effective.

Based on the pattern of hospitalization and increasing length of stay, it is estimated that the 50 beds will be distributed approximately as follows:

	Beds	Average daily patient load
Total	50	42
Medical	20	12
Surgical		6
Pediatrics	24	20
Obstetrics	6	4

There are five community hospitals located in or adjacent to the service unit. Two of these local hospitals are nonaccredited. The other three, all of which are accredited and located 30 to 50 miles distant from the service unit, have the greatest number of private physicians in practice. No specialized services are available in the two closest hospitals and the medical manpower is limited to four local general practitioners in the one and two in the other.

In general, transportation available to the Indian beneficiary is limited. The condition of most vehicles owned by the beneficiary population is very poor. Commercial transportation is available daily by bus going east and west and by train twice weekly, also operating east and west of the service unit. Complicating the transportation services are extreme weather conditions (primarily winter) which consistently makes travel difficult for some if not most of the beneficiary population. These factors would be detrimental to the beneficiaries orderly and adequate use of medical services available through community resources.

It will not be feasible to convert to non-Federal community facilities for provision of health services because of—

(1) Attitude of the community toward the Indian.
(2) Attitude of the Indian toward the community.
(3) Status of acculturation of the Indian.
(4) Special health requirements of the Indian beneficiary.
(5) Lack of an adequate number of acceptable beds within a reasonable distance of the service unit, necessitating abnormal commuting time.

The separation of outpatient and inpatient medical management is not desirable. The special needs of the beneficiary population reqiure service which are comprehensive (preventive, curative, rehabilitative) in nature which are generally not totally available through community medical resources. Local com-

munity hospitals can and are providing for the needs of the local general population but are not geared for the special needs of the beneficiary population. The separation of services could result in a lack of continuity in the comprehensive medical management of the patient.

The unique health needs of the Indian beneficiaries of the Belcourt service unit will best be met in the Public Health Service Indian hospital which is specifically designed to meet the particular health requirements of this Indian group.

The replacement facility proposed herein adheres to the joint Bureau of Indian Affairs-Public Health Service "Criteria for Construction of Health Facilities for Indian Patients," October 1963.

Lawton Hospital, Lawton, Okla..... $100,000

In 1965, funds were appropriated to initiate this project on the basis that only those construction funds required during the budget year (estimated obligations) be made available.

Funds in the amount of $100,000 are requested in 1966 to complete construction of this project which was initiated in 1965 on a partially funded basis.

Clinics (health centers and stations)..... $587,000

Clinics are one of the key resource points for medical care, preventive health programs, and health education. In the Indian health program, peripheral health services stem from the strategically situated health center or health station.

The clinic, through preventive health practices and health education, may well prove to be the most successful and economical vehicle in the struggle to raise the Indians' health standard. These clinics, held every day at some locations and as infrequently as once a month in some of the more desolate areas, provide general care to the sick, injured, impaired, or disabled. Public health and clinical nursing service, personal health and sanitary services, maternal and child health services, communicable disease control, dental services, and school health and other health services are all provided at the clinic. These services have been developed on the basis of the Indian's most pressing needs, and with a view toward helping the Indian to help himself.

Since the Indian can travel only a reasonable distance (and in most instances in primitive or no conveyances), ambulatory medical care and preventive services are extended into the remote, barren and isolated areas where he dwells.

In 1966 funds are requested for construction of a school health center at Fort Wingate, N. Mex., and health stations at Kaibeto, Ariz., and Lower Greasewood, Ariz. Planning funds were provided for these projects in the 1965 appropriation. In addition, the estimate for 1966 includes $29,000 to complete the 1965 program.

The definition of health centers and health stations for which funds are requested follows:

1. *Health center.*—A facility where health services are available at least 40 hours a week and where physicians' services are available either full time or on a regular weekly schedule and where other health staff is stationed such as dental, clinical/public health nursing, sanitation, health education, and medical social services.

2. *Health station.*—A facility where, although physicians' services may be regularly scheduled, physicians are not available full time, but one or more other health services are available on a regularly scheduled basis, such as dental, public health nursing, sanitation, health education, and medical social services. Such services are available from itinerant personnel headquartered in Public Health Service Indian hospitals and health centers or on a contractual basis.

The location, need, and estimated cost for each of the proposed facilities follows:

Health Centers

Fort Wingate, N. Mex..... $394,000

PROJECT COST ESTIMATE

Planning funds appropriated 1965	$21,000
Balance of planning funds requested in 1966	4,000
Construction funds requested in 1966	390,000
Equipment funds to be requested in 1967 under "Indian health activities" appropriation	35,000
Total estimated project cost	450,000

Fort Wingate, located on U.S. Highway 66 approximately 16 miles east of Gallup, N. Mex., is the location of a 13-grade Bureau of Indian Affairs boarding school, with an enrollment of 1,000 students. A new 1,000-pupil high school is being completed bringing the total enrollment to 2,000 students by 1965.

There has been no resident physician or nurse and no regularly scheduled medical services, other than annual school physical examinations, immunization services, and daily screening by a commuting school nurse who serves the Manuelito Hall dormitory in Gallup. Students are referred for physician's services to the Public Health Service Gallup Hospital, approximately 20 miles away. Ill children with subacute conditions or minor illnesses and children convalescing after hospital discharge are cared for in respective dormitories. Due to the limited number of pediatric beds at Gallup Hospital, students with contagious diseases such as measles, chicken pox and mumps are cared for in the dormitories.

In the school year 1963–64 visits to the nurse totaled nearly 1,500. Additional visits were held to a minimum, and dormitory instructional aids gave medications. In the same period 1,808 individual referrals were made (referred) to Gallup for diagnosis and/or treatment, as well as for physical examinations. Some of these had subsequent followup visits. These were in addition to the annual physical examinations conducted by a medical team from Gallup Hospital, in the dormitory at the beginning of the school year.

Dental services are provided by a Public Health Service dentist located in another building on the campus. The present clinic is overcrowded and no expansion is possible. In 1964, 1,439 students were treated from Fort Wingate and surrounding schools.

The new school health center will provide outpatient clinical services to an expanded enrollment of 2,000 students. A comprehensive school health program is planned, with special attention to eye and audiometric testing, immunization services, and other preventive and screening services. Also provision will be made for 10 infirmary beds for short-term observation, minor illness or indisposition requiring nursing care. All these services will be under the direction of a full-time medical officer and supporting staff. Students requiring hospitalization will be referred to the Gallup Hospital.

The Gallup Indian Hospital has recently recruited an ear specialist. Many of the children who were being sent to Albuquerque for ear surgery will now be cared for in Gallup, with the consequent increase in convalescent care. This overload would be transferred to the Fort Wingate boarding school for convalescence and continuous education.

Children with primary tuberculosis are sent to a contract facility for hospitalization several hundred miles from the reservation. Due to extremely difficult home conditions, most of these patients must remain in the contract facility away from their native environment for a much longer time than is necessary to treat purely medical conditions. From the social and psychological point of view, this imposes an undesirable separation of the children from their environment and families. It is proposed to have these patients of school age hospitalized in the contract facility only long enough for diagnostic studies and treatment until stabilization is achieved, which takes an average of 3 to 6 months. Posthospitalization treatment, requiring 1 to 2 years, will be given in Fort Wingate boarding school. This will provide the Navajo children with an environment of their own. The specialized care that these children may need will be provided by the TB consultant who makes periodic visits to the field units.

Upon completion of the facility the expected annual workloads are estimated as follows:

Service:	*Annual visit*
Physician	4,000
Nurse	16,000
Dental	2,000

It is anticipated that there will be 1,500 days of infirmary care.

It is requested that $4,000 to finish planning and $390,000 to construct the center be provided in 1966. Total estimated cost, including planning and equipment is estimated to be $450,000.

Health stations

Kaibeto, Ariz $84,000

PROJECT COST ESTIMATE

Planning funds appropriated, 1965	$7,000
Construction funds requested, 1966	84,000
Equipment funds to be requested, 1967, under Indian health activities appropriation	6,000
Total estimated project cost	97,000

Kaibeto is a remote community located on the Navajo Reservation 48 miles north of Tuba City, Ariz., and 26 air miles south of the Utah State border. It has an estimated local population of 675. Adjacent communities have a population of about 1,800. At present the Bureau of Indian Affairs operates a boarding school with an enrollment of 270 students. Upon completion of a second BIA boarding school (expected date of completion January 1966) the total school enrollment anticipated for the combined Kaibeto schools will approximate 930 students.

Clinics (generally once weekly during school terms), formerly held in the chapter house are currently provided in the school clinic room. In 1964 the attendance averaged 48 a clinic. An estimated 50 visits per clinic day is anticipated for the beneficiary population. In addition, needed school health services and special preventive clinics will be provided.

The program will consist of daily school health nursing services, at least weekly medical clinics for the two schools, the local population and that of surrounding communities, and full-time dental coverage. Special preventive clinics and group health conferences will be held as needed.

In lieu of constructing a school clinic and a separate field health station, it is considered more economical and of greater benefit to the beneficiaries involved to combine and conduct these health services in one facility. The project now proposed is a modified field health station that will provide space for the medical program to be conducted at this location.

Except for the school nursing and dental staffs, personnel from the Tuba City Hospital will serve the station.

It is requested that funds in the amount of $84,000 be provided to construct this health station in coordination with the school construction project. Total project cost, including planning and equipment, is estimated to be $97,000.

Lower Greasewood, Ariz $84,000

PROJECT COST ESTIMATE

Planning funds appropriated 1965	$7,000
Construction funds requested 1966	84,000
Equipment funds to be requested 1967 under Indian Health Activities Appropriation	6,000
Total estimated project cost	97,000

Lower Greasewood is a Navajo Indian population center and also the location of a new Bureau of Indian Affairs 660-pupil boarding school. It is located 59 miles southwest of Fort Defiance, Ariz., on the Navajo Reservation. In the near future it is expected that an improved east-west road will join Klagetoh, Greasewood, Indian Wells, Dilkon, and Leupp and open up vast areas and population now served by poor, often impassable roads.

Weekly clinics are held in a small mission that is most inadequate. In fiscal year 1964 the weekly clinic attendance averaged nearly 50 visits.

The new health station will provide field health services for 1,700 Indians in and near the location and 660 students at the boarding school.

General medical and preventive health clinics will be held weekly. Full-time nursing and dental services will be provided for students. Special preventive health clinics and group health conferences will be held as needed. Ninety visits per clinic day are anticipated. Except for nursing and dental services for students, personnel from Fort Defiance Hospital will provide the health services.

In lieu of constructing a school clinic and a separate field health station, it is considered more economical and of greater benefit to the beneficiaries involved to combine and conduct these health services in one facility. The project now proposed is a modified field health station that will provide space for the medical program to be conducted at this location.

It is requested that funds in the amount of $84,000 be provided to construct this health station. Total project cost, including planning and equipment, is estimated to be $97,000.

1965 program	$25,000

In 1965, funds were appropriated to initiate projects on the basis that only those funds required during the budget year (estimated obligations) be made available.

Funds are requested in 1966 to complete construction of those projects authorized and initiated in 1965 which were not totally funded as indicated:

Laguna, N. Mex., construction of new health center	$16,000
Whitehorse, S. Dak., construction of new health station	3,000
Cherry Creek, S. Dak., construction of new health station	3,000
Wolf Point, Mont., construction of new health station	3,000
Total 1965 program	25,000
Total 1966 request for clinics	587,000
Total 1966 request for hospitals and clinics	2,140,000
Less application of prior years' funds	15,800
1966 appropriation request	2,124,200

Personnel quarters, 1966 request, $607,600

Because of the remoteness from established communities and the isolation of many of the locations where Indian beneficiaries live, it is necessary for the Indian health program to provide housing facilities in order to adequately recruit and retain qualified personnel of practically every category.

Experience indicates that employees with families are better able to adjust to the living environment pervading the Indian health program and are more likely to remain on the job than are single individuals. Many eligible employees have families for whom there is no "private" housing available at the location of the health facility on the reservation. Often there are no means of transportation from a residence off the reservation.

At the time of the transfer of the Indian health program from Bureau of Indian Affairs to the Public Health Service in 1955, a great many of the housing units made available to the Indian health staff were substandard, often mere shacks, that did not meet minimum Government standards of adequacy required for commissioned officers pursuant to law.

In 1956, to meet the critical emergency needs of the expanded hospital and field health staffs, approximately 350 used, prefabricated, temporary units were acquired by the Division (280 still in use). Over 600 additional permanent units have been made available since the transfer.

In addition to the acquisition of the temporary and permanent units, substantial funds have been applied by Division of Indian Health for necessary repairs and modernization of the quarters inherited from BIA. Some of this was imposed because many of the BIA houses did not meet minimum Government standards or standards of adequacy required for commissioned officers pursuant to law.

Further improvements in DIH staff housing have resulted from utility improvements (i.e., improved sewage disposal systems, increased electrical service, etc.). In several instances, it has been possible to provide nurses with apartments rather than rooms in "nurses homes." This has been largely accomplished by conversion of nonhousekeeping single room buildings to apartments.

Currently, approximately 1,400 housekeeping units are available for all locations—500 or approximately one-third of these units are inadequate (this includes 280 temporary units still in use) and must be replaced. In addition to the 500 units that must be replaced, approximately 400 units will be required for the new staff the Division has proposed to add by 1970. Requirements for housing, both replacement and new, were based on a detailed survey, facility by facility, service unit by service unit, conducted by the Division of Indian Health. Approximately 800 nonhousekeeping units are available. No deficiency exists in this category.

