

Y4  
. In 8/13

1040

89 Y4  
In 8/13

In 8

# FEASIBILITY INVESTIGATIONS

GOVERNMENT  
Storage

## HEARINGS BEFORE THE SUBCOMMITTEE ON WATER AND POWER RESOURCES

## OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

SECOND SESSION

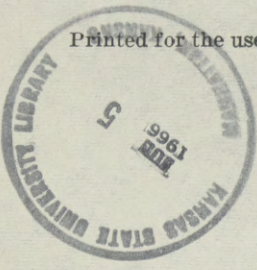
ON

### S. 3034

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR  
TO ENGAGE IN FEASIBILITY INVESTIGATIONS OF CERTAIN  
WATER RESOURCE DEVELOPMENT PROPOSALS

MARCH 28 AND APRIL 25, 1966

Printed for the use of the Committee on Interior and Insular Affairs



U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1966

63-348



100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110

44  
1/8 11  
In 8

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

HENRY M. JACKSON, Washington, *Chairman*

CLINTON P. ANDERSON, New Mexico  
ALAN BIBLE, Nevada  
FRANK CHURCH, Idaho  
ERNEST GRUENING, Alaska  
FRANK E. MOSS, Utah  
QUENTIN N. BURDICK, North Dakota  
CARL HAYDEN, Arizona  
GEORGE McGOVERN, South Dakota  
GAYLORD NELSON, Wisconsin  
LEE METCALF, Montana

THOMAS H. KUCHEL, California  
GORDON ALLOTT, Colorado  
LEN B. JORDAN, Idaho  
MILWARD L. SIMPSON, Wyoming  
PAUL J. FANNIN, Arizona

JERRY T. VERKLER, *Staff Director*  
STEWART FRENCH, *Chief Counsel*  
E. LEWIS REID, *Minority Counsel*

SUBCOMMITTEE ON WATER AND POWER RESOURCES

CLINTON P. ANDERSON, New Mexico, *Chairman*

HENRY M. JACKSON, Washington  
FRANK CHURCH, Idaho  
FRANK E. MOSS, Utah  
QUENTIN N. BURDICK, North Dakota  
CARL HAYDEN, Arizona

THOMAS H. KUCHEL, California  
GORDON ALLOTT, Colorado  
LEN B. JORDAN, Idaho

II



## CONTENTS

---

	Page
S. 3034-----	1
Amendment intended to be proposed by Mr. Mundt-----	7
Executive communication-----	7

### STATEMENTS

Bennett, Hon. Wallace F., a U. S. Senator from the State of Utah-----	14
Bronn, Carl, executive director, National Reclamation Association-----	46
Church, Hon. Frank, and Jordan, Hon. Len B., U.S. Senators from the State of Idaho, joint statement-----	20
Dominy, Floyd E., Commissioner, Bureau of Reclamation, accompanied by Gilbert Stamm, Assistant Commissioner; Daniel McCarthy, Chief, Project Development Division, Bureau of Reclamation; and Jim Casey, Assistant Chief, Project Development Division-----	47
Holum, Hon. Kenneth, Assistant Secretary of the Interior for Water and Power, accompanied by Floyd E. Dominy, Bureau of Reclamation; Gilbert Stamm, Assistant Commissioner for Reclamation; Daniel V. McCarthy, Chief, and Jim T. Casey, Assistant Chief, Division of Project Development, Department of the Interior-----	25
Mundt, Hon. Karl E., a U.S. Senator from the State of South Dakota---	17
Young, Hon. Milton R., a U.S. Senator from the State of North Dakota--	22

### COMMUNICATIONS

Billington, Ken, Washington Public Utility Districts' Association: Letter to Hon. Henry M. Jackson, U.S. Senate, dated March 24, 1966-----	81
Gruening, Hon. Ernest, a U.S. Senator from the State of Alaska: Letter to Hon. Clinton P. Anderson, chairman, Water and Power Resources Subcommittee, dated April 6, 1966-----	24
McGovern, Hon. George, a U.S. Senator from the State of South Dakota: Letter to Hon. Clinton P. Anderson, chairman, Water and Power Resources Subcommittee, dated March 25, 1966-----	19

### ADDITIONAL INFORMATION

Appropriations, irrigation allocations, and irrigable acres for the past 10 years (table)-----	51
Investigations prior to authorization, chapter 2.2 of Bureau of Reclamation manual-----	71
Presently authorized reclamation projects, table of costs-----	48
Reclamation complements the food and Agriculture program-----	53



## FEASIBILITY INVESTIGATIONS

MONDAY, MARCH 28, 1966

U.S. SENATE,  
SUBCOMMITTEE ON WATER AND  
POWER RESOURCES OF THE COMMITTEE  
ON INTERIOR AND INSULAR AFFAIRS,  
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 3110, New Senate Office Building, Senator Clinton P. Anderson presiding. Present: Senators Anderson, Jackson, Church, Burdick, Metcalf, and Jordan of Idaho.

Also present: Jerry T. Verkler, staff director; Stewart French, chief counsel; Roy M. Whitacre, professional staff member; Frederick O. Frederickson, special counsel; Ellery Fosdick, consultant; and E. Lewis Reid, minority counsel.

Senator ANDERSON. The Water and Power Resources Subcommittee meets this morning to consider and take testimony on S. 3034, a bill to authorize the Secretary of the Interior to engage in feasibility investigations of certain water resources development proposals.

Section 8 of Public Law 89-72, the Federal Water Recreation Act, requires that the Secretary of the Interior secure congressional authority before initiating or continuing any feasibility study for any water resource project after July 1, 1966.

In response, the Secretary, on March 2, 1966, submitted to the Congress his proposal to implement the requirements of the 1965 act.

In anticipation of these hearings, every Senator in the affected States was sent a copy of the executive communication containing the text of the bill and the explanation, including the list of the projects considered in each State.

If the Department has failed to include all of the worthy water projects or has included projects that any Member of the Senate feels should not be included, the committee will be happy to have any comments in this regard.

Before calling our first witness, I will insert at this point in the record a copy of the bill and the official position of the Department of the Interior. There will also be inserted a copy of the amendment proposed by our colleague, Senator Mundt, providing for the inclusion of two South Dakota studies in the program.

(The documents referred to follow:)

[S. 3034, 89th Cong., 2d sess.]