Generally, the housing inherited from the Bureau of Indian Affairs has been altered and maintained to reasonable standards. However, some of these units have not been improved because of structural weakness. Temporary housing acquired immediately after the transfer of the program to the Public Health Service is generally in poor repair. The housing constructed by DIH since the transfer from BIA 1955 is adequate and well maintained.

Approximately 900 Government staff quarters must be provided if the Division is to be able to recruit and retain the staff required to carry out the Indian health program. This conclusion is based on (*a*) the inaccessibility of nonavailability of rental and/or purchasable housing units; (*b*) the high cost of private construction and lack of private financing to construct such private housing; (*c*) the current high turnover of staff members in remote locations; (*d*) the inability of the young physician and other professional personnel entering the Service to purchase a home, even where financing is available; and (*e*) the nonavailability of public utilities to service homes. Funds are requested as follows:

Construction of seven units at Pine Ridge, S. Dak.; Crow, Mont., $119,000

An amount of $119,000 is requested in 1966 for the procurement of seven units of relocatable quarters to help alleviate the critical shortage at two locations. Three units will be situated at Pine Ridge, S. Dak., $51,000 and four units at Crow, Mont., $68,000. These relocatable quarters are prefabricated, woodframe, three-bedroom housekeeping units with 1½ baths. Each unit grosses 1,170 square feet and can be folded for shipment.

To reinstate funds reprogramed for emergency repair of Anchorage Hospital, $390,000

In the spring of 1964 an earthquake inflicted severe damage to the Alaska native hospital at Anchorage. To meet an emergency need, $390,000 of $541,000 appropriated for 12 units of quarters at Bethel were reprogramed for work conducted on the hospital. A request is made for reinstatement of the $390,000 to permit the erection of the 12 quarters at Bethel.

To complete 1965 program, $251,000

In 1965, funds were appropriated to initiate projects on the basis that only those funds required during the budget year (estimated obligations) be made available.

Funds are requested in 1966 to complete construction of those projects authorized or initiated in 1965 which were not totally funded as indicated.

Fort Yates, N. Dak	$13,000
Pine Ridge, S. Dak	13,000
Chinle, Ariz	15,000
Fort Defiance, Ariz	45,000
Kotzebue, Alaska	18,000
Bethel, Alaska (to allow full funding)	124,000
Tanana, Alaska	23,000
To complete 1965 program	251,000

To complete 1965 program, $251,000—Continued

SUMMARY OF 1966 QUARTERS REQUEST

1966 program:	
3 units at Pine Ridge, S. Dak., Project No. 311–AB–7	$51,000
4 units at Crow, Mont., Project No. 383–BI–2	68,000
Subtotal, 1966 program	[1] 119,000
Reinstatement of Bethel funds	390,000
To complete 1965 program	251,000
Total request for 1966	760,000
Less application of prior years' funds	152,400
1966 appropriation request	607,600

[1] Includes site adaptation, technical services, contingency, and transportation from plant to building site.

Alterations, 1966 request, $156,200

An orderly program of altering, modernizing, or adding to Indian health facilities is essential to provide productive plants that are safe for patient and staff as well. To this end, the 1966 request contains projects at seven sites that upon completion, will add to the safety and comfort of patient and staff as well and will permit optimum utilization of the facility.

ALBUQUERQUE AREA

Albuquerque Sanatorium, Albuquerque, N. Mex $20,000

RENOVATION OF ELEVATOR

This is the sole elevator in the hospital and has been in service 29 years. Parts are no longer manufactured and must be custom made. Doors are manual cage type and when left ajar, the elevator is inoperative. Also breakdowns of the elevator seriously impair hospital functioning. The project would include installation of new hoisting machinery, automatic door operation with counterweight adjustment, and new limit, low speed, floor leveling switches.

Fort Defiance Hospital, Fort Defiance, Ariz $24,000

CORRECT FIRE HAZARDS

This project involves the correction of fire hazards in the hospital and the nurses' home as disclosed by the recent Accident and Fire Prevention Survey, Report No. 6424–2 dated December 1963. The project includes the installation of a sprinkler system in the pharmacy; installation of heat detection systems in the nurses' home and annex; replacement of low density combustible tile in outpatient clinic with class A title; provision of fire exit facilities in the nurses' home; correction of potential electrical fire hazards throughout all buildings; and replacement of panel and dutch doors in patients' rooms with solid doors.

Crownpoint Hospital, Crownpoint, N. Mex $21,000

CORRECT FIRE HAZARDS

This project involves the correction of fire hazards in the hospital and the nurses' home as disclosed by the recent Accident and Fire Prevention Survey, Report No. 6424–3 dated December 1963. The project includes the installation of an automatic fire sprinkler system throughout the hospital building and provision of fire exits.

Total, Albuquerque area $65,000

BILLINGS AREA

Hays Health Station, Hays, Mont $9,000

ADDITION TO CLINIC BUILDING

The clinic is not functionally arranged and present space is inadequate for the medical services and patient care provided. Clinics are held three times weekly. The number of patients being cared for is rapidly increasing. Currently, approximately 8,000 patients are cared for annually. It is proposed to construct approximately 414 square feet of additional floor space to the existing health station to modify the overcrowded condition and permit a more efficient handling of patients and records.

Total, Billings area $9,000

OKLAHOMA AREA

Clinton Hospital, Clinton, Okla $18,000

MAJOR IMPROVEMENTS TO WATER AND SEWAGE SYSTEMS

The existing sewage system is overloaded. The septic tank is too small and does not permit proper ingestion. The laterals are 25 years old and partially inoperative. The system will not permit expansion or the use of modern kitchen facilities such as garbage disposals. The project will include installing a new and larger septic tank and renovating the lateral system.

Pawnee Hospital, Pawnee, Okla $10,000

REMODEL DISHWASHING AREA

The dishwashing room is poorly arranged and does not meet the latest sanitation standards. Project would include alterations to the dishwashing area, a drainage system, and rearrangement of space to permit a more flexible operation.

CONSTRUCT CANWASHING AREA

At present the garbage can washer is situated out of doors and the equipment and operator are constantly exposed to the weather. The project would involve construction of a small structure to house the can washer and garbage rack adjacent to building No. 2.

CONSTRUCT AMBULANCE CANOPY

Currently, patients have no protection from the inclement weather upon transfer from an ambulance to the hospital. It is proposed to construct a canopy over the north entrance door on building No. 2, complete with lighted "Ambulance" sign, to provide shelter for stretcher patients.

Total, Oklahoma area $28,000

ALASKA AREA

Kotzebue Hospital, Kotzebue, Alaska $15,000

SEWAGE TREATMENT PLANT STUDY

All wastes from the Alaska Native Hospital and BIA School in Kotzebue are discharged into Kotzebue Sound at a point 550 feet from the beach and at a depth of 80 feet below the water surface. The Natural Resources and Power Subcommittee of the Committee on Government Operations report directed attention to the lack of primary treatment of waste material being discharged. It is proposed to conduct a thorough engineering investigation to determine if the present practice is contrary to the public health interest and safety, and, if so, the remedial action to be taken to correct. If a sewage treatment plant is required it is estimated that the cost will approximate $500,000.

Total, Alaska area $15,000

1965 program 94,000

In 1965, funds were appropriated to initiate projects on the basis that only those funds required during the budget year (estimated obligations) be made available.

Funds are requested in 1966 to finish planning or to complete construction of these projects authorized and initiated in 1965 which were not totally funded, as indicated:

Project	*Amount required to complete*
Wagner, S. Dak.:	
1. Project construction funds alterations	$6,200
2. Project construction funds electrical system	800
Winnebago, Nebr.; storage	3,000
Sisseton, S. Dak.; boiler	1,000
Pinon, Ariz.; expansion	1,000
Gallup, N. Mex.; additions and alterations	15,000
Fort Defiance, Ariz.; air conditioning	3,000
Shiprock, N. Mex.; air conditioning	15,000
Brigham City, Utah; alter building No. 61	4,000
Chemawa, Oreg.; garage	1,000
Tanana, Alaska; sewage and water treatment plants	42,000
Kotzebue, Alaska; fire hydrants	2,000
To complete 1965 program	94,000
Total 1966 request for alterations	211,000
Less application of prior years funds	54,800
1966 appropriation request	156,200

Construction of Indian sanitation facilities, 1966 request, $6,200,000

The request for 1966 includes (1) $3,800,000 for construction of 35 projects to correct existing gross sanitation deficiences and for investigations, emergency works, supplies and equipment; (2) $2,200,000 for construction of sanitation facilities in Indian communities where they are needed to complement Federal housing programs conducted by the Public Housing Administration and the Bureau of Indian Affairs in accordance with mutual understandings reached by the three agencies; and (3) $200,000 to complete projects authorized in fiscal year 1965 which were not fully funded.

Sanitation facilities construction projects $3,800,000

This cooperative tribal-Public Health Service activity, designed to correct gross deficiencies in Indian and Alaska native sanitation facilities, is authorized by Public Law 86-121. Despite the progress made during the past 5 years, gross environmental deficiencies such as lack of safe available water supplies and waste disposal facilities continue to exist. These are in large measure responsible for the high incidence of preventable diseases that prevail among Indians. Provision of basic sanitation facilities for Indian communities and homes, both existing homes and those constructed under Federal housing programs for Indians by the Public Housing Administration and the Bureau of Indian Affairs, is essential in the prevention of diseases and is a basic element in the improvement of health services to Indians and in the fight against poverty.

With the completion of all authorized projects through fiscal year 1965, including those funded under the public works acceleration program, basic sanitation facilities will have been provided for more than 24,000 Indian and Alaska native families in 349 communities, representing about 29 percent of the known need for such facilities. This year's request will enable another 5 percent of the needs to be met.

HEALTH PROBLEMS

Specific examples of health problems directly related to lack of sanitation facilities follow:

1. Gastroenteritis ranks first among reported notifiable diseases on Indian reservations; incidence rates for amebic and bacillary dysentary are more than 50 times higher than the rate in the general population.

2. The Indian infant death rate is two-thirds higher than that of the general population, and for infants who have returned to their home environment after hospital birth and particularly for infants 1 month through 11 months of age, the death rate is about four times (for Alaska natives, about six times) that of comparable age groups in the general population, a condition in large part associated with the lack of sanitation facilities in the Indian home and extremely crowded living conditions.

3. Twenty percent of all reported Indian deaths in a year are infant deaths (under 1 year of age) compared with 6 percent for this age group in the general population.

4. Approximately 35 percent of the patients discharged from hospitals were treated for infectious diseases most of which are associated with insanitary conditions and the overcrowded home environment.

ENVIRONMENTAL CONDITIONS

Contributing to these health problems is the widespread scarcity of water among Indians and Alaska natives for even elemental household purposes. Thousands of Indians on many reservations haul water in a primitive manner for distances of a mile or more. In such instances, use of water for domestic purposes is as low as 1 to 3 gallons per capita per day as compared to five times this amount for the poorest rural families in the non-Indian population. A charge of $1 to $3 per barrel for water delivered to the Indian home is not uncommon. The source of domestic water supply for a majority of homes is unsafe. Contaminated streams, irrigation ditches, stock ponds, and unprotected wells and springs are often the only available supply. The excessive amount of time which Indians and Alaska natives must thus expend combating the rigors of their environment is another major contributing factor to the continuing impoverished conditions under which they live.

The lack of adequate facilities for the disposal of human and other household wastes, both liquid and solid, also contributes to the health problem of the Indians and Alaska natives. The absence of these facilities result in (1) spread of microorganisms responsible for diarrheas, and dysenteries; (2) insect and rodent infestations both in Indian homes and communities; (3) contamination of foods and domestic water supplies; and (4) general nuisance conditions.

INDIAN PARTICIPATION AND TRAINING

Public Law 86–121 enables the Public Health Service to help alleviate the substandard environmental conditions that have been described. This law authorizes construction of domestic water supplies, waste disposal facilities, and other sanitation facilities for Indian homes, communities, and lands. The Public Health Service administers the program in consultation with Indian tribes, Alaska native groups, and State and local health agencies. Participation by the Indians in project execution is stressed and tribes are assisted in assuming responsibility for continued operation and maintenance of completed community sanitation facilities. Parallel education and training activites are conducted to assure utilization, protection, and maintenance of household sanitation facilities. Projects for Indian beneficiaries include one or more of the following features: water—source deveolpment, treatment, storage facility, distribution system; waste (liquid and solid)—collection system, sewage treatment, disposal facility; household appurtenances—sanitary pit privy, or flush toilet, kitchen sink, connecting plumbing; drainage—facilities for control of insects, systems to permit subsurface waste disposal.

It should be noted that the results of these efforts have produced an increasing awareness by the Indian people of the advantages of adequate sanitation facilities. This has been demonstrated by the many requests from the Indians for assistance under this program and by the substantial contributions of labor, money, and materials made by the Indians which total about one-third of the overall construction effort. Indian governing bodies have shown a willingness to adopt the necessary measures which are required for continued operation and maintenance of completed facilities. These include appointment of responsible maintenance individuals, establishment of water and sewer charges, and adoption of sanitary regulations. Each of these actions embraces new concepts in

the Indian methods of government. Despite the steady progress that has been made, the backlog of unbudgeted identifiable projects continues to mount.

CONSTRUCTION PROGRESS

In the 5 years this program has been underway 304 sanitation (208 construction and 96 emergency and study) projects have been authorized with funds appropriated through 1964 for construction of Indian sanitation facilities. As of November 30, 1964, 239 of these projects have been completed or essentially completed, 61 are in progress, 3 are in the final stage of negotiation of agreement with the tribe, and 1 project was dropped upon inability of the Indians to participate and funds from this project were reprogramed for sanitation facilities to permit additional public housing unit "starts" to be made in 1965. In 1963 and 1964, an additional 42 projects were initiated with $4,995,000 made available under the public works acceleration program; of these, 22 are essentially completed and the remainder are underway.

In 1965, $4,050,000, including $250,000 for flood damage in Montana, was appropriated for 40 sanitation facilities construction projects. This will enable the provision of basic sanitation facilities for more than 3,900 Indian and Alaska native families in 67 different geographical locations.

The 35 projects planned for 1966 are urgently needed on 24 Indian reservations and in 9 communities in Oklahoma and Alaska. They will meet needs in areas where (1) essential sanitation facilities are lacking or in need of major rehabilitation; (2) rates of preventable diseases attributable to gross environmental sanitation deficiencies are high; (3) work is feasible and most nearly ready to be undertaken from an engineering and economic standpoint; (4) ability and willingness of Indians to assume responsibility for maintenance and operation have been indicated; and (5) willingness of Indians to contribute to and participate in the work has been shown. The request also provides for investigations and planning funds for urgently needed construction projects on which additional technical information is necessary before a solution can be recommended, for correction of emergency problems related to Indian sanitation facilities such as occur from severe drought conditions, floods, failure of well casings and pumping equipment and for other unforeseen conditions which may require provision of materials, supplies and equipment for completing the construction or repair of sanitary facilities.

Assistance to Federal housing programs---------- $2,200,000

The Public Housing Administration has included Indian communities in its program of public housing and has executed annual contribution contracts with local Indian housing authorities for the construction of conventional (low rent) and mutual help housing units contingent upon availability of water supply and waste disposal facilities at the site. In 1965, by mutual agreement with PHS, a limited number of housing unit "starts" will be made at locations where sanitation facilities are available or can be made available during the year. The request for sanitation facilities to assist this housing program in 1966 includes facilities to serve (1) Indian communities where housing units now under PHA contract remain to be constructed, (2) communities having Indian housing units for which PHA has received applications; and (3) a limited number of housing units for local Indian housing authorities from the anticipated requests for these units expected during the next 12 months.

The Bureau of Indian Affairs housing improvement program is being coordinated with the Public Health Service Indian sanitation facility construction projects to the maximum extent in the field. Some improved housing units will require sanitation facilities in areas where projects have not been undertaken. It is estimated that such facilities will not exceed $150,000.

Amount to complete 1965 program---------- $200,000

In 1965 funds were appropriated to initiate projects on the basis that only those funds required during the budget year (estimated obligations) be made available. Funds are requested in 1966 to complete those projects authorized in 1965.

There follows a list of projects proposed for fiscal year 1966:

Sanitation facilities projects

Reservation	Community	State	Project description	Total cost estimate
ABERDEEN AREA				
Bad River	Odanah	Wisconsin	Community water and sewerage	$196,000
Mille Lacs	Mille Lacs	Minnesota	Individual water and waste	140,000
Fort Totten	Crow Hill District	North Dakota	do	92,000
Sisseton	Enemy Swim and Long Hollow	South Dakota	do	98,000
ALBUQUERQUE AREA				
Laguna	Paguate	New Mexico	Community sewerage	73,000
San Ildefonso	San Ildefonso	do	Community water and sewerage	150,000
Cochiti	Cochiti	do	do	157,000
Pojoaque	Pojoaque	do	do	22,000
WINDOW ROCK FIELD				
Navajo	Scattered locations	Arizona-New Mexico	Shallow well and spring development (250 projects).	200,000
Do	do	do	Water distribution for random homes	150,000
ANCHORAGE AREA				
	Kotzebue phase I	Alaska	Develop and construct community water source and water transmission line.	400,000
	Grayling	do	Communal water and individual waste	40,000
	St. Mary's	do	do	50,000
BILLINGS AREA				
Crow	Pryor	Montana	Community and individual water and individual waste.	58,000
Northern Cheyenne	Lame Deer phase I	do	do	250,000
Blackfeet	East Glacier	do	Individual water and waste	85,000
Fort Peck	Wolf Point phase II	do	Community sewerage and individual waste	100,000
OKLAHOMA CITY AREA				
Cherokee	Cherokee	North Carolina	Communal water and individual waste	100,000
McCurtain County	Idabel district	Oklahoma	Individual water and waste	65,000
Cherokee County	West central district	do	do	95,000
Delaware County	Leach district	do	do	60,000
McIntosh County	Hanna district	do	do	80,000
Adair County	Piney-Grove district	do	do	70,000
Blaine County	Southern district	do	do	60,000

Sanitation facilities projects—Continued

Reservation	Community	State	Project description	Total cost estimate
PHOENIX AREA				
Hoopa Extension	Weitchpec-Johnson	California	Community and individual water and waste	$102,000
Fallon	Fallon	Nevada	Community water and individual waste	120,000
Papago	San Xavier	Arizona	Community and individual water and individual waste.	50,000
Do	4 villages (Little Tucson, White Horse, San Miguel, Vainom Kug).	do	Community and communal water and individual waste.	58,000
Hopi	Bacobi	do	Community water and sewerage	110,000
Pima	Stotonic (Upper San Tan, phase I)	do	do	100,000
PORTLAND				
Kalispel	Entire reservation	Washington	Individual water and waste	$37,000
Chehalis	do	do	do	31,000
Colville	Coulee Dam-Nespelem	do	do	85,000
Warm Springs	West Hills	Oregon	Community water and sewerage	130,000
Burns Community	Old-new village	do	Community water and individual waste	45,000
All areas—Investigations, emergency works, supplies and equipment				141,000
Subtotal sanitation facilities construction projects				3,800,000
ASSISTANCE TO FEDERAL HOUSING PROGRAMS				
All areas—Water supply and waste disposal facilities for Indian communities when Federal housing projects are approved: (1) For communities having public housing projects under Public Housing Administration annual contribution contracts with local Indian housing authorities; to permit construction and occupancy of 1,196 housing units whose construction was deferred in 1965. (2) For communities for which Public Housing Administration has applications on hand for action from local Indian housing authorities. (3) To permit some new public housing unit construction "starts" to be made in 1966 to meet most urgent needs of anticipated requests from newly created and existing local Indian housing authorities. (4) To complement the Bureau of Indian Affairs Indian housing improvement program. Subtotal, assistance to Federal housing programs for Indians				2,200,000
Total 1966 program				6,000,000
Amount required to complete 1965 program				200,000
Total 1966 request				6,200,000

Itemization of estimate

	Actual, 1964	Estimate, 1965	Estimate, 1966	Increase (+) or decrease (−)
Program and financing:				
Total obligations	$9,568,917	$12,131,509	$8,953,400	−$3,178,109
Unobligated balance brought forward	−7,639,426	−4,170,509	−374,000	−3,796,509
Unobligated balance carried forward	4,170,509	374,000	508,600	+134,600
Appropriation	6,100,000	8,335,000	9,088,000	+753,000
Obligations by objects:				
11 Personnel compensation	644,560	826,000	757,000	−69,000
12 Personnel benefits	28,156	37,000	37,000	
21 Travel and transportation of persons	47,301	59,000	36,800	−22,200
22 Transportation of things	82,736	107,000	91,000	−16,000
23 Rent, communications, and utilities	6,773	8,000	5,200	−2,800
24 Printing and reproduction	15,882	20,000	9,800	−10,200
25 Other services	2,942,428	3,039,000	3,278,000	+239,000
26 Supplies and materials	82,112	144,000	78,000	−66,000
31 Equipment	148,064	358,000	172,000	−186,000
32 Lands and structures	5,570,905	7,533,509	4,488,600	−3,044,909
Total obligations	9,568,917	12,131,509	8,953,400	−3,178,109

Analysis of continuing projects

	Planning or feasibility funds for projects approved prior to 1966		1966 request			
	Amount	Year appropriated	Funds for previously approved projects	Planning or feasibility funds for new projects	Funds for new construction projects	Total
Hospitals and clinics:						
Phoenix Medical Center [1]	$350,000	1962				
Belcourt Hospital	85,000	1965	$1,453,000			$1,453,000
Mescalero Hospital [1]	[2] 45,000	(2)				
Fort Wingate Health Center	21,000	1965	394,000			394,000
Kaibeto Health Station	7,000	1965	84,000			84,000
Lower Greasewood Health Station	7,000	1965	84,000			84,000
To complete 1965 program			125,000			125,000
Total, hospitals and clinics						2,140,000
Personnel quarters:						
7 units of relocatable quarters					$119,000	119,000
To complete 1965 program			641,000			641,000
Total, personnel quarters						760,000
Alterations:						
Albuquerque Sanatorium					20,000	20,000
Fort Defiance Hospital					24,000	24,000
Crownpoint Hospital					21,000	21,000
Sells Hospital [1]	11,000	1965				
Tuba City Hospital: [1]						
Feasibility	20,000	1964				
Planning	120,000	1965				
Hays Health Station					9,000	9,000
Clinton Hospital					18,000	18,000
Pawnee Hospital					10,000	10,000
Talihina Hospital [1]	13,000	1963				
Kotzebue				15,000		15,000
To complete 1965 program			94,000			94,000
Total, alterations						211,000
Sanitation facilities:						
Construction of 35 projects					6,000,000	6,000,000
To complete 1965 program			200,000			200,000
Total, sanitation						6,200,000
Total, 1966 program						9,311,000
Application of prior years funds						−223,000
1966 appropriation request						9,088,000

[1] Construction funds to be requested after 1966.
[2] Balance of Mescalero Health Center planning funds and savings from other projects.

PHOENIX, ARIZ., MEDICAL CENTER

Chairman HAYDEN. In fiscal year 1962, which is almost 4 years ago, the Division of Indian Health was provided $350,000 to plan a medical center in Phoenix, Ariz. Last year, when I questioned you about this, you indicated that the architectural engineering feasibility study had been initiated and you expected that the planning phase of the hospital could be completed during the year, with construction to start in fiscal year 1966. You are requesting funds to construct a hospital at Belcourt, N. Dak., for which planning money was made available last year, but I find nothing in your program to indicate that work will be done on the Phoenix Medical Center. Just what is the trouble?

Dr. WAGNER. Mr. Chairman, at the time the final decisions were necessary on the formulation of this budget, planning had not proceeded to the point where we had the firm data on the cost or the satisfactory plan for the utilization of the existing facilities along with the new construction. For this reason, we were unable to develop an estimate that could be supported by a specific construction plan in time to get it into the budget this year.

Chairman HAYDEN. When will you have such a plan?

Dr. WAGNER. We have now received a satisfactory plan, sir—as of February 1, 1965.

Chairman HAYDEN. Have you developed the cost estimate?

Dr. WAGNER. Yes, sir, we have prepared an estimate, and this is now being reviewed by the Department.

Chairman HAYDEN. What is the estimated cost?

Dr. WAGNER. Our construction estimate in the Division, sir, is for $5,450,000, but this may be refined or it may be revised in the review processes.

Chairman HAYDEN. If an amount for this hospital were included in the 1966 appropriation would you be able to award a contract during the fiscal year?

Dr. WAGNER. Yes, sir; we believe we can.

HEALTH STATION AT KAIBETO AND LOWER GREASEWOOD, ARIZ.

Chairman HAYDEN. You have requested funds for a health station at Kaibeto and Lower Greasewood, both on the Navajo Reservation in Arizona. Will these health stations be separate facilities or will they be constructed as a part of the Bureau of Indian Affairs schools now being built at the two places?

Dr. WAGNER. These will be separate facilities, sir, because they will serve not only the schools but also the population in that area. It is considered best to keep them separate because you have other people than the students using such a health facility. It leads to difficulties in school administration to combine them. But they will be right adjacent to the schools.

SANITATION FACILITIES

Chairman HAYDEN. A tabulation of 35 Indian sanitation facility projects, for which you request $3,800,000, has been placed in the record. Would you please prepare, for inclusion in the record, a tabulation in similar form on the sanitation facilities to be placed in Indian communities where they are needed to complement Federal housing programs? You requested $2,200,000 for this purpose.

Dr. WAGNER. We will be very happy to submit it for the record.

(The tabulation referred to follows:)

ASSISTANCE TO FEDERAL HOUSING PROGRAMS

Provision of water supply and waste-disposal facilities is generally made to within 5 feet of the housing site. Specific project cost estimates are developed after definitive site selections have been confirmed by the local Indian housing authority, the Public Housing Administration, and the Public Health Service.