A BILL To authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource development proposals

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Secretary of the Interior is hereby authorized—

(a) to perform such additional analysis and studies as may be required on the following proposals which are pending before the Congress:

## FEASIBILITY INVESTIGATIONS

## Region 1

Chief Joseph Dam project, Chelan division, Manson unit, along Lake Chelan in north-central Washington;  
 Columbia Basin project, third powerplant, on the Columbia River at Grand Coulee Dam in Washington;  
 Rogue River Basin project, Merlin division, on Jumpoff Joe Creek, a tributary of the Rogue River, in southwestern Oregon;  
 Tualatin project, first phase, on the Tualatin River, near the city of Portland, Oregon;  
 Walla Walla project, Touchet division, on the Touchet River in southeastern Washington;  
 Yakima project, Kennewick division extension, near the mouth of the Yakima River in south-central Washington.

## Region 3

Lower Colorado River Basin project, in the Lower Colorado River Basin in Arizona, California, New Mexico, Nevada, and Utah.

## Region 5

Canton project on the Canadian River below the existing Canton Reservoir in northwestern Oklahoma;  
 Columbus Bend project on the Lower Colorado River Basin in Texas;  
 Palmetto Bend project on the Lavaca and Navidad Rivers in Texas.

## Region 7

Missouri River Basin project, Midstate division, on the north side of the Platte River in central Nebraska;  
 Missouri River Basin project, North Loup division, on the North Loup and Loup Rivers in east-central Nebraska; and  
 (b) to complete his analysis and studies and to prepare and process reports on the following proposals, which he anticipates will be completed or substantially completed on or before June 30, 1966:

## Region 1

Challis project, Challis Creek division, on Challis Creek in southern Idaho;  
 Rathdrum Prairie project, Prairie division, East Greenacres unit in Idaho, along the Idaho-Washington State line east of Spokane, Washington;  
 Rogue River Basin project, Illinois Valley division, on the Illinois River, a tributary of the Rogue River, in southwestern Oregon;  
 Southwest Idaho water development project, Mountain Home division, in the Snake River Basin near the cities of Boise and Mountain Home, Idaho;  
 Umpqua River project, Olalla division, on Olalla and Lookingglass Creeks in the south Umpqua Basin in southwestern Oregon;  
 Upper Snake River project; upper Star Valley division, on Salt River and Cow Creek, near the town of Afton, Wyoming;  
 Willamette River project, Monmouth-Dallas division, on the west side of the Willamette River in the vicinity of Monmouth and Dallas, Oregon;  
 Willamette River project, Red Prairie division, along the South Yamhill River near the town of Sheridan, Oregon;  
 Yakima project, Bumping Lake enlargement, on Bumping River in the Yakima River Basin in Washington.

## Region 2

Central Valley project, Cosumnes River division, initial phase, in and adjacent to the Cosumnes River Basin east of Sacramento, California;  
 Central Valley project, Delta division, peripheral canal, in the Sacramento-San Joaquin Delta in California;  
 Central Valley project, Delta division, Kellogg unit, south of the city of Antioch, California;  
 Central Valley project, east side division, initial phase, on the east side of the San Joaquin Valley from the American River on the north to the foothills of the Tehachapi Mountains south of the Kern River;

Central Valley project, Sacramento River division, West Sacramento canal unit, on the west side of the Sacramento River Valley and in the Putah Creek Basin in California;

Central Valley project, San Felipe division, in the Santa Clara and Pajaro River Basins in the central coastal area of California;

Sespe Creek project, on the Santa Clara River and tributaries in southern California;

Walker River project on the Walker River in west-central California and east-central Nevada.

#### Region 4

Bear River project, first phase, on the Bear River and its tributaries in north-central Utah and southeastern Idaho.

#### Region 5

Chikaskia project on the Chikaskia River in south-central Kansas and north-central Oklahoma;

Cuero project on the Guadalupe River in south-central Texas;

Liberty Bottoms project on the Red River below Denison Dam in south-central Oklahoma;

Mountain Park project in the vicinity of Altus, Oklahoma;

San Luis Valley project, Closed Basin division, in the Rio Grande Basin in south-central Colorado.

#### Region 6

Missouri River Basin project, James division, Oahe unit (exclusive of Mitchell area), involving the diversion of water from the existing Oahe Reservoir into the James River Valley;

Missouri River Basin project, South Dakota pumping division, Tower, Greenwood and Yankton units, on the Missouri River in southeastern South Dakota;

Missouri River Basin project, South Dakota pumping division, Wagner unit on the Missouri River in the vicinity of Fort Randall Dam in southeastern South Dakota;

Missouri River Basin project, Three-Forks division, Jefferson and Whitehall units on the Big Hole and Jefferson Rivers above Canyon Ferry Dam in southwestern Montana;

Missouri River Basin project, Three-Forks division, West Bench unit, on the Big Hole River in southwestern Montana near the town of Dillon;

Missouri River Basin project, White division, Pine Ridge unit, on the White River in southwestern South Dakota.

#### Region 7

Mirage Flats project on the upper Niobrara River near Hay Springs, Nebraska.

Missouri River Basin project, Cedar Rapids division, on the Cedar and Loup Rivers near Spalding, Nebraska;

Missouri River Basin project, lower Niobrara division, O'Neill unit, on the lower Niobrara River in north-central Nebraska;

Missouri River Basin project, Smoky Hill division, Ellis unit, on Big Creek in west-central Kansas;

Missouri River Basin project, South Platte division, Narrows Unit, on the South Platte River near Fort Morgan, Colorado.

#### Alaska

Devil Canyon project, on the Susitna River about midway between the cities of Anchorage and Fairbanks, Alaska;

Sec. 2. The Secretary is authorized to continue feasibility studies on the following proposals, which are presently under study and which will require further study before completion:

#### Region 1

Burnt River project, Dark Canyon division, on the Burnt River in west-central Oregon;

Chief Joseph Dam project, Okanogan-Similkameen division, Okanogan unit, on the Okanogan River in north-central Washington;

Deschutes project, Central division, in the Deschutes and Crooked River Basins in central Oregon;

Flathead River project, encompassing the Flathead River Basin in northwestern Montana;

Grand Ronde project on the Grande Ronde River in northeastern Oregon;

Rogue River Basin project, Applegate Valley division, on Applegate Creek, a tributary of the Rogue River, near the city of Grants Pass, Oregon;

Rogue River Basin project, Medford division, on the Rogue River in the vicinity of the town of Medford, Oregon;

Southwest Idaho water development project, Garden Valley division, along the Payette River and in the general vicinity of Boise, Idaho;

Southwest Idaho water development project, Weiser River division, in the Weiser River Basin in Idaho.