The total funds requested for the groups of projects listed below are based upon average experience within the program over the past 5 years and will permit approximately 2,500 new housing units to be provided for Indians under current Federal programs as follows:

Group (1)—Sanitation Facilities for Communities Having Public Housing Projects Under Public Housing Administration Annual Contributions Contracts for Which Construction Was Deferred in 1965

Reservation	Community	State	Project description	Units of housing served		
				Conventional low rent	Mutual help	Total
Metlakatla	Metlakatla	Alaska	Community water and sewerage		5	5
Colorado River	"Scattered"	Arizona	Individual water and waste		60	60
Fort Apache	Seven Mile-Whiteriver-Diamond Creek-Canyon Day-East Fork-Cedar Creek-Fort Apache Junction.	do	Community water and individual waste		130	130
Gila River	9 communities	do	do		55	55
Salt River	"Scattered"	do	do		20	20
San Carlos	do	do	Individual water and waste		100	100
Southern Utes	Ignacio	Colorado	Community water and individual waste		10	10
Coeur d'Alene	Plummer-Worley	Idaho	do		20	20
Nez Perce	Lapwai	do	Community and individual water and waste		40	40
Blackfeet	Browning-Babbs-St. Mary's-Starr School.	Montana	do		40	40
Flathead	St. Ignatius-Arlee-Elmo-Dayton	do	Community and individual water and individual waste.		30	30
Fort Belknap	"Scattered"	do	Individual water and waste		60	60
Fort Peck	do	do	do		40	40
Northern Cheyenne	Busby and Lame Deer	do	Community water and sewerage		40	40
Rocky Boys	"Scattered"	do	Individual water and waste		15	15
Duck Valley	Miller Creek	Nevada	Community water and individual waste		15	15
Jicarilla	Dulce	New Mexico	Community water and sewerage		65	65
Laguna	Messita-Seama	do	do	30		30
Navajo	Thoreau	do	do	20		20
Nambe	Nambe	do	do		30	30
Tesuque	Tesuque	do	do		15	15
Zuni	Zuni	do	do		25	25
Fort Berthold	White Shield-Twin Buttes-Mandaree	North Dakota	Individual water and waste	60		60
Turtle Mountain	Belcourt	do	Community water and sewerage	60		60
Bad River	Odanah	Wisconsin	do	14	11	25
Oneida	Hobart Township	do	Individual water and waste	26		26
	"Scattered"		do		40	40
Uintah and Ouray	Indian Bench-Fort Duchene-Randlett-Ouray.	Utah	Community and individual water and individual waste.		20	20
Swinomish	Swinomish	Washington	Individual water and waste		10	10
Yakima	White Swan	do	do		26	60
Lac du Flambeau	Lac du Flambeau	do	Community water and sewerage		20	20
Wind River	"Scattered"	Wyoming	Individual water and waste		10	10
Total				210	986	1,196

Estimated cost, $1,200,000.

Group (2)—Sanitation facilities for public housing units in Indian communities for which Public Housing Administration has applications on hand for action from local Indian housing authorities

Reservation	State	Units of housing served		
		Conventional low rent	Mutual help	Total
Cocopah	Arizona		10	10
Seminoles	Florida	80		80
Saginaw (Chippewa)	Michigan	20		20
Fond du Lac	Minnesota	35	20	55
Leech Lake	do	60	100	160
White Earth	do	90	75	165
Fort Peck	Montana	50		50
Carson Colony	Nevada		20	20
Fort Berthold	North Dakota		50	50
Fort Totten (Devils Lake)	do	60		60
Turtle Mountain	do	40		40
Acoma	New Mexico		50	50
Laguna	do	100		100
Cherokee (Qualla)	North Carolina	14		14
Pine Ridge	South Dakota	50		50
Red Cliff	Wisconsin		10	10
Stockbridge Munsee	do	20		20
Total		619	335	954

Estimated cost, $800,000.

Group (3)—Sanitation facilities to serve limited number of new public housing construction "starts" in 1966 to meet most urgent needs of anticipated requests from "newly created" or "existing" local Indian housing authorities; estimated cost, $100,000.

Group (4)—Sanitation facilities to complement Bureau of Indian Affairs Indian housing improvement program in 1966; estimated cost, $100,000.

Total for assistance to Federal housing program, estimated cost, $2,200,000.

Unfunded 1965 Projects

Chairman Hayden. Also, submit for the record a similar statement of projects which were authorized in the fiscal year 1965 which have not been fully funded.

Dr. Wagner. Very good, sir.

(The statement referred to follows:)

Projects Authorized in 1965 Not Fully Funded

Hospitals and clinics:	
Lawton, Okla	$100,000
Fort Wingate, N. Mex	4,000
Laguna, N. Mex	16,000
Whitehorse, S. Dak	3,000
Cherry Creek, S. Dak	3,000
Wolf Point, Mont	3,000
Total, hospitals and clinics	129,000
Personnel quarters:	
Fort Yates, N. Dak	13,000
Pine Ridge, S. Dak	13,000
Chinle, Ariz	15,000
Fort Defiance, Ariz	45,000
Kotzebue, Alaska	18,000
Bethel, Alaska	124,000
Tanana, Alaska	23,000
Amount to complete 1965 program	251,000
To reinstate reprogramed funds: Bethel, Alaska (Anchorage earthquake repairs)	390,000
Total, personnel quarters	641,000

PROJECTS AUTHORIZED IN 1965 NOT FULLY FUNDED—Continued

Alterations:	
Wagner, S. Dak	$7,000
Winnebago, Nebr	3,000
Sisseton, S. Dak	1,000
Pinon, Ariz	1,000
Gallup. N. Mex	15,000
Fort Defiance, Ariz	3,000
Shiprock, N. Mex	15,000
Brigham City, Utah	4,000
Chemawa, Oreg	1,000
Tanana, Alaska	42,000
Kotzebue, Alaska	2,000
Total, alterations	94,000
Sanitation projects	200,000
Total, all activities	1,064,000

CONSTRUCTION OF HOSPITAL AT CROWNPOINT, N. MEX.

Chairman HAYDEN. I will include at this place in the record a resolution adopted by a district council of the Navajo Tribe urging construction of a hospital at Crownpoint.

(The resolution referred to follows:)

The Navajo Tribe, District 15–19 Council

RESOLUTION

Subject: Requesting construction of a new Public Health Service Indian hospital at Crownpoint, N. Mex.

Whereas:

1. The district 15–19 council adopted a resolution on July 18, 1964, requesting the Navajo Tribal Council to petition the U.S. Public Health Service to expand the Indian hospital at Crownpoint, N. Mex.; and

2. Information developed by the committee appointed by the district council to follow up on this resolution indicates that the urgency of the need for a larger, improved hospital facility may not have been clearly enough stated in the July 18, 1964, resolution since no hospital construction is anticipated at Crownpoint until 4 or 5 years from now; and

3. The district council hospital committee has obtained the following further factual information to support this request:

Crownpoint Public Health Service Indian hospital (56-bed hospital) admissions, outpatient visits, field clinic visits, and dental visits (latest official figures available)

	Fiscal year 1965	Fiscal year 1964	Increase (percent)	1st 6 months fiscal year 1964	1st 6 months fiscal year 1965	Increase (percent)
Admissions	1,196	1,605	34	752	773	3
Outpatient visits	11,631	15,671	35	7,050	8,691	23
Field clinic visits	4,360	4,517	4	1,544	1,844	19
Dental visits	2,210	3,981	80	1,697	2,062	21

4. The present Crownpoint Hospital, constructed in 1939, has been found, on a safety and fire-hazard inspection in 1964, to be structurally inadequate and unsafe from a fire-control standpoint—stone-veneer-frame construction with high wood ceilings and wood doors; and

5. The present facility is seriously inadequate from a service standpoint—current occupancy rate 80 percent with beds and bassinets frequently having to be placed in the corridors, no waiting room, only one private examination room, supplemented by two curtained examination rooms in the clinic; and

6. The Crownpoint Hospital serves a Navajo population of 13,000 living over a 3,500-square-mile area with many patients traveling as far as 80 miles to reach the hospital; and

7. Despite all these inadequacies—crowed conditions in the hospital, long waits for clinic examinations and treatment, and inadequate privacy in clinic examinations—the Navajo people appreciate the good services and care they get at the Crownpoint Hospital and continue to come to the hospital in increasing numbers:

Now, therefore, be it resolved That—

1. The district 15–19 council urges further consideration by the U.S. Public Health Service for early construction of a 100-bed hospital with appproppriate supporting facilities at Crownpoint, N.M.; and

2. Requests the Navajo Tribal Health Committee to review this situation with appropriate officials of the U.S. Public Health Service; and

3. Directs the district council hospital committee (Billy Becenti and Mabel P. Hesuse) to follow up on this matter and report on the same at the next meeting of the district 15–19 council.

CERTIFICATION

I hereby certifiy that the above resolution was moved by Jake Chee, seconded by Martin Begay, and adopted by a vote of 37 for, none opposed, at a regularly called meeting of the district 15–19 council at Littlewater, N. Mex., on January 16, 1965.

ALFRED BECENTI, *President.*

INDIAN MORTALITY RATES

Chairman HAYDEN. I should like to know, in a general way, how the death rate among Indians has decreased in recent years and how does that death rate compare with the average American death rate?

Dr. WAGNER. Mr. Chairman, there has been a rather significant improvement in the death rate and in the health status of the Indian in the past 10 years, for which this committee can take a great deal of credit. The infant mortality, for example, in 1954 compared with 1963 has been reduced by a total of 34 percent among the Indians and has been reduced by 39 percent in the Alaskan native. There has been an even more significant breakdown if we look at the period of the infant deaths. In other words, the period between 1 month and 11 months of age, when the baby has returned to the home. There has been a very significant decrease of 44 percent in their mortality among the Indians and 50 percent in the Alaskan native.

This has been due, we feel, to the improvement in the housing and the environmental health through the construction of safe water supplies and waste disposal for these Indians which gives the baby a better chance of surviving after he returns to the home. The death rate from tuberculosis, for example, if we compare it with 1954, reflects a 56-percent decrease in the death of the Indian and a 54-percent decrease in the rate of death of the Alaskan native due to tuberculosis. If we look at the incidence rate, that is, the number of new cases of tuberculosis that developed, there has been a reduction since 1954 in the Indian of 56 percent and in the Alaskan native of 78 percent. So we feel that this is a very significant decrease in some of these diseases and disease processes.

In the gastroenteritis death rate it is even more dramatic. There has been a 50-percent decrease in deaths due to this disease from 1954 to date, and, again, this is largely due, we feel, to the improvement of the home environment through the construction of safe water supplies and waste disposal.

HEALTH STATUS

There is a considerable amount still remaining to be done because the health status of the Indian is still about a generation behind that of the non-Indian. The infant mortality among the Indians is still nearly twice as great as it is among the non-Indians. The incidence of contagious and infectious diseases that are largely controlled in the non-Indian population is still quite significant and accounts for a great deal of the utilization of the health facilities.

INCREASE IN SERVICES

These services, as you know, Mr. Chairman, have risen rather dramatically in this 10-year period. For example, total annual hospital admissions increased 80 percent, from 50,000 to 90,000, despite a substantial decrease during this period in the hospitalization for tuberculosis. The increase represents a marked increase in the numbers of admissions for general conditions.

Ninety-eight percent of the registered births occurred in the hospitals, and this represents a rise of some 10 or 12 percent over what it was in 1954. The total number of births has risen 37 percent in the last 10 years. In the outpatient department, the medical visits to these hospital clinics has more than doubled since 1955, and in the satellite clinics, these health stations that are in the Indian community, on the itinerant clinic visits, they are now over one-half million, and dental corrective and preventive services are about at one-half million.

Chairman HAYDEN. Senator Mundt?

Senator MUNDT. I will yield to Senator Young.

NURSING HOME CARE

Senator YOUNG. Dr. Wagner, as you know, the Veterans' Administration has embarked on a pilot program providing nursing care in some of their hospitals. They have one such unit at Fargo, N. Dak. While visiting it last fall I found that the costs per patient per day were just a little over $6, only about a third of the cost of regular hospital care which is in the same building. These patients get very adequate care there. This program relieves some of the load on their regular hospital facilities and appears to provide an even more satisfactory situation.

Do you have any such program in your Service?

Dr. WAGNER. No, sir; we do not have any nursing homes that we operate. The problem that we have is a little different than the veterans in that our population is a young population. As you know, over 50 percent of the Indians and Alaskan natives are under 20 years of age, whereas I think that the majority or at least a significant portion of the Veterans' Administration beneficiaries would be in the upper age groups.

Senator YOUNG. In this particular situation there is no hospital on the Fort Berthold Reservation. They use hospitals in towns around the reservation. A great many Indians live in Newtown, a city of about 1,600. They have no hospital facilities there, but they are in the process of raising money for the construction of a nursing

care home. They have already raised over $100,000 and they will obtain a loan through the Federal Housing Administration for the balance required. They are wondering if the Division of Indian Health would be inclined to pay for the care of any Indians in this nursing care home should they be successful in putting it into operation.

INSTITUTIONAL CARE AND MEDICAL CARE

Dr. WAGNER. We have tried, Senator, to identify the patients that we take care of as patients requiring medical care or health services as opposed to maintenance services. We have tried to differentiate between the patients that go to the usual nursing home as welfare cases. The program takes care of the patients that are sick and the Bureau of Indian Affairs usually handles the cases that require institutional care as opposed to medical care. This is a rather fine separation. But to the extent that we would feel that a patient required care in that area, and that the facility was prepared to provide that care, we would certainly within the extent of the moneys we have available, pay for that care.

Senator YOUNG. You would have authorization to do it?

Dr. WAGNER. Yes, sir; we have the legal authority to meet the health needs of the Indians.

Senator YOUNG. I would think that in a situation such as this it would work out quite well. It is about 30 miles from Newtown to Stanley, and much further to Minot, where they now send some of their patients. I would think many of the patients could be taken care of adequately in the proposed nursing facilities. This is the experience of the Veterans' Administration. They seem quite insistent in getting as many patients as they can out of the hospital beds and into nursing homes. It costs only about one-third as much in the nursing facilities.

BELCOURT, N. DAK., HOSPITAL

I would like to ask a question about the new proposed hospital for Belcourt. You have $1,453,000 in this budget?

Dr. WAGNER. Yes, sir.

Senator YOUNG. $165,000 is included for health activities. Does that come under your jurisdiction?

Mr. CHADWICK. Sir, the $165,000 is that amount that will be required later for equipment for this hospital. Under our current procedure for budgeting, groups 2 and 3 equipment would be under the "Activities appropriation." One is the operation program and the other is the construction. That is the distinction.