Umatilla Basin project, encompassing the Umatilla River Basin, centering near the town of Pendleton, Oregon;

Upper Snake River project, American Falls Dam replacement on the Snake River near the city of American Falls, Idaho;

Upper Snake River project, Lynn Crandall division, on the Snake River below Palisades Dam in southern Idaho;

Upper Snake River project, Salmon Falls division, south of the Snake River, near the city of Twin Falls, Idaho;

Upper Snake River project, Snake Plains recharge division, encompassing the Snake River Plains area north of the Snake River in southern Idaho;

Walla Walla project, Marcus Whitman and Milton-Freewater divisions, in the Walla Walla River Basin in northeastern Oregon and southeastern Washington;

Willamette River project, Carlton division, on the Yamhill River in northwestern Oregon;

Willamette River project, Molalla division, on the Molalla and Pudding Rivers in northwestern Oregon;

Yakima project, Ahtanum unit, on Ahtanum Creek in the Yakima River Basin in Washington.

#### Region 2

Central Valley project, American River division, Placerville Ridge unit, between the South Fork American River and the North Fork Cosumnes River east of Sacramento, California;

Central Valley project, Cosumnes River division, Fair Play unit, on the Middle Fork Cosumnes River east of Sacramento, California;

Central Valley project, East Side division, ultimate phase, on the east side of the San Joaquin Valley from the American River on the north to the foothills of the Tehachapi Mountains south of the Kern River;

Central Valley project, Stanislaus River division, Sonora-Keystone unit, on the Stanislaus River in the general vicinity of Sonora, California;

Lompoc project on the lower Santa Ynez River in southern California;

North Coast project, Eel River division, English Ridge unit, on the upper Eel River and in the Putah Creek and adjacent areas north of San Francisco Bay, California;

North Coast project, Eel River division, Knights Valley unit in the Russian River Basin and adjacent areas north of San Francisco Bay, California;

North Coast project, Eel River division, ultimate phase, in the Eel River Basin in northwestern California with facilities for the diversion of excess water into the Central Valley Basin;

North Coast project, Lower Klamath River division, in the Lower Klamath River Basin in northwestern California with facilities for the diversion of excess water into the Central Valley Basin;

North Coast project, Lower Trinity River division (exclusive of Paskenta-Newville Reservoir), encompassing that portion of the Trinity River Basin below the existing Lewiston Dam of the Central Valley project, the upper portion of the Mad and Van Duzen Rivers and the west side tributaries of the Sacramento River in California;

North Coast project, lower Trinity River division, Paskenta-Newville Dam and Reservoir on Stony and Thomes Creeks in the Sacramento River Basin in California;

Ventura River project extension in the Ventura River Basin near Ventura, California;

Washoe project, Hope Valley division, on the Carson River in California and Nevada;

Washoe project, Newlands extension division, on the lower Carson River near the city of Fallon, Nevada.

## Region 3

Black River-Springerville-Saint Johns project on the Black River and Little Colorado River near Springerville and Saint Johns, Arizona;

Boulder Canyon project, All-American Canal system water salvage, Coachella division, on the Coachella Canal in southern California;

Boulder Canyon project, All-American Canal system water salvage, Imperial division, on the All-American Canal and the Imperial Valley distribution system in southern California;

Flagstaff-Williams project, near the cities of Flagstaff and Williams, Arizona;

Kingman project, on the Colorado River and near the city of Kingman, Arizona;

Moapa Valley pumping project in the Muddy River Basin in southern Nevada;

San Pedro-Santa Cruz project in the San Pedro and Santa Cruz River Basins in southeastern Arizona;

Upper Gila River project on the Gila River and its tributaries in western New Mexico and eastern Arizona.

## Region 4

Bear River project, second phase, on the Bear River and its tributaries in north-central Utah and southeastern Idaho;

Central Utah project, ultimate phase, Uintah unit, on the Whiterock and Uinta Rivers in northwestern Utah.

## Region 5

Brantley project on the Pecos River upstream from Carlsbad, New Mexico;

Cibolo project on Cibolo Creek in the San Antonio River Basin in Texas;

Eastern New Mexico water supply project in northeastern New Mexico;

Nueces River project on Frio River in the Nueces River Basin in the vicinity of Corpus Christi, Texas;

Portales project near the town of Portales in eastern New Mexico;

Retrop project on the North Fork of the Red River in the vicinity of the W. C. Austin project, Oklahoma;

Rio Grande water salvage project, New Mexico division, on the Rio Grande River between the Colorado-New Mexico State line, and the existing Caballo Reservoir;

Texas Basins project, encompassing the gulf coastal streams of Texas extending from the Sabine River on the north to the Rio Grande on the south.

## Region 6

Missouri River Basin project, Big Horn Basin division, Shoshone extension unit, Polecat Bench area, in northwestern Wyoming near the city of Powell;

Missouri River Basin project, Cannonball division, Mott unit, on the Cannonball River in southwestern North Dakota;

Missouri River Basin project, Helena-Great Falls division, Fort Benton unit, on the Missouri River in northcentral Montana near the town of Fort Benton;

Missouri River Basin project, Musselshell division, Lower Musselshell unit, on the lower reaches of the Musselshell River near the town of Mosby, Montana;

Missouri River Basin project, Powder division, Kaycee unit, on the Middle Fork and main stem of the Powder River in northeastern Wyoming;

Missouri River Basin project, Marias division, Marias-Milk unit, in the Marias and Milk River Basins in northcentral Montana;

Missouri River Basin project, South Dakota pumping division, Pollock-Herreid unit, on the Missouri River in north-central South Dakota;

Missouri River Basin project, Sun-Teton division, Sun-Teton unit, on the Sun and Teton Rivers in the vicinity of Great Falls, Montana;

Missouri River Basin project, Yellowstone division, Billings pump unit, at the city of Billings, Montana;

Missouri River Basin project, Yellowstone division, Cracker Box and Stipek units, along the Yellowstone River near the town of Glendive, Montana.

## Region 7

Missouri River Basin project, Blue division, Little Blue unit, along the Little Blue River in south-central Nebraska;

Missouri River Basin project, Blue division, Sunbeam unit, on the West Fork of the Big Blue River in southeastern Nebraska;

Missouri River Basin project, Laramie division, Wheatland unit, on the Laramie River in southeastern Wyoming;

Missouri River Basin project, Mount Evans division, Upper South Platte unit, on the South Platte River near the city of Denver, Colorado;

Missouri River Basin project, Oregon Trail division, La Prele unit, on La Prele Creek, near the town of Douglass, Wyoming.

#### Alaska

Lake Grace project on Grace Creek on Revillagigedo Island, Alaska;

Takatz Creek project on Takatz Creek on Baranof Island near Sitka, Alaska.

Sec. 3. The Secretary is authorized to engage in feasibility studies on—

(a) the following proposals, presently scheduled for initiation on or before June 30, 1967:

#### Region 1

Umpqua River project, Azalea division, on Cow Creek, a tributary of the Umpqua River in southwestern Oregon.

#### Region 2

North Coast project, Eureka division, encompassing the lower reaches of the Mad, Van Duzen, and Eel Rivers in northwestern California.

#### Region 3

Boulder Canyon project, All-American Canal system water salvage, East Mesa unit, on the East Mesa of the Imperial Valley in southern California;

Mojave River project in the Mojave River Basin in southern California;

Santa Margarita project on the Santa Margarita River in southern California.

#### Region 6

Missouri River Basin project, James division, Oahe unit, Mitchell section, near the city of Mitchell, South Dakota.

#### Region 7

Missouri River Basin project, Bostwick division, Scandia unit, near the town of Belleville in north-central Kansas;

Missouri River Basin project, Oregon Trail division, Glendo inundated water rights irrigation unit, near Glendo Reservoir in eastern Wyoming;

Missouri River Basin project, Smoky Hill division, Kanopolis unit on the Smoky Hill River below the existing Kanopolis Dam in central Kansas; and

(b) the following proposals, presently scheduled for initiation after June 30, 1967:

#### Region 1

Chehalis River project, Adna division, in the Upper Chehalis River Basin near the cities of Centralia and Chehalis, Washington;

Upper Owyhee project, Jordan Valley division, on Jordan Creek in the Upper Owyhee River Basin in southeastern Oregon and southwestern Idaho;

Upper Snake River project, Big Wood division, in southern Idaho in the Big Wood River Basin near the towns of Ketchum and Sun Valley;

Upper Snake River project, Oakley Fan division, south of the Snake River near Burley, Idaho;

Tualatin project, second phase, in the Tualatin River Basin twenty miles west of Portland, Oregon.

#### Region 2

Lake Tahoe project in the Lake Tahoe Basin in eastern California and western Nevada and the American River Basin in California.

#### Region 4

Colorado River Basin, power peaking capacity, in the Colorado River Basin in Arizona, Colorado, and Utah, and in the eastern part of Bonneville Basin along the Wasatch Mountains in Utah.

## Region 5

Mimbres project in the Mimbres River Basin in southwestern New Mexico.

## Region 6

Missouri River Basin project, North Dakota pumping division, Horsehead Flats and Winona units on the east side of the Missouri River in the general vicinity of Linton, North Dakota.

## Region 7

Missouri River Basin project, Elkhorn division, Highland unit, on the Upper Elkhorn River in northeastern Nebraska;

Missouri River Basin project, Solomon division, Glen Elder irrigation unit, on the Solomon River in the vicinity of Downs and Delphos, Kansas.

SEC. 4. The Secretary is authorized to engage in feasibility studies on additional proposals when and to the extent that the costs of such studies shall have been advanced by non-Federal sources.

---

[S. 3034, 89th Cong., 2d sess.]

AMENDMENT Intended to be proposed by Mr. MUNDT to S. 3034, a bill to authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource development proposals, viz: On page 16, following line 3, insert the following new paragraph:

"Missouri River Basin project, South Dakota pumping division, Grass Rope and Fort Thompson units on the Missouri River in the vicinity of the towns of Lower Brule and Fort Thompson, South Dakota."

(Amdt. No. 507)

---

U.S. DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE SECRETARY,  
Washington, D.C., March 2, 1966.

HON. HUBERT H. HUMPHREY,  
*President of the Senate,*  
Washington, D.C.

DEAR MR. PRESIDENT: Enclosed for your consideration is a draft of bill to authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource development proposals.

We recommend that this draft bill be referred to the appropriate committee and we recommend that it be enacted.

Section 8 of the Federal Water Project Recreation Act of July 9, 1965 (79 Stat. 217) provides:

"Effective on and after July 1, 1966, neither the Secretary of the Interior nor any bureau nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law, any other provision of law to the contrary notwithstanding."

Subsection 1(a) of the draft bill affects a number of proposals presently pending before the Congress. Feasibility investigations have already been completed to the extent normally required on the 12 projects in this subsection, legislation has been introduced to authorize construction of these proposals, hearings have been held by the appropriate subcommittees of the Interior and Insular Affairs Committees on most of them and, in certain instances committee reports have been filed. The subsection authorizes any additional work that may be required on those proposals.

Subsection 1(b) authorizes the Secretary of the Interior to perform such minor completion, review, processing, and subsequent reanalysis as may be required on 35 proposals which either are currently being reviewed and processed within the Executive Branch or upon which feasibility investigation work at the Regional level of the Bureau of Reclamation will be completed or substantially completed by June 30, 1966. For the most part, there is no continuing requirement for investigation funds for prosecution of work on the proposals in this subsection. The predominant activity remaining to be completed in connection with the proposals in this category is review and processing at the agency and Departmental level to permit presentation of the proposals to the Congress for authorization.

Section 2 grants authority to the Secretary to continue to engage in feasibility investigations on 67 potential project proposals for which funds have been made available through the Public Works Appropriation Act for fiscal year 1966. In most cases these investigations were undertaken only after the completion of a thorough reconnaissance investigation which established that the prospects were favorable for the development of feasible and justifiable plans. In other cases the feasibility investigations were undertaken without formal reconnaissance investigations where the combination of overwhelming need and apparent justification, based on reasoned judgment, indicated excellent prospects for the development of feasible and justifiable plans. Substantial local interest and support has also been demonstrated for each of the investigations listed in Section 2 so that the likelihood of the Department's being unable to secure appropriate repayment arrangements has been minimized.

Feasibility investigations on these potential projects would be completed at the regional level of the Bureau of Reclamation some time between late fiscal 1967 and 1972, if current program schedules are maintained. The potential projects represented by these investigations present a balanced program for the several river basins of the Reclamation states and Alaska, and will be urgently needed by the time the plans can be developed, authorized, and implemented. Assuming no lapse in meeting program schedules or extraordinary delay in authorization of construction and funding, the feasibility investigations upon which continuing authority is sought in Section 2 will not, for the most part, be translated into performing Reclamation projects before the 1980's. If the Reclamation states are to be enabled to meet their growth needs for water resource development at that time, it appears essential that the continuing program of feasibility investigations provided by Section 2 should be authorized at this time.

Section 3 of the draft bill authorizes the Secretary of the Interior to undertake feasibility investigations not currently under way or funded. Subsection 3(a) authorizes 9 new feasibility investigations for which funds have been requested in the President's Budget for fiscal year 1967. Subsection 3(b) authorizes 11 new investigations currently scheduled to be initiated after fiscal year 1967. As in the case of those investigations currently under way, information now available indicates that prospects are favorable for developing feasible and justifiable plans for those proposals and that local interest and support have been substantial.