Senator YOUNG. But you have these two items in this budget?

Mr. CHADWICK. Yes, sir. The equipment cost is not in for this year. We will not need it simultaneously. We are just indicating that there will be a need for $165,000 later.

Senator YOUNG. How are you coming with your planning? We gave you $85,000 for planning last year, I believe.

Dr. WAGNER. This is correct, sir. The planning study is underway and we hope to have it completed in time, reviewed and approved, so that we would be in a position to commit and obligate these construction funds this fall or winter if they are appropriated.

Senator YOUNG. When will you ask for bids?

Dr. WAGNER. Our estimated time for calling for the construction bids is around September, between September and December.

Senator YOUNG. That is all, thank you, Mr. Chairman.

Chairman HAYDEN. Senator Mundt.

OUTPATIENT CLINIC ADDITION TO WAGNER, S. DAK., HOSPITAL

Senator MUNDT. What is the situation in connection with the Wagner Hospital. You will recall the House report last year directed you were to proceed with the planning and construction and alterations to the hospital. I wondered if that had anything to do with the expenditure of $7,000 listed on page 77 of your justification?

Dr. WAGNER. Mr. Senator, the planning for the addition, which is an outpatient clinic that will also incorporate the field health activities, is well underway, and we hope that we will have this completed in time to request construction bids this spring.

Senator MUNDT. This spring?

Dr. WAGNER. Yes, sir.

Senator MUNDT. When would you be able to start construction on that program?

Dr. WAGNER. We would hope before the end of this fiscal year, sir.

Mr. CHADWICK. This is scheduled to be advertised for bids in March 1965. That approximate $7,000 you see in the budget is just the tag end of the remainder of the supervision cost for this project.

Senator MUNDT. If you call for bids in March, that is next month.

Dr. WAGNER. Yes, sir.

Senator MUNDT. Then how long a time is there between the calling of bids and when you begin construction?

Dr. WAGNER. Thirty to sixty days, sir.

Senator MUNDT. That will probably be this summer sometime?

Dr. WAGNER. Yes, sir.

CARE FOR INDIANS IN RAPID CITY, S. DAK.

Senator MUNDT. I have had voluminous correspondence with the Rapid City Medical Center, concerning their reference to obtaining compensation for the care of Indian patients. This apparently is with direct reference to Indian patients who have been away from their reservation for more than 30 days and who have entered the medical center for treatment.

I have had this correspondence with the Division of Indian Health on this matter, but so far, no satisfactory solution has been reached. It appears that the Indians leave the reservation and are treated at the Rapid City Medical Center on an emergency basis.

I think we have roughly 3,000 off-reservation Indians, the Indians who are in Rapid City where they have been employed, with some of them getting pretty steady employment and assimilating right into the population with no problem. Some of them in their first few months off the reservation are in a pretty sad, impecunious state, and if they get sick they go to the Rapid City Medical Center. When the center bills, they do not pay and cannot pay and efforts by the medical center

to collect are to no avail because the Indian patients say that they are not under State jurisdiction, and so cannot be taken into court.

I have a file here relating to this matter which I would appreciate it if you would take it with you and have somebody study and then write me with your suggestions for a solution. I would be happy to have any statement you would care to make now for the record.

I wonder if it is possible that a possible solution might be reached under the contract medicare program discussed beginning on page 18 of your justification.

We are caught here sort of in a dilemma of our own making. Everybody in the Service, in the Congress and in the Indian area, is trying to find jobs for Indians, getting them off the reservation and getting them assimilated. But, in this process, when they get off the reservation and get sick and don't have access to the Indian hospitals, we get into a difficult situation.

The hospital gets stuck with the bill. They write me and I write you. It is a long, slow process. I would like to hear your comments on it.

NONDUPLICATION OF SERVICES GAINED BY RIGHT OF RELOCATION

Dr. WAGNER. We certainly agree with you, Mr. Senator, that this is a significant and serious problem. We have set up the rule that we hope across the board will most prudently utilize the funds that are available. We will not duplicate the services that the Indian has from his community by his right of being a citizen of that community.

We realize that this creates problems because many of the communities in which the Indian relocates do not have the funds or the economic capability of taking care of them as welfare patients, if they are not employed. The problem is true in Rapid City. It is also true in Chicago and Los Angeles, and many other large cities where Indians have relocated and where they are not getting the services from the city and the local county, and they are being denied those services.

It has been a very difficult problem to administer because there is a need and they don't have the funds to pay for it themselves.

Local communities have difficulty in absorbing this large group of people on their welfare rolls.

PROBLEM OF CARE IN TRANSITORY PERIOD

Senator MUNDT. Yet this happens quite frequently, too. Indians going to and from work, or just driving around like anybody does, have a lot of accidents, emergency situations which arise. They take them to this medical center. You just can't let people die while you are having a jurisdictional fight.

It sometimes gets to be a pretty serious burden. I was wondering whether there was any emergency fund you have to meet that kind of problem. This must also exist in other places besides Rapid City. That is a big problem we have in our State, where we have been trying to provide livelihoods for them.

They have a good religious Catholic center and a Protestant one set up in the town which have developed pretty good housing for, roughly, I believe, 3,000 Indians who have ceased to be a Federal

problem and I think we owe them some kind of continuing health attention while they are getting on their feet.

Dr. WAGNER. We will be glad to study this, Senator, and do what we can.

Senator MUNDT. I wish you would, and be sure to return the file to me.

Dr. WAGNER. Yes, sir.

Senator MUNDT. I think we have to do a little creative thinking on this matter. I would think that maybe you could establish some kind of a line item in your budget to meet this problem generally.

RELOCATION AND CHANGE OF RESIDENCE

Dr. WAGNER. We have the authority and we have the funds in this contract medical care of an Indian, say, from Pine Ridge, who happened to be visiting in Rapid City and had an accident. We would pay for him. But, if he relocated and changed his residence to Rapid City, that would be something else.

Senator MUNDT. It is a discouraging thing to Indians. A relative goes up there and they get themselves into a jam before they get on their feet economically. The other people who hear of it are less likely to move in, and they will stay on the reservation without a job. This is something that could be a barrier to the program.

Dr. WAGNER. That is true, sir.

Dr. RABEAU. Our policy is that we will follow the Indian when he leaves the reservation until he establishes residence elsewhere, which gives him legal entitlement to the same services as others in the county. We follow him in the Dakotas for a year after he leaves the reservation.

Our problem has not been in the first year, but in subsequent years when welfare services are denied by the city and county to them.

EMERGENCY CARE

One other small problem is the regulation requiring notification and requesting approval for emergency care. We ask for it within 72 hours. This is often delayed for weeks afterward.

Dr. WAGNER. I think the point that the Senator makes of this total problem of trying to encourage the Indians to use their economic opportunities is a very serious one in many areas other than the Dakotas.

Senator MUNDT. Over the years, I have come to know a lot of them and their families. Wherever I can, I have encouraged them to leave the reservation and get good economic employment. We have problems with the relocation programs, which have done some good, but which have not lived up to expectations.

Meeting with the groups in Rapid City, I find this is one of the fears. They know on the reservation if they are sick or in an accident or if anything comes along they will have care.

They get a little concerned about this. They have difficulty getting in. I think it needs some kind of improvement. If you will write me in detail when you have a chance to study it, I would appreciate it.

Dr. WAGNER. We will be happy to do it.

PRACTICAL NURSE TRAINING PROGRAM

Senator MUNDT. Just what is the status of our practical nursing training program and the advanced program? You will recall we got a little start out there in Rapid City with a few girls to begin with and then we have added to that, as I recall, a followup training program for those who make good in the first instance. I would like to hear your comments.

Dr. WAGNER. This is a very wonderful program, sir. The advanced practical nurse training program which was established in November 1963 in Rapid City is designed to upgrade the skills of the practical nurse and to prepare her to perform more complex nursing procedures as well as develop her ability to carry more responsibilities. This is very significant because it compensates for the disparity that we have in the number of professional nurses who are available in the country as a whole for recruitment.

We have completed 30 of these nurses in training and with this class this year of 10, it will bring them up to 40. The course, as you know, Mr. Senator, extends over a period of 14 weeks and includes both classroom courses and clinical practice.

We have found that these girls, after they are trained, have been able to take over many of the functions under professional supervision by the registered nurses in the hospital and in the clinic. The quality of services has been tremendously improved, we feel.

Last year, the Congress appropriated $20,000 for the enrollment of qualified Indian practical nurses who have completed this course in schools, in order to get their degree in nursing.

We recruited three of these girls to go into the course. We had some difficulty because many of the girls lack the adequate numbers of courses and training in their high school and grade school, so they couldn't qualify or meet the qualifications of the school of nursing.

Of the three that did enter professional nurse training two of them dropped out and one is continuing. So, we have had some difficulty in getting it in full swing, but we feel that we are going to be able to make full utilization of the funds this year. This will be a very significant contribution to getting the Indian girls trained as nurses and back on the reservation to take care of their own.

Senator MUNDT. Is this program adequately funded in the present budget?

ADEQUACY OF FUNDING

Dr. WAGNER. Yes, sir. It was adequately funded. We feel that we can get more experience in the selection of these girls. This has required us to develop a special pretest or examination to determine what they have in the way of qualifications, and what their likelihoods are when they go into the school of nursing.

Senator MUNDT. And as the budget is before us, will you have enough money to continue this on about a four-girl basis, if you can find the girls?

Dr. WAGNER. That is correct, sir.

Senator MUNDT. I note in your letter of February 5 that you state—

At the present time, the list of available eligible candidates for the course from the Aberdeen area is exhausted, and qualified Indian practical nurses from the other divisions are being offered the opportunity for this training.

Would it be advisable, or would it be feasible to accelerate this training?

Dr. WAGNER. As it relates to the advanced practical nurse training program, that is correct, sir. We had temporarily exhausted those from the Aberdeen area and intend to extend it to the other areas until candidates from the Aberdeen area or the Dakota area become available.

We also have, Mr. Chairman, a course for training these practical nurses in the elements of public health nursing. We have been able to show that the practical nurse, the Indian girl who is a practical nurse, who is further trained in the public health nursing, is able to take over a number of functions that were traditionally thought reserved for the professional public health nurse.

This, again, has allowed us to compensate for these scarce categories of people, and now the professional public health nurse becomes a manager of services, using the public health-trained practical nurse with this basic training.

Senator MUNDT. I take it the girls who have finished this practical nurse training have no difficulty at all getting employment?

Dr. WAGNER. We have been able to employ all of them. We have a very acute need for them. Some of them have been picked up by the Division of Hospitals, another organization in the Public Health Service, and also the National Institute of Health at their clinical center.

HOUSING PROGRAM FOR PINE RIDGE, S. DAK.

Senator MUNDT. Would you furnish my office a rundown of the plan for Pine Ridge in the present budget? I understand you plan three units of relocatable quarters in the construction program and a total of seven units or quarters all together.

Dr. WAGNER. We will be happy to do so, sir.

(The information referred to follows:)

The 1966 budget request includes seven housekeeping quarters units, of which three are for Pine Ridge, S. Dak., and four are for Crow, Mont.

The units proposed at Pine Ridge are three-bedroom units and are demountable or relocatable. It is estimated that the total cost of these three units will be $51,000.

WATER AND WASTE FACILITIES, ENEMY SWIM AND LONG HOLLOW, S. DAK.

Senator MUNDT. Can you give us a little more detail on the water and waste facilities planned at Enemy Swim and Long Hollow? They are mentioned on page 83 of the justification.

Dr. WAGNER. May I refer this to Mr. Stevenson, the engineer?

Mr. STEVENSON. These will be primarily for scattered homes and will include a domestic water supply—a well—and a waste disposal facility.

For each family who will provide, at their own expense, space for a bathroom, it will include a flush toilet, with Indian participation in the work.

For those families who cannot afford this, we would provide a sanitary privy. In every case the water would be piped to a kitchen sink unit with disposal of the sink waste as a minimum facility.

Senator MUNDT. The Indians have to pay for this themselves?

Mr. STEVENSON. The Indians will have to do the on-premise labor as part of their participation. They will not have to buy the materials for the minimum facilities. But, if they want the bathroom—those who are a little further along the road culturally—they will have to provided the space for it, usually by building an addition on their house. This can be done with logs or other locally available structural materials. We would then provide flush toilets and septic tanks.

For those who will do more, in other words, we are in a position to go further. Our records show that between 40 and 60 percent of the Indians are participating in obtaining the "above minimum" or more modern facilities.

Senator MUNDT. How many Indians are cooperating under this program at Enemy Swim and Long Hollow, or is this a new program?

Dr. WAGNER. This would be a new project, sir.

SOUTH DAKOTA RESERVATIONS MOBILE HEALTH UNITS

Senator MUNDT. What is the status of our mobile health units for our South Dakota reservations? I understand that a request has been made to you from the people at the sanitarium. Is there anything in the budget for this unit, and, if not, how much would you have to put into the budget to get a pilot program underway?

Dr. WAGNER. May I submit that for the record, Senator Mundt?

Senator MUNDT. Surely.

(The information referred to follows:)

The pilot program, which involves the use of a mobile X-ray unit for mass tuberculosis testing, was proposed by the Rapid City Sanitarium. Since the Division of Indian Health considers tuberculosis testing and X-ray of positive tuberculin reactors as a preferable TB control program to mass X-rays, in that beneficiaries are not exposed to X-ray except where necessary, and since a mobile unit is already available through the South Dakota Tuberculosis Association, funds are not required and therefore are not included in the budget request for mobile equipment.