We wish to point out that section 2 of Public Law 485, 84th Congress, 2d Session, authorizing the Colorado River Storage Project and Participating Projects, directed the Secretary of the Interior to give priority to the completion of planning on certain listed potential participating projects. Similarly, Public Law 87-590, authorizing the Fryingpan-Arkansas Project, directed the Secretary to complete the planning on the potential Basalt Project in Colorado as a participating project under the terms of the act authorizing the Colorado River Storage Project and Participating Projects. We have assumed that the feasibility studies of these "priority projects" have been specifically authorized by the Congress within the intent of section 8 of Public Law 89-72. For this reason they have not been listed in the draft bill.

Section 4 of the draft bill authorizes the Secretary to undertake additional feasibility studies to the extent that those studies are financed with contributions from the States or local interests. Over the years the Congress, acting through its Appropriations Committees, has strongly encouraged the financial participation of State and local interests in the planning program of the Bureau of Reclamation. This attitude is reflected in the annual appropriation acts covering Bureau activities which have, for many years, contained a proviso substantially stating that "none of this appropriation shall be used for more than one-half of the cost of an investigation requested by a State, municipality or other interest." Each year the Bureau receives a sizable amount of contributed funds, either to accelerate going work or initiate new investigations.

The principal incentive to financial participation by State or local interests has been that the initiation of new investigations has been permitted promptly upon receipt of the contributed funds. The alternative would have been to seek Federal financing through normal budgetary channels, entailing a delay of one to two years. Section 8 of Public Law 89-72, however, requires specific legislative authority for those feasibility studies requested by the States and local interests even though contributed funds have been made available for the work. Unless legislative authority already exists, section 8 would preclude undertaking these cooperative studies until the authority has been obtained. This removes much of the incentive for local financial participation. Certainly the result appears to be contrary to the intent of the Federal Water Project Recreation Act which

provides for local participation in water resource developments, and the modification which we suggest in section 3 would be consistent with that Act.

The Bureau of the Budget has advised that there is no objection to the presentation of this proposed legislation from the standpoint of the Administration's program.

Sincerely yours,

KENNETH HOLUM,  
*Assistant Secretary of the Interior.*

**A BILL** To authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource development proposals

*Be it enacted by the Senate and House of Representatives of the United States of American in Congress assembled,* That the Secretary of the Interior is hereby authorized (a) to perform such additional analysis and studies as may be required on the following proposals which are pending before the Congress:

REGION 1

Chief Joseph Dam Project, Chelan Division, Manson Unit, along Lake Chelan in north-central Washington;  
Columbia Basin Project, Third Powerplant, on the Columbia River at Grand Coulee Dam in Washington;  
Rogue River Basin Project, Merlin Division, on Jumpoff Joe Creek, a tributary of the Rogue River, in southwestern Oregon;  
Tualatin Project, First Phase, on the Tualatin River, near the city of Portland, Oregon;  
Walla Walla Project, Touchet Division, on the Touchet River in southeastern Washington;  
Yakima Project, Kennewick Division Extension, near the mouth of the Yakima River in south-central Washington.

REGION 3

Lower Colorado River Basin Project, in the Lower Colorado River Basin in Arizona, California, New Mexico, Nevada, and Utah.

REGION 5

Canton Project on the Canadian River below the existing Canton Reservoir in northwestern Oklahoma;  
Columbus Bend Project on the lower Colorado River Basin in Texas;  
Palmetto Bend Project on the Lavaca and Navidad Rivers in Texas.

REGION 7

Missouri River Basin Project, Mid-State Division, on the north side of the Platte River in central Nebraska;  
Missouri River Basin Project, North Loup Division, on the North Loup and Loup Rivers in east-central Nebraska; and  
(b) to complete his analysis and studies and to prepare and process reports on the following proposals, which he anticipates will be completed or substantially completed on or before June 30, 1966:

REGION 1

Challis Project, Challis Creek Division, on Challis Creek in southern Idaho;  
Rathdrum Prairie Project, Prairie Division, East Greenacres Unit in Idaho, along the Idaho-Washington State line east of Spokane, Washington;  
Rogue River Basin Project, Illinois Valley Division, on the Illinois River, a tributary of the Rogue River, in southwestern Oregon;  
Southwest Idaho Water Development Project, Mountain Home Division, in the Snake River Basin near the cities of Boise and Mountain Home, Idaho;  
Umpqua River Project, Olalla Division, on Olalla and Lookingglass Creeks in the south Umpqua Basin in southwestern Oregon;  
Upper Snake River Project, Upper Star Valley Division, on Salt River and Cow Creek, near the town of Afton, Wyoming;  
Willamette River Project, Monmouth-Dallas Division, on the west side of the Willamette River in the vicinity of Monmouth and Dallas, Oregon;

Willamette River Project, Red Prairie Division, along the South Yamhill River near the town of Sheridan, Oregon;

Yakima Project, Bumping Lake Enlargement, on Bumping River in the Yakima River Basin in Washington.

#### REGION 2

Central Valley Project, Cosumnes River Division, Initial Phase, in and adjacent to the Cosumnes River Basin east of Sacramento, California;

Central Valley Project, Delta Division, Peripheral Canal, in the Sacramento, San Joaquin Delta in California;

Central Valley Project, Delta Division, Kellogg Unit, south of the city of Antioch, California;

Central Valley Project, East Side Division, Initial Phase, on the east side of the San Joaquin Valley from the American River on the north to the foothills of the Tehachapi Mountains south of the Kern River;

Central Valley Project, Sacramento River Division, West Sacramento Canal Unit, on the west side of the Sacramento River Valley and in the Putah Creek Basin in California;

Central Valley Project, San Felipe Division, in the Santa Clara and Pajaro River Basins in the central coastal area of California;

Sespe Creek Project, on the Santa Clara River and tributaries in southern California;

Walker River Project on the Walker River in west-central California and east-central Nevada.

#### REGION 4

Bear River Project, First Phase, on the Bear River and its tributaries in north-central Utah and southeastern Idaho.

#### REGION 5

Chikaskia Project on the Chikaskia River in south-central Kansas and north-central Oklahoma;

Cuero Project on the Guadalupe River in south-central Texas;

Liberty Bottoms Project on the Red River below Denison Dam in south-central Oklahoma;

Mountain Park Project in the vicinity of Altus, Oklahoma;

San Luis Valley Project, Closed Basin Division, in the Rio Grande Basin in south-central Colorado.

#### REGION 6

Missouri River Basin Project, James Division, Oahe Unit (exclusive of Mitchell area), involving the diversion of water from the existing Oahe Reservoir into the James River Valley;

Missouri River Basin Project, South Dakota Pumping Division, Tower, Greenwood and Yankton Units, on the Missouri River in southeastern South Dakota;

Missouri River Basin Project, South Dakota Pumping Division, Wagner Unit on the Missouri River in the vicinity of Fort Randall Dam in southeastern South Dakota;

Missouri River Basin Project, Three-Forks Division, Jefferson and Whitehall Units on the Big Hole and Jefferson Rivers above Canyon Ferry Dam in southwestern Montana;

Missouri River Basin Project, Three-Forks Division, West Bench Unit, on the Big Hole River in southwestern Montana near the town of Dillon;

Missouri River Basin Project, White Division, Pine Ridge Unit, on the White River in southwestern South Dakota.

#### REGION 7

Mirage Flats Project on the upper Niobrara River near Hay Springs, Nebraska;

Missouri River Basin Project, Cedar Rapids Division, on the Cedar and Loup Rivers near Spalding, Nebraska;

Missouri River Basin Project, Lower Niobrara Division, O'Neill Unit, on the lower Niobrara River in north-central Nebraska;

Missouri River Basin Project, Smoky Hill Division, Ellis Unit, on Big Creek in west-central Kansas;

Missouri River Basin Project, South Platte Division, Narrows Unit, on the South Platte River near Fort Morgan, Colorado.

## ALASKA

Devil Canyon Project, on the Susitna River about midway between the cities of Anchorage and Fairbanks, Alaska.

SEC. 2. The Secretary is authorized to continue feasibility studies on the following proposals, which are presently under study and which will require further study before completion:

## REGION 1

Burnt River Project, Dark Canyon Division, on the Burnt River in west-central Oregon;

Chief Joseph Dam Project, Okanogan-Similkameen Division, Okanogan Unit, on the Okanogan River in north-central Washington;

Deschutes Project, Central Division, in the Deschutes and Crooked River Basins in central Oregon;

Flathead River Project, encompassing the Flathead River Basin in north-western Montana;

Grande Ronde Project on the Grande Ronde River in northeastern Oregon;

Rogue River Basin Project, Applegate Valley Division, on Applegate Creek, a tributary of the Rogue River, near the city of Grants Pass, Oregon;

Rogue River Basin Project, Medford Division, on the Rogue River in the vicinity of the town of Medford, Oregon;

Southwest Idaho Water Development Project, Garden Valley Division, along the Payette River and in the general vicinity of Boise, Idaho;

Southwest Idaho Water Development Project, Weiser River Division, in the Weiser River Basin in Idaho;

Umatilla Basin Project, encompassing the Umatilla River Basin, centering near the town of Pendleton, Oregon;

Upper Snake River Project, American Falls Dam Replacement on the Snake River near the city of American Falls, Idaho;

Upper Snake River Project, Lynn Crandall Division, on the Snake River below Palisades Dam in southern Idaho;

Upper Snake River Project, Salmon Falls Division, south of the Snake River, near the city of Twin Falls, Idaho;

Upper Snake River Project, Snake Plains Recharge Division, encompassing the snake River Plains area north of the Snake River in southern Idaho;

Walla Walla Project, Marcus Whitman and Milton-Freewater Divisions, in the Walla Walla River Basin in northeastern Oregon and southeastern Washington;

Willamette River Project, Carlton Division, on the Yamhill River in north-western Oregon;

Willamette River Project, Molalla Division, on the Molalla and Pudding Rivers in northwestern Oregon;

Yakima Project, Ahtanum Unit, on Ahtanum Creek in the Yakima River Basin in Washington.

## REGION 2

Central Valley Project, American River Division, Placerville Ridge Unit, between the South Fork American River and the North Fork Cosumnes River east of Sacramento, California;

Central Valley Project, Cosumnes River Division, Fair Play Unit, on the Middle Fork Cosumnes River east of Sacramento, California;

Central Valley Project, East Side Division, Ultimate Phase, on the east side of the San Joaquin Valley from the American River on the north to the foothills of the Tehachapi Mountains south of the Kern River;

Centr 1 Valley Project, Stanislaus River Division, Sonora-Keystone Unit, on the Stanislaus River in the general vicinity of Sonora, California;

Lompac Project on the lower Santa Ynez River in southern California;

North Coast Project, Eel River Division, English Ridge Unit, on the upper Eel River and in the Putah Creek and adjacent areas north of San Francisco Bay, California;

North Coast Project, Eel River Division, Knights Valley Unit in the Russian River Basin and adjacent areas north of San Francisco Bay, California;

North Coast Project, Eel River Division, Ultimate Phase, in the Eel River Basin in northwestern California with facilities for the diversion of excess water into the Central Valley Basin;

North Coast Project, Lower Klamath River Division, in the Lower Klamath River Basin in northwestern California with facilities for the diversion of excess water into the Central Valley Basin;

North Coast Project, Lower Trinity River Division, (exclusive of Paskenta-Newville Reservoir) encompassing that portion of the Trinity River Basin below the existing Lewiston Dam of the Central Valley Project, the upper portion of the Mad and Van Duzen Rivers and the west side tributaries of the Sacramento River in California;

North Coast Project, Lower Trinity River Division, Paskenta-Newville Dam and Reservoir on Stony and Thomes Creek in the Sacramento River Basin in California;

Ventura River Project Extension in the Ventura River Basin near Ventura, California;

Washoe Project, Hope Valley Division, on the Carson River in California and Nevada;

Washoe Project, Newlands Extension Division, on the lower Carson River near the city of Fallon, Nevada.

#### REGION 3

Black River-Springerville-St. Johns Project on the Black River and Little Colorado River near Springerville and St. Johns, Arizona;

Boulder Canyon Project, All-American Canal System Water Salvage, Coachella Division, on the Coachella Canal in southern California;

Boulder Canyon Project, All-American Canal System Water Salvage, Imperial Division, on the All-American Canal and the Imperial Valley distribution system in southern California;

Flagstaff-Williams Project, near the cities of Flagstaff and Williams, Arizona;

Kingman Project, on the Colorado River and near the city of Kingman, Arizona;

Moapa Valley Pumping Project in the Muddy River Basin in southern Nevada;

San Pedro-Santa Cruz Project in the San Pedro and Santa Cruz River Basins in southeastern Arizona;

Upper Gila River Project on the Gila River and its tributaries in western New Mexico and eastern Arizona.

#### REGION 4

Bear River Project, Second Phase, on the Bear River and its tributaries in north-central Utah and southeastern Idaho;

Central Utah Project, Ultimate Phase, Uintah Unit, on the Whiterock and Uinta Rivers in northwestern Utah.