M'LAUGHLIN HEALTH UNIT

Senator MUNDT. Is the McLaughlin health unit in full operation now?

Dr. WAGNER. Yes, sir.

SOUTH DAKOTA HEALTH CENTERS AND SANITATION PROJECTS

Senator MUNDT. Have you moved forward on construction of the South Dakota health centers and sanitation projects? I believe you have a program beyond what was mentioned here just a minute ago by Mr. Stevenson. You had something in the budget for the last couple of years on this program.

Mr. STEVENSON. On sanitation facilities, sir?

Senator MUNDT. Yes.

Mr. STEVENSON. Yes, sir; since the program started in 1961, we have had 12 projects under construction in South Dakota. This includes two projects funded under the accelerated public works pro-

gram. Eight of these are completed, four others are under construction, between 35 and 90 percent completed.

Senator MUNDT. Will you put that list into the record, please?

Mr. STEVENSON. Yes, sir.

(The list referred to follows:)

AUTHORIZED INDIAN SANITATION FACILITIES CONSTRUCTION PROJECTS IN SOUTH DAKOTA

FISCAL YEAR 1961 THROUGH 1964

Reservation	Community	Project	Estimate (Federal cost)	Percent of completion as of Jan. 31, 1965
Cheyenne River	Cherry Creek	Commercial water and individual waste.	$48,000	100
Pine Ridge	Sioux City (Calico)	do	18,500	100
Rosebud	St. Francis	Commercial water, sewerage, and refuse.	162,000	100
Cheyenne River	Thunder Butte	Commercial water and individual waste.	34,500	100
Sisseton	Old Agency	Commercial and individual water and individual waste.	7,400	100
Pine Ridge	4 communities (Kyle, Manderson, Allen, Wakpamni Lake).	Communal watering points	20,500	100
Crow Creek	Crow Creek District	Individual water and waste	46,000	100
Pine Ridge	Pine Ridge, Phase I	Commercial water and sewerage.	294,500	90
Sisseton	Big Coulee-Old Agency	Individual water and waste	99,100	100
Pine Ridge	Pine Ridge, Phase II	Community sewerage	[1] 315,000	80
Standing Rock	Kenel	Community water and sewerage.	[1] 69,000	40
Cheyenne River	Iron Lighting and Bear Creek.	Individual water and waste	70,000	35

FISCAL YEAR 1965 AUTHORIZED PROJECTS

Rosebud	Horse Creek and Swift Bear.	Individual water and waste	$53,000	[2]
Rosebud	General (Upper Cut Meat).	do	50,000	[2]

[1] Accelerated public works.
[2] Plans and specifications in preparation.

AUTHORIZED EMERGENCY, INVESTIGATIONS AND ASSISTANCE TO PUBLIC HOUSING PROJECTS AUTHORIZED IN SOUTH DAKOTA

Reservation	Community	Project	Estimate (Federal cost)	Percent of completion as of Jan. 31, 1965
Cheyenne River	Cherry Creek	Emergency water source	$4,600	100
Pine Ridge	Allen, Lakeside, Wounded Knee, and Wamblee.	Emergency water sources	2,000	100
Crow Creek	Fort Thompson	Emergency water source	25,000	100
Pine Ridge	Pine Ridge community	Engineering study	20,700	100
Do	Wounded Knee	Water and sewerage for Federal housing project.	24,000	[1]
Rosebud	Rosebud	Water connection for Federal housing project.	13,000	100
Standing Rock	Wakpala	Geological study for availability of ground water.	15,000	[2]

[1] Plans and specifications completed.
[2] Essentially complete.

FORT MCDERMITT WATER FACILITIES

Senator MUNDT. Mr. Chairman, that concludes my questioning.

Senator BIBLE (presiding). Thank you Senator.

Dr. Wagner, there are a few questions I would like to ask you concerning some of our very troublesome Nevada problems. On September 23, 1964, your office wrote to me in reply to my letter of September 4. It stated that your engineering department had surveyed the needs for water facilities in the Fort McDermitt Indian Reservation, and that a community-type well should be constructed at an estimated cost of $126,000. You also stated funds were not available in the 1965 fiscal year budget for this purpose. Do you have a budgeted item for this well in your present budget?

Mr. STEVENSON. No, Senator, we do not have it in this budget. We do have a project for emergency work at Fort McDermitt.

Senator BIBLE. What is that project? Describe it. Have you ever been to Fort McDermitt?

Mr. STEVENSON. I have not; no, sir.

Senator BIBLE. I would recommend that you take a trip there. You would come back shuddering after seeing the deplorable conditions there.

Mr. STEVENSON. The situation at Fort McDermitt is that some years ago, as an emergency measure, we provided 35 wells for the use of the families. This was done in the first year of the sanitation facilities program—1960–61.

Since that time, a number of these wells have not been maintained by the Indians. A few have gone dry. Last fall, there were difficulties in the Fort McDermitt area.

We have a community worker, a health worker, assigned to Fort McDermitt to work with them on getting more understanding of the relationship between disease and the environment and the need for maintenance of the physical facilities. We have also assigned an Indian sanitarian to work with them on completing the improvements in the facilities so that they will operate.

The project also includes provision for screening of the homes, as one of the elements that caused their difficulty this fall was poor fly control.

We are providing all of the materials. We have a truck up there now with these materials and the Indians are working on the repair of these facilities. This will restore the wells which are inoperable because pumps have not been maintained or will deepen those that require further deepening.

As far as the community-drilled well and pipe system, we felt that this emergency work should be done first and then evaluate whether this does not solve the immediate problem before considering a contract for a deep-drilled well.

Senator BIBLE. When will you complete this project?

Mr. STEVENSON. This will be completed within the next 3 to 4 months.

HEALTH PROBLEM

Senator BIBLE. Of course, when you say you had a slight difficulty up there, I think you understated the case. Four Indian babies die, and 160 people were seriously stricken with gastroenteritis. There was

a very, very difficult problem there. It is more than a little difficulty when four babies die.

Dr. WAGNER. We certainly agree, Senator, this was a very significant problem.

Senator BIBLE. It is deplorable. I wish you fellows would go out and take a look at it. I have visited there personally and have gone over it, and I have had my staff people look into it. This is one problem that you have to remedy quickly or you will be in some trouble.

Mr. STEVENSON. As one further item on that, Senator, as you know, this is a remote group of Indians. We have a contract with the State health department for providing some assistance in connection with the health work on the reservation.

Senator BIBLE. What type of a health contract do you have with the State of Nevada to provide health assistance for these particular Indians? These are human beings, the same as others, and they are dying.

Mr. STEVENSON. It is to make surveys of the sanitary needs of the community and to give them technical assistance. Our full-time staff, until the time we moved the community worker and sanitarian up there, were located more than 200 miles away. Therefore they had resources closer to the reservation.

Dr. WAGNER. We contract, Mr. Senator, with local physicians to provide medical care for the 450 residents on this reservation, and then we contracted with the State health department to provide public health nurses and the sanitary engineering services.

Senator BIBLE. How do you provide potable, uncontaminated water for them? Whose responsibility is that?

Dr. WAGNER. It is our responsibility.

Mr. STEVENSON. This would be under the project, it would be our responsibility.

Senator BIBLE. When will you have that done so they can get some water that is safe for drinking? Did you say within a month?

Mr. STEVENSON. Within 3 months. We have the truck with the materials for making repairs to the wells at Fort McDermitt now. Thirty-four wells are now operational.

Dr. WAGNER. And we have also stationed some people up there, Mr. Senator. We have a community worker and we have a sanitarian there.

ADEQUACY OF FUNDS

Senator BIBLE. I am happy to learn, at long last, that you are doing something on this. If this had gone on much longer, possibly the whole community would have died. You should have been there many months ago, as I see it.

Dr. WAGNER. We would have liked to, but there are some 20 or 30 reservations where the populations are 400 and 500, and we have not had enough resources to station people there.

INFANT MORTALITY

Senator BIBLE. Were babies dying at these other reservations? How many babies died at those reservations?

Dr. WAGNER. In the Washington area, for example, our infant mortality on the western reservations, 26 of them, is almost four times

higher than the general population, and at least twice as high as in the rest of the Indian reservations.

Senator BIBLE. I don't think that is quite responsive. How many Indian babies were dying because of unsanitary water conditions during July, August, and September of last year?

Dr. WAGNER. I would have to get that information for you.

Senator BIBLE. I certainly can't believe there would be very many. At least I hope there were not.

Dr. WAGNER. Our infant mortality is quite high, as you know.

Senator BIBLE. Due to this cause?

Dr. WAGNER. Due to the basic cause of a lack of food and a safe water supply. About 80 percent of the Indians have to haul their water and 70 percent of these are getting the water from contaminated sources.

Senator BIBLE. During the period of a couple of months you lost four Indian babies on this small Indian reservation. I wish you would supply for the record—in telling me about your responsibilities on the other Indian reservations, and I recognize you have other responsibilities, but you are the one who made the point, and not I—a statement indicating how many Indian babies died because of unsanitary water conditions at other places during July, August, and September of last year.

CONTRIBUTORY FACTORS

Dr. WAGNER. We will supply it to the best of our knowledge, Mr. Senator. Of course, there are many different factors, the home factors, the environmental factors, and the types of foods they have which all contribute, as well. We will do the best we can, sir.

Senator BIBLE. You are the one who made the point. Just develop it to the best of your ability. I don't want you to make a project out of it.

(The information referred to follows:)

NUMBER OF INFANT DEATHS, JULY, AUGUST, AND SEPTEMBER 1964

The number of infant deaths in Public Health Service hospitals (newborn and other babies under 1 year of age) reported for the months of July, August, and September 1964, was as follows:

	Number of infant deaths [1]		
	Total	Indian hospitals excluding Alaska	Alaska
July 1964	17	12	5
August 1964	25	22	3
September 1964	27	21	6

[1] PHS 2515-2 (discharge record).

The total for the quarter was 69 of which 14 occurred in Alaska. Of the 69 infant deaths, 33 were among newborn and 36 were other infants. (The total births and other infant admissions in this period was 4.234.) The leading causes of death among the newborn were immaturity and congenital malformations. The leading causes of death among other infants (after the newborn period) were pneumonias and gastroenteric conditions (the latter in September).

FORT MCDERMITT WATER FACILITIES

Senator BIBLE. Let me recap, just so that I am clear on your answer to me, Mr. Stevenson. You have your team up there now and you expect to have a safe water supply, an emergency water supply, developed within the next 3 months?

Mr. STEVENSON. Within the next 3 months, sir. There are 35 existing wells to be repaired, pumping equipment that has gone bad to be repaired. In a few cases, wells have gone dry and they would be deepened. This would provide 35 sources of water supplies. As of February 26, 34 wells are in operating condition at Fort McDermitt; all well repair work to be completed by March 4, home water storage, screening, and privy repairs by early May.

Senator BIBLE. When you finish this project, will you have drinkable water?

Mr. STEVENSON. Yes, sir. The water supply that is coming from these wells now is drinkable. The problem is not related solely to water supply.

Flies are one of the major factors that they had in this last period, during the period of the gastroenteritis. As a matter of fact, they had high gastroenteritis in the non-Indian communities in this vicinity, according to the county health officer. Therefore this is one problem. Also if they did not have a suitable water supply, they went to another source that might be contaminated. They might have gone to irrigation ditch water, and so forth. We are not at all sure that water, itself, was the cause of this. It is one factor that could well be related to it.

Senator BIBLE. There may be other factors. But certainly this problem, in itself, is something to which you could not point with pride.

Mr. STEVENSON. That is correct, sir.

SANITATION FACILITIES PROJECTS PROGRAMED FOR NEVADA

Senator BIBLE. In the same letter of almost a year and a half ago, you estimated there were 13 projects in Nevada which were in the need of sanitation facilities; and that the estimated cost would be $885,000. Can you tell me which projects you intended to initiate during fiscal year 1966 and what the cost will be for these projects?

Dr. WAGNER. Yes, sir. Mr. Stevenson has that.

Mr. STEVENSON. I believe, sir, there is one project listed in the budget for Fallon, Nev., community water and individual waste disposal facilities, costing $120,000. We have completed five projects between 1960 and 1964, and in 1964 we have two projects under construction, 55 to 80 percent completed and three under design. They involve connections with adjoining community water systems.

NEVADA INDIAN RESERVATIONS WITH SANITATION FACILITIES

Senator BIBLE. How many Indian reservations are there in Nevada for which you have a responsibility?

Mr. STEVENSON. I would like to correct it for the record, but I believe there are about 25 colonies or reservations.

Senator BIBLE. And of those, how many have sanitary water supplies?

Mr. STEVENSON. There are seven that we have completed of this group.

Senator BIBLE. You have completed 7 out of 25. What would be the total population of these 25 reservations and Indian colonies?

Dr. WAGNER. It would be approximately, Mr. Chairman, 7,000, of which Fort McDermitt has 450, the service unit, including Duck Valley, Elko, Te-Moak and Ruby Valley have approximately 1,800, and Pyramid Lake and Walker River have a total of approximately 3,800. Also included would be a school at Stewart, which would have another 600.

Senator BIBLE. Is that the approximate Indian population of Nevada?

Dr. WAGNER. That is the approximate Indian population that comes under the benefits of the program; yes, sir.

There may be Indians who have lost their identity as an Indian for purposes of this program, living in either Reno or someplace else.

Senator BIBLE. I would assume there are not many more in addition to that.

Dr. WAGNER. No, sir.

INDIAN PARTICIPATION REQUIREMENT

Senator BIBLE. What is your projected timetable for completing the balance of the projects for sanitary water supplies in the State of Nevada?