#### REGION 5

Brantley Project on the Pecos River upstream from Carlsbad, New Mexico;

Cibolo Project on Cibolo Creek in the San Antonio River Basin in Texas;

Eastern New Mexico Water Supply Project in northeastern New Mexico;

Nueces River Project on Frio River in the Nueces River Basin in the vicinity of Corpus Christi, Texas;

Portales Project near the town of Portales in eastern New Mexico;

Retro Project on the North Fork of the Red River in the vicinity of the W. C. Austin Project, Oklahoma;

Rio Grande Water Salvage Project, New Mexico Division, on the Rio Grande River between the Colorado-New Mexico state line, and the existing Caballo Reservoir;

Texas Basins Project, encompassing the Gulf Coastal streams of Texas extending from the Sabine River on the north to the Rio Grande on the south.

#### REGION 6

Missouri River Basin Project, Big Horn Basin Division, Shoshone Extension Unit, Polecat Bench Area, in northwestern Wyoming near the city of Powell;

Missouri River Basin Project, Cannonball Division, Mott Unit, on the Cannonball River in southwestern North Dakota;

Missouri River Basin Project, Helena-Great Falls Division, Fort Benton Unit, on the Missouri River in north-central Montana near the town of Fort Benton;

Missouri River Basin Project, Musselshell Division, Lower Musselshell Unit, on the lower reaches of the Musselshell River near the town of Mosby, Montana;

Missouri River Basin Project, Powder Division, Kaycee Unit, on the Middle Fork and main stem of the Powder River in northeastern Wyoming;

Missouri River Basin Project, Marias Division, Marias-Milk Unit, in the Marias and Milk River Basins in north-central Montana;

Missouri River Basin Project, South Dakota Pumping Division, Pollock-Herreid Unit, on the Missouri River in north-central South Dakota;

Missouri River Basin Project, Sun-Teton Division, Sun-Teton Unit, on the Sun and Teton Rivers in the vicinity of Great Falls, Montana;

Missouri River Basin Project, Yellowstone Division, Billings Pump Unit, at the city of Billings, Montana;

Missouri River Basin Project, Yellowstone Division, Cracker Box and Stipek Units, along the Yellowstone River near the town of Glendive, Montana.

## REGION 7

Missouri River Basin Project, Blue Division, Little Blue Unit, along the Little Blue River in south-central Nebraska;

Missouri River Basin Project, Blue Division, Sunbeam Unit, on the West Fork of the Big Blue River in southeastern Nebraska;

Missouri River Basin Project, Laramie Division, Wheatland Unit, on the Laramie River in southeastern Wyoming;

Missouri River Basin Project, Mount Evans Division, Upper South Platte Unit on the South Platte River near the city of Denver, Colorado;

Missouri River Basin Project, Oregon Trail Division, La Prele Unit, on La Prele Creek, near the town of Douglass, Wyoming.

## ALASKA

Lake Grace Project on Grace Creek on Revillagigedo Island, Alaska;

Takatz Creek Project on Takatz Creek on Baranof Island near Sitka, Alaska.

SEC. 3. The Secretary is authorized to engage in feasibility studies on (a) the following proposals, presently scheduled for initiation on or before June 30, 1967:

## REGION 1

Umpqua River Project, Azalea Division, on Cow Creek, a tributary of the Umpqua River in southwestern Oregon.

## REGION 2

North Coast Project, Eureka Division, encompassing the lower reaches of the Mad, Van Duzen, and Eel Rivers in northwestern California.

## REGION 3

Boulder Canyon Project, All-American Canal System Water Salvage, East Mesa Unit, on the East Mesa of the Imperial Valley in southern California;

Mojave River Project in the Mojave River Basin in southern California;

Santa Margarita Project on the Santa Margarita River in southern California.

## REGION 6

Missouri River Basin Project, James Division, Oahe Unit, Mitchell Section, near the city of Mitchell, South Dakota.

## REGION 7

Missouri River Basin Project, Bostwick Division, Scandia Unit, near the town of Belleville in north-central Kansas;

Missouri River Basin Project, Oregon Trail Division, Glendo Inundated Water Rights Irrigation Unit, near Glendo Reservoir in eastern Wyoming;

Missouri River Basin Project, Smoky Hill Division, Kanopolis Unit on the Smoky Hill River below the existing Kanopolis Dam in central Kansas; and

(b) the following proposals, presently scheduled for initiation after June 30, 1967:

## REGION 1

Chehalis River Project, Adma Division, in the Upper Chehalis River Basin near the cities of Centralia and Chehalis, Washington;

Upper Owyhee Project, Jordan Valley Division, on Jordan Creek in the Upper Owyhee River Basin in southeastern Oregon and southwestern Idaho;

Upper Snake River Project, Big Wood Division, in southern Idaho in the Big Wood River Basin near the towns of Ketchum and Sun Valley;

Upper Snake River Project, Oakley Fan Division, south of the Snake River near Burley, Idaho;

Tualatin Project, Second Phase, in the Tualatin River Basin 20 miles west of Portland, Oregon.

REGION 2

Lake Tahoe Project in the Lake Tahoe Basin in eastern California and western Nevada and the American River Basin in California.

REGION 4

Colorado River Basin, Power Peaking Capacity, in the Colorado River Basin in Arizona, Colorado, and Utah, and in the eastern part of Bonneville Basin along the Wasatch Mountains in Utah.

REGION 5

Mimbres Project in the Mimbres River Basin in southwestern New Mexico.

REGION 6

Missouri River Basin Project, North Dakota Pumping Division, Horsehead Flats and Winona Units on the east side of the Missouri River in the general vicinity of Linton, North Dakota.

REGION 7

Missouri River Basin Project, Elkhorn Division, Highland Unit, on the Upper Elkhorn River in northeastern Nebraska;

Missouri River Basin Project, Solomon Division, Glen Elder Irrigation Unit, on the Solomon River in the vicinity of the towns of Downs and Delphos, Kansas.

SEC. 4. The Secretary is authorized to engage in feasibility studies on additional proposals when and to the extent that the costs of such studies shall have been advanced by non-Federal sources.

Senator ANDERSON. Our first witness this morning is Senator Bennett.

**STATEMENT OF HON. WALLACE F. BENNETT, U.S. SENATOR  
FROM THE STATE OF UTAH**

Senator BENNETT. I have a very brief statement. First I would like to suggest an amendment to section 3(a) of the legislation, to add to the projects being considered under that section the Ute Indian unit developing water tributaries to the Colorado River in northeastern and north-central Utah, and another amendment to section 3(b) adding to region 4 the following land: On page 17, line 15 of the bill add these words:

The San Juan County Development, the Colorado River Basin in southeastern Utah; the Price River Development, the Price River Basin in eastern Utah; the Grand County Development, the Colorado River Basin in southeastern Utah; the Ute Indian Unit Extension, Central Utah Project, Ultimate Phase; and the Gray Canyon Project, Green River in eastern Utah.