Dr. WAGNER. I think, Senator, we can't give an accurate figure on that for this reason: this program as you know, depends upon developing an understanding of agreement with each tribe, because the tribe has to participate with the Federal Government in the construction in order to insure that once it is constructed, it will be utilized and maintained. As you know, there is a backlog of sanitation and water supply facilities where we have identified a total of more than 51 million dollars for the program as a whole. I think we can give you a breakdown on the needs in Nevada.

Senator BIBLE. Would you supply that for the record? And also how quickly we could do it if the resources were available to do it.

I think also, since you have this other factor that you suggest, how many of the Indian tribes themselves within these 25 reservations and colonies have indicated an interest in working with you cooperatively in working out a sanitary water supply. Would you supply that for the record?

Dr. WAGNER. Yes, sir.

(The information referred to follows:)

SANITATION FACILITIES CONSTRUCTION PROJECT NEEDS IN NEVADA

Reservation or colony	Project description	Estimated cost	Tribal request received
Fallon Reservation [1]	Community water and individual waste	$120,000	Yes.
Duck Valley Reservation	Communal and individual water and individual waste.	244,000	Yes.
Ely Colony	Community water and sewerage	8,000	Yes.
Fort McDermitt Reservation	Community water and individual waste	126,000	Yes.
Winnemucca Colony-Summit Lake Reservation.	Community and individual water and community and individual waste.	16,000	Yes.
Walker River Reservation	do	191,000	Yes.
Fallon Colony	Community water and individual waste	30,000	No.
Te-Moak Reservation (South Fork)	Individual water and waste	50,000	No.
Goshute Reservation	Community water and individual waste	57,000	No.
Yomba Reservation	Individual water and waste	16,000	Yes.
Duckwater Reservation	Community and individual water and individual waste.	36,000	Yes.
Ruby Valley Reservation	Community water and individual waste	8,000	No.
Odgers Ranch Reservation	Individual water and waste	4,000	No.
Total, 13 projects		906,000	

[1] Included in fiscal year 1966 budget request.

If additional resources in both staff and construction funds were made available, the remaining backlog in Nevada could be accelerated for completion within about 4 fiscal years. However, this estimate is predicated upon affirmative action by the Indians involved and the respective priority of the projects within the Phoenix area (Arizona, Nevada, California, and Utah). As shown in the table, five Nevada groups have not requested a project.

FORT MCDERMITT SELF-HELP HOUSING PROGRAM

Senator BIBLE. I have another question relating to the McDermitt Reservation. As I am sure you must know, it is a poverty-stricken area, with very few job opportunities. I have requested the Bureau of Indian Affairs to give me details as to their plans in improving housing on their self-help program, which, as I understand it, means that the Indian people contribute their labor, and the Bureau of Indian Affairs contributes the materials.

What type of liaison do you have with the Bureau of Indian Affairs in working jointly on this particular type of a problem?

Dr. WAGNER. We have a very close arrangement, Mr. Senator. I think Mr. Stevenson can go through the types of housing and how we cooperate, and how it is planned if it would be of interest to you.

Senator BIBLE. It is of concern to me because I am interested in improving these conditions. If there were a self-help housing program for McDermitt. for example, since we are talking about McDermitt, where would you people get into that?

Mr. STEVENSON. Within our budget request for 1966, you will note there is $2.2 million related to assistance to housing. We have agreements with both the Bureau of Indian Affairs and the Public Housing Administration that in connection with the mutual help—self-help—housing, we would provide water supply and waste disposal facilities within 5 feet of the house, and they would provide the housing as a self-help project.

If a housing project is approved for Fort McDermitt, it would be included in the sanitation work that we would do under this program. We have been requested by the chairman to submit a list of such projects. I mention this because our projects are dependent upon the location of Public Housing Administration projects under annual contribution contracts.

The tribe must establish a local housing authority and develop a workable plan approved by the Public Housing Administration. BIA participates on the administrative aspects. When the project is approved for an annual contribution contract, then we would do the sanitation work.

We derived our figure of $2.2 million jointly with Public Housing and the Bureau of Indian Affairs. First all the carryover housing projects from 1965 which were deferred, then applications that Public Housing had on hand, and lastly, an estimated amount for additional applications, because we knew there would be some new ones.

STATUS OF NEVADA SELF-HELP PROJECTS

Senator BIBLE. I wish you would supply for the record that information insofar as Nevada is concerned. It may be embraced in the broader question of the chairman.

Yesterday or the day before yesterday, when Commissioner Nash appeared before this committee, I understood him to say that we had four self-help projects in Nevada—I think one at Schurz, one at Stewart or the Carson Indian Colony, one at Dresslerville, and one elsewhere in eastern Nevada.

I would like to have a status report as to each of those projects. Some of them, if I understood him correctly, were completed and had been worked out cooperatively with the Division of Indian Health.

Mr. STEVENSON. Yes, sir. We have Dresslerville, Duck Valley, Pyramid Lake projects.

Senator BIBLE. That is three.

Mr. STEVENSON. These are mutual help.

Senator BIBLE. I may have misunderstood him about four.

Mr. STEVENSON. Are you speaking of this year, sir, or next year?

Senator BIBLE. I was speaking currently of fiscal 1965.

Mr. STEVENSON. This list that I am reading from, sir, is a list that we developed with Public Housing and the Bureau of Indian Affairs.

What happens is that there might be another project that has come into the picture under the Public Housing Administration procedure of approving projects within an allocation of a total number of housing units.

Senator BIBLE. That could well be. If you will supply that for the record, it not being such an embracive question as that of the chairman, I will appreciate it.

(The information referred to follows:)

FISCAL YEAR 1965 SANITATION PROJECTS IN CONNECTION WITH PUBLIC HOUSING FOR INDIANS IN NEVADA

Dresslerville Indian Colony

Ten mutual-help houses authorized and slabs are being constructed. Tribal-PHS agreement executed for sanitation facilities and construction is underway.

Duck Valley Reservation

Fifteen of thirty authorized mutual-help houses under construction at Miller Creek. Indians are providing their own water supplies under Public Health Service technical supervision. Tribal-PHS agreement executed for waste disposal facilities and plans and specifications have been completed so that construction can now be initiated.

Pyramid Lake Reservation

Fifteen mutual-help houses authorized but right-of-way difficulties have delayed project start. Problems now resolved.

OTHER NEVADA PUBLIC HOUSING PROJECTS

Carson Indian Colony

Local Indian housing authority application for 20 mutual-help houses now in process at Public Housing Administration (see group (2) under assistance to Federal housing programs).

Schurz, Nev., potential project

No local Indian housing authority has been established to date. Consideration is being given to a public housing program for Indians using surplus houses from the Federal installation at Hawthorne, Nev. Housing units for approximately 90 families are involved. Public Health Service will assist when a reservation plan is submitted to the Public Housing Administration.

RESPONSIBILITIES OF PUBLIC HEALTH SERVICE INDIAN PROGRAM IN NEVADA

Senator BIBLE. As I understand, your responsibility lies for reservations and for colonies, and I think you said in Nevada these amount to a total of about 25.

Dr. WAGNER. This was our estimate; yes, sir.

Senator BIBLE. Would you supply that for the record? I want to know where your responsibility is. For example, are you responsible for the Las Vegas Indian Colony that is located within the corporate limits of Las Vegas? I think you are.

Mr. STEVENSON. Yes, sir. We put in the water and sewer line for them.

(The information referred to follows:)

INDIAN GROUPS IN THE STATE OF NEVADA

1. Pyramid Lake
2. Reno-Sparks
3. Fort McDermitt
4. Summit Lake
5. Winnemucca
6. Battle Mountain
7. Elko
8. Duck Valley
9. Odgers Ranch
10. Ruby Valley
11. South Fork
12. Ely
13. Goshute
14. Carson
15. Duckwater
16. Fallon Reservation
17. Fallon Colony
18. Lovelock
19. Walker River
20. Washoe-Dresslerville
21. Yerington Reservation
22. Yerington Colony
23. Yomba
24. Las Vegas
25. Moapa River

STATUS OF LAS VEGAS, RENO, WINNEMUCCA, AND ELKO INDIAN COLONIES

Senator BIBLE. I know, because we appropriated some money with the directive that you do it. That was 2 or 3 years ago. Can you give me a rundown as to the present status of the Las Vegas Indian colony, the Reno Indian colony, the Winnemucca Indian colony, and the Elko Indian colony?

Dr. WAGNER. We would be happy to.

Senator BIBLE. I would like to have a status report on that.

Also, under a direct, line-by-line appropriation item and a directive, you expended money in Elko to put in some type of water facility for the Elko Indian colony. I would like to have that supplied for the record.

But you do have responsibility for Indian colonies as well?

Dr. WAGNER. Yes, sir.

(The information referred to follows:)

STATUS OF INDIAN COLONIES IN NEVADA

Elko Indian colony, Nevada

Recent information indicates that the water supply system mains and the sewerage system are operating properly and are in excellent physical condition. All 25 homes have running water and kitchen sinks and 23 have flush toilets. Some water pipe freezeups have occurred in homes when occupants left for extended periods during the winter and when they failed to drain water piping. Most householders maintain facilities in their homes to the best of their ability.

Reno-Sparks Indian colony, Nevada

A community water and sewerage facilities project was authorized last year. Final design of the facilities has been delayed because relocation of the Indian group is now under consideration. When the future location of the Indians is determined, the design can be completed and if the costs are within the authorization the project will be constructed.

Las Vegas Indian colony, Nevada

Fifteen homes were provided with running water, kitchen sinks, and flush toilets in the project authorized in fiscal year 1962. An inspection this month indicates there are now 22 dwellings in the colony. All but two are connected to the water system. The fixtures and water and sewer lines are functioning properly and the residents perform routine maintenance work as needed.

Winnemucca Indian colony, Nevada

A sanitation project request (proposal) has been received by the Phoenix area office of the Public Health Service. The project summary has been developed, the priority established, and it has been placed on the area priority list for future budgeting.

BASIS FOR IDENTIFYING INDIAN COLONIES

Senator BIBLE. How do you determine if it is an Indian colony? Is the land held in trust by the U.S. Government for the Indians?

Dr. WAGNER. There are many different ways, Mr. Senator. If it is an Indian community and identified as an Indian community, for all intents and purposes we include all of those as our responsibility. This does not include, usually, Indian communities where they are neighborhood Indians, so to speak, living within the corporate limits of most of the larger cities.

But there are exceptions to this. As I pointed out, the one in Las Vegas is an exception. But there are Indian neighborhoods in some of the larger cities, like Chicago, where the Indians are living more or less in an identifiable, geographic area within that city. They don't have eligibility.

PROCEDURE BY WHICH COLONY MAY OBTAIN IMPROVED HOUSING AND SANITARY FACILITIES

Senator BIBLE. Would you do this for me? Would you supply for the record a very simple statement as to what you would advise an

Indian who lives in an Indian colony to do in order to improve his housing and have adequate sanitation facilities?

Dr. WAGNER. We will be very glad to do that, sir.

Senator BIBLE. As I understand it, this is pretty much of a three-way arrangement with the Bureau of Indian Affairs, the Division of Indian Health, and the Public Housing.

Dr. WAGNER. This is correct.

Senator BIBLE. We are working on a project of this kind at Schurz, and I am hopeful it can be accomplished. I think it can. But I wish you would give me just a short explanation of how this should be done.

Dr. WAGNER. Very good, sir.

(The information referred to follows:)

ELIGIBILITY FOR SANITATION FACILITIES PROJECT

Any organized tribe or group composed of beneficiaries of the Public Health Service is eligible for a regular sanitation facilities project. The Indians living in organized groups or colonies in Nevada should make their desires for sanitation facilities or public housing known to their own tribal leaders. The tribal leadership should make a request (project proposal) to the PHS Service Unit Director indicating their desires and their willingness to contribute to and participate in such a project. An engineer works with the Indian community and develops a project summary which includes background of need for project and cost estimates for construction work. At the Indian health area office a priority is assigned to the project based upon such criteria as: urgency of health need, feasibility of the project from an engineering and economic standpoint, and ability and willingness of the Indian groups to (1) contribute to and participate in the construction of the facilities, and (2) operate and maintain completed facilities.

Inclusion of projects from each area in the construction budget is dependent upon the ceiling allowed for this program and the position of the project on the area priority list.

Similarly, with respect to housing desires, the Indians should inform their own leaders. The public housing program requires that a local public housing authority be established and a reservation plan be approved. The Bureau of Indian Affairs agency office would be the first point of contact for Federal assistance on this work.

After a local housing authority is established, the Public Health Service jointly with Public Housing Administration, Bureau of Indian Affairs, and the Indians participate in site selection. The Public Health Service then provides water and waste disposal facilities within 5 feet of the housing site as a special project under the item "Assistance to Federal housing programs" in the budget.

FLOOD DAMAGE TO PYRAMID LAKE RESERVATION WELL

Senator BIBLE. Last December, we had a very bad flood on the Truckee River, which extends to Pyramid Lake. As a result of this flood, the well on the Pyramid Lake Reservation was severely damaged. The tribal council and the attorney for the council have brought this to my attention, and I in turn brought it to your attention. It may have been brought to your attention directly here, Doctor, though I am not sure.

Since that time that I called it to your attention, I have a report from the Nevada State Health Department concerning the poor water supply and stating that the well could be repaired. I am very anxious to have you do something on this. I want to avoid repetition of the problem that we had at Fort McDermitt.

Another thing that bothers me is the fact that I had to rely upon having this problem called to my attention by the Nevada State Department of Health, not by anybody in the Bureau of Indian Affairs

or anybody in the Indian Health Service, and by the newspapers, apparently before any of your people had made any type of an on-site inspection.

I am wondering if there is any way that you can keep in closer contact with these people who make investigations. It is a little embarrassing to have an official of the State health department—a man by the name of Dr. Mastrionni, an old fraternity brother of mine whom I knew very well—a little embarrassing to have him call to my attention as a Federal official a problem that is certainly Federal responsibility.

What do you do to avoid or eliminate this type of a problem? What is your liaison with the State health department?

Dr. WAGNER. We have a contract with Nevada and give them money to provide these services on these small reservations. They send the public health nurses and the engineers to the reservations on a regular basis. We send a physician, for example, to Fort McDermitt on a monthly basis from Schurz.

In looking at it with hindsight where we slipped up here, Mr. Senator, was the followup at the time the public health nurse and the engineer went to Fort McDermitt——

Senator BIBLE. I am talking about the Nixon Reservation.

Dr. WAGNER. The same thing can be repeated in over 30 or 40 of these very small reservations over the country. Unless you have a full-time person assigned to each reservation, it is absolutely impossible for us to keep on top of them.

NATURE OF CONTRACT WITH STATE HEALTH DEPARTMENT

Senator BIBLE. What type of a contract do you have with the State department of health in Nevada?

Dr. WAGNER. We have a contract with them that provide basically two types of service. One is the sanitation-engineering services.

Senator BIBLE. That is the reason I am asking this question—because Dr. Mastrionni is a sanitary engineer.

Dr. WAGNER. But I think we should have been alerted to this problem from the State public health nurse. In other words, the public health nurse goes to the reservation and does check over the status of the health of the people.

The difficulty that had happened there was we were alerted that there were five cases only, because these were the cases that were hospitalized. Yet, there were 160-odd people who were quite ill that we weren't alerted to. The only way you can be alerted to this, Mr. Senator, is to have a full-time person on the reservation, a community worker or a public health nurse, or a physician.

When the reservation is small, the disparity between the available resources and needs for those resources result in our not being able to effect our responsibilities properly.

Senator BIBLE. One thing that is unexplainable to me in the Fort McDermitt situation is the slowness with which you moved after you were alerted. It took forever and a day and just constant attention on our part, my office's part, my staff's part, to ever get anything done about this.

I think this is certainly something that can and must be improved. I am sure you would agree with that.

Dr. WAGNER. I agree with you, sir.

Senator BIBLE. State a little more clearly the contract that you have with the State of Nevada for the services of the sanitary engineer. How much is he paid a year?

Dr. WAGNER. We contract as a gross package with the State health department. I believe the contract is $9,500; $2,500 of this is for sanitation, and the other is for such services as the public health nursing, and health education.

Senator BIBLE. What does the contract provide? You are paying $2,500 to the Health Department of the State of Nevada for the services of a sanitary engineer. What is he supposed to do for that?

CHANGE IN COURSE OF RIVER REQUIRING NEW COMMUNITY WELL

Dr. WAGNER. Mr. Stevenson will elaborate.

Mr. STEVENSON. Furnish technical assistance on special sanitation problems on an Indian reservation or colonies, conduct sanitary surveys on Indian reservations or colonies, report the findings or recommendations to the Phoenix area office, make epidemiological investigations of disease outbreaks among the Indians, and lastly, conduct or participate in special training courses for the Indians.

If I might add a comment about your question on the well at Nixon, I think this has a little relationship to the whole picture. As you know, there were some 32 inches of rain between December 16 and January 6 that affected the Nevada area and particularly upper California, which happens to be in the Phoenix area operation, Oregon, Idaho, and so on.

The problem that occurred at Nixon was that when the Truckee River changed its course, it wiped out the protective area around the community well, and therefore made the well subject to, frankly, further questionable use. As a part of the rehabilitation for both this situation and these other storm-affected areas, some additional, substantial work has to be done, in this case a new community well will have to be drilled at a safer location.

Senator BIBLE. When will that be done?

Mr. STEVENSON. We have requested consideration of a proposal to support the total needs for improvement affected by this storm. This is now currently under review in the Bureau of the Budget, sir. This is one piece of it, this particular well at Nixon.

With chlorination the existing well can be used. I believe Dr. Mastrionni probably referred to that. It can be continued as a standby. But for long-term use, a new well is needed for the whole community.

Senator BIBLE. You get a report back from the sanitary engineer of the State of Nevada, and what do you people do with that report? How do you implement it? Do you correct the situation as he sees it and follow his recommendations?

Mr. STEVENSON. I believe the situation that he had referred to was chlorination of the water, which is handled by the tribe. It is their responsibility to operate this equipment.

Normally, the function of a State health department engineer, or one of ours, is to review and, if the chlorination has broken down, to go with the operator of the chlorinator and show him how to fix it.

FIXING RESPONSIBILITY FOR CARE

Senator BIBLE. My great problem in this area has been to fix the responsibility. Having been in Government on both the State side and Federal side for many years, I always find a great tendency to pass the responsibility to somebody else.

When the State health sanitary engineer, who is under a contract with you to make these studies and determine what the situation is, makes his recommendations, what weight do you people give to him? He is your contract employee.

Dr. WAGNER. It is still our responsibility.

Mr. STEVENSON. We have two responsibilities. One responsibility is the question of drilling the new well. This is our responsibility and, as I say, this is in the request for storm repair, storm rehabilitation, if you will.

The second point is the question of the chlorination of the supply. The Indians are maintaining the facilities at this community. The State engineer would serve, as one of us would, in advising the Indian operator how to do the job in chlorination. This was a breakdown in the operation on the community's part, resulting from the storm.

Senator BIBLE. Does he make his report to you first? Where does his responsibility lie to you under the contract?

Mr. STEVENSON. I am sure he would report to us in connection with the contract, but he would be working with the people at Nixon to see that it was corrected on the spot, as far as chlorination.

Dr. WAGNER. I think, Mr. Senator, it is our responsibility to see that any contractor we have has his recommendation put into effect to the best of our ability. We do not shift the responsibilty on to him just because he has a contract with us.

I think the confusing thing, though, that comes up in all of these discussions is that the Indian, as a citizen of the State, is entitled to all of the services that he would be entitled to as a citizen of that State, whether he was an Indian or not. But because he has special problems which are unique to him as an Indian citizen, the Federal Government gives him additional types of services.

Whether or not it looks like we are trying to shift responsibility, we aren't really trying to. We are trying to get the full utilization of all the State and local resources so that when we apply our resources it is an additional resource and not a replacement resource.

But this doesn't relieve us of the responsibility for elevating the health status of these Indian groups who are beneficiaries. This is our primary responsibility, and we accept the accountability for the success or failure of it.

PROCEDURE FOR REPORTING UNSANITARY CONDITIONS UNDER CONTRACT WITH STATE HEALTH DEPARTMENT

Senator BIBLE. To whom, specifically, does the sanitary engineer of the State of Nevada report?

Dr. WAGNER. He reports to the State health officer.

Senator BIBLE. To whom does the State health officer report? To the superintendent?

Dr. WAGNER. In terms of this contract, in effecting this, he sends his reports to the area office in Phoenix, which has the operational responsibility for the health program in Nevada.

Senator BIBLE. Does he furnish copies of that to your headman in Stewart, whatever his title is?

Dr. WAGNER. We have two service unit directors, the one at Owyhee and the one at Schurz. The one at Schurz is responsible for the reservation at Fort McDermitt. When the State health engineer made his survey at Fort McDermitt, I assume he sent copies of the report to our area office and, also, to our doctor at Schurz.

IMPROVEMENT OF LIAISON

Senator BIBLE. It seems to me part of your difficulty might be that, by the time it gets to Phoenix and back, the entire colony could die because of the long time lapse.

I should think there would be some way for this to be expedited. When you have a State health man under contract with you who tells you of a bad condition which should be remedied, it should be taken care of immediately.

I don't know if you have a comment on how you could improve the liaison or get faster action. But I commend it to your attention, because it is giving serious problems in Nevada.

Dr. WAGNER. We can assure you, Mr. Senator, we are going to do everything we can to improve this.

FISCAL YEAR 1966 OPERATIONS PROGRAM FOR NEVADA

Senator BIBLE. Would you either state now, if you have it available, or supply for the record, the amount of money you expect to spend this fiscal year in Nevada?

Dr. WAGNER. Yes, we have that, Mr. Chairman.

Mr. CHADWICK. $1,009,000 in the State of Nevada for fiscal year 1966.

Senator BIBLE. What are you going to spend that for?

Dr. WAGNER. For activities. This is not construction.

Mr. CHADWICK. This is other than construction. This is the operations' program for the State of Nevada, $1,009,000. We would need to summarize for the record the construction.

Senator BIBLE. Would you please summarize for the record, too, exactly, what you are going to spend that $1,009,000 for?

Dr. WAGNER. This will operate the hospital at Owyhee, Mr. Senator, and also the hospital at Schurz. It will operate the contract-patient-care program, that is, the buying of medical care from the physicians and the local hospitals that are nongovernmental.

Senator BIBLE. How about the Schurz hospital? Is that adequate?

Dr. WAGNER. Yes, sir. That is, its bed capacity is adequate. We are averaging daily patient load there of 16 and there are 24 beds. We have 27 personnel there. We feel, it is relatively, adequate.

Senator BIBLE. What are the 27 personnel? Does it include three doctors?

Dr. WAGNER. There are two doctors. It carries a nursing staff—I will give a detailed breakdown of these 27 personnel for the record.

Senator BIBLE. Who is entitled to go to the Schurz hospital?

Dr. WAGNER. The Schurz hospital includes the people at Walker River, primarily, but it also includes those cases that are elective, that are referred down to Pyramid Lake and from the adjacent Little Fallon.

Senator BIBLE. How about Stewart Indian Agency? Where do they go?

Dr. WAGNER. The Stewart school is primarily a boarding school, and these cases are hospitalized locally, other than those that are in the school infirmary.

Senator BIBLE. Are they entitled to medical service at Schurz?

Dr. WAGNER. Yes. It depends upon what is best for the patient. We can refer them to Schurz if it is an elective condition, or locally hospitalize them under the contract-patient-care hospital in the community hospital if it is best for the patient.

Senator BIBLE. And you will supply for the record the breakdown of the total money? The $1,009,000 is operational, without construction?

CONSTRUCTION PROJECTS AND SANITATION FACILITIES

Mr. CHADWICK. That is right. And we would add to that the various construction projects that would be appropriate, as well as the sanitation facilities.

Senator BIBLE. I am trying to have a total picture. So would you supply the total amount that you will expend in Nevada under your budget which is now before the committee for consideration, and break it down in detail?

Dr. WAGNER. Yes, sir.

Senator BIBLE. What is the total amount, incidentally, that you will expend in Nevada for everything?

Mr. CHADWICK. We will have to supply that, Mr. Senator. The construction would vary from one year to another, depending on what particular project we had at that particular time.

Dr. WAGNER. It would also include the sanitation facilities construction.

Senator BIBLE. And you have to add that to $1,009,000.

Mr. CHADWICK. One project that Mr. Stevenson mentioned was $120,000 for the Fallon sanitation project. That would be part of it. There would be no continuity from year to year for construction.

Senator BIBLE. Would you spell that out and supply it to me for the record?

Dr. WAGNER. Yes, sir.

(The information referred to follows:)

ESTIMATED EXPENDITURES FOR NEVADA, FISCAL YEAR 1966

Hospital health services	$549,000
Contract medical care	300,000
Field health services	160,000
Total, Indian health activities	1,009,000
Construction, sanitation project at Fallon, Nev	120,000
Total	1,129,000

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Stevenson, Donald D., chief forester, the Buckeye Cellulose Corp., Foley, Fla.	1644, 1648
Stoltenberg, Dr. Carl, forestry department head, Iowa State University, Ames, Iowa	524
Stone, Walter D., president, American Association of Zoological Parks & Aquariums	1834
Symington, Hon. Stuart, U.S. Senator from Missouri	1871
Talbot, James G., vice president, Bellingham Cold Storage Co., Bellingham, Wash.	1168
Thomas, Donald, Lewiston, Idaho, Chamber of Commerce	1359
Thurmond, Hon. Strom, U.S. Senator from South Carolina	1355, 1741
Towell, William E., director, Missouri Conservation Commission	1705
Tudor, Dr. William, Southern Illinois University	1620
Udall, Hon. Morris K., U.S. Representative from Arizona	954
Verhoeven, Leon A., executive director, Pacific Marine Fisheries Commission, Portland, Oreg.	1208, 1235
Watson, Frank B., Jr., Fort Myers, Fla.	829
Welsh, William E., executive director, National Reclamation Association	1595
Western Association of State Game & Fish Commissioners	1846
Wible, Ralph C., chairman, Legislative Committee, National Association of State Foresters	1661
Williams, George B., Nelio Chemicals Division, Union Bag-Camp Paper Corp., Jacksonville, Fla.	856
Williams, Hon. Harrison A., Jr., U.S. Senator from New Jersey	1819, 1872
Wilm, Harold G., conservation commissioner, State of New York	1836
Wilzbacher, William, Evansville, Ind.	1832
Wolff, Richard C., president, National Association of Marine Angling Clubs, Inc.	1820
Woodward, Harry R., director, Colorado Game, Fish, and Parks Department	1725
Woodworth, John R., director, Fish and Game Department, State of Idaho, Boise, Idaho	1363
Young, Hon. Milton R., U.S. Senator from North Dakota	1815

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