The Ute Indian project has already been studied by the Bureau. I understand it has money in its budget to develop the feasibility project among those that are scheduled for initiation on or before June 30, 1967.

Regarding the others which I recommend as amendments to section 3(b), it appears that these investigations could not be undertaken until 1968, and, therefore, I suggest that the feasibility projects for these proposals be included, since they fall in that category. That is in effect the purpose of my statement. I ask that it be included in the record in full.

(The statement referred to follows:)

## STATEMENT OF HON. WALLACE F. BENNETT, A U.S. SENATOR FROM THE STATE OF UTAH

## FEASIBILITY STUDY AMENDMENTS NEEDED

Mr. Chairman, I appreciate very much this opportunity to present a statement to this subcommittee today as it begins its consideration of the bill (S. 3034) to authorize the Secretary of Interior to engage in feasibility investigations of certain water resource development proposals.

In Utah a drop of water is almost as precious as a nugget of gold, and the state throughout its entire history has taken a deep interest in all matters pertaining to the development of water resources. Because of the foresight of many visionaries in the water field the state and the west can point with pride to the many, many fruits of their efforts in the form of reclamation projects large and small.

To accomplish these projects, obviously takes considerable time and study. The question of feasibility is almost always foremost in the minds of the planners.

The legislation being considered here today would clear the way for a number of studies in projects in various stages of their reclamation life-cycle.

Last year, Congress passed the Federal Water Project Recreation Act which, among other things, said that "effective on and after July 1, 1966, neither the Secretary of Interior, nor any bureau, nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law, and any other provision of law to the contrary notwithstanding."

Consequently, the distinguished chairman of the full Committee, Senator Jackson, has introduced S. 3034 which would authorize the feasibility report of a number of projects throughout the reclamation States.

In analyzing the legislation, I find that Sections 1 and 2 are adequate as far as Utah's various reclamation projects are concerned. Section 1 affects a number of proposals presently pending before the Congress, and Section 2 grants authority for feasibility studies of a number of projects for which funds have been made available through previous Public Works Appropriations.

I would like to say that I support the inclusion of the Bear River Project's first phase investigation on the Bear River as listed under Region 4 in both sections 1 and 2. In addition, under Section 2, I similarly support the feasibility study of the ultimate phase of the Central Utah Project's Uintah unit on the Whiterock and Uintah Rivers in northwestern Utah.

Section 3-a of the legislation would authorize the Secretary to engage in feasibility studies on proposals scheduled for initiation on or before June 30, 1967.

At this point I would like to recommend an amendment to the bill on line 21, page 15, with an insert for Region 4 as follows: "Ute Indian Unit, developing water tributaries to the Colorado River in Northeastern and North Central Utah."

Mr. Chairman, inasmuch as Section 3-a authorizes the feasibility studies for projects scheduled before June 30, 1967, it appears that we now have adequately defined the Ute Indian Unit. I understand that the Bureau of Reclamation budget contains sufficient funds for the feasibility investigations of this unit. A great deal of investigative work already has been accomplished by the Bureau of Reclamation in the area and the Ute Indian Unit has been defined as a separable unit. The time has now come for a feasibility study. In view of the necessary lead time and other considerations, it is none too soon to begin preparation of the feasibility report on this project.

Section 3-b of the legislation authorizes feasibility studies of the proposals that are scheduled for initiation after June 30, 1967. Included in that group is the study of the Colorado River Basin, power peaking capacity, in Arizona, Colorado, and Utah and in the eastern part of the Bonneville Basin along the Wasatch Mountains in Utah. I support this study, but I also recommend an amendment at this point, adding to Region 4 the following language on Page 17, line 15:

"San Juan County Development, Colorado River Basin in southeastern Utah; Price River Development, Price River Basin in eastern Utah; Grand County Development, Colorado River Basin in southeastern Utah; Ute Indian Unit Extension, Central Utah Project, Ultimate Phase; Gray Canyon Project, Green River in eastern Utah."

While it would be extremely desirable to initiate other feasibility studies during fiscal year 1967, it appears that such investigations could not be undertaken until 1968 or later. Accordingly, I feel that an effort should be made to add to the proposal the additional investigation authorizations I have just listed.

These projects are in the comprehensive plan for development and they all have been identified as separable units. At this point more refined feasibility studies are needed.

For the record, Mr. Chairman, I would like to point out that we are seeking the feasibility study of these various projects, not the authorization or appropriation. It could be that the studies will show that a scaling down or increase in numbers should be made. I feel that we need to start somewhere and S. 3034 is a good vehicle for this purpose.

Thank you, Mr. Chairman.

Senator JACKSON. How large is the project, the Ute Indian unit? Do you have any idea what it would involve?

Senator BENNETT. The project would bring water out of the Flaming Gorge Reservoir, and take it on to the Strawberry Reservoir. I think the Department can give more details on this.

Senator JACKSON. We will ask them. You say there are funds in fiscal 1967 for this project?

Senator BENNETT. It is my understanding that this has been included in the budget. They can also answer that question.

Senator JACKSON. If it is in the budget, it should be in the bill. Excuse me, Mr. Chairman.

Senator ANDERSON. Go ahead.

Senator JACKSON. Mr. Holum, or Mr. Dominy.

That is what confused me a little, Senator Bennett.

Senator BENNETT. It confused me, Mr. Chairman.

Mr. DOMINY. Mr. Chairman, the funds that are in the budget are for reconnaissance studies rather than feasibility studies. You are quite correct in that if there were funds being requested for feasibility investigations in the current budget, then we would also have the studies in this bill.

Senator BENNETT. Then I suggest that the committee give consideration to adding feasibility funds for this particular program. I believe they have been studying the Ute Indian project for quite a while, so it is not a last minute proposition.

Senator JACKSON. We will ask the Department witnesses when they are on the stand, Senator Bennett.

Senator BENNETT. Thank you.

Senator ANDERSON. Have you any idea what approval of some of these projects would do to the water resources available through the compact?

Senator BENNETT. I think they are all developing the resources that are available under the compact.

Senator ANDERSON. Do they exceed that?

Senator BENNETT. I am reasonably sure they would not.

Senator ANDERSON. Senator Church?

Senator CHURCH. No questions, Mr. Chairman.

Senator ANDERSON. Thank you very much.

Senator BENNETT. Thank you very much, Mr. Chairman.

Senator ANDERSON. I understand Senator Mundt is coming and he will be here sometime this morning. We have this letter from Senator McGovern supporting Senator Mundt's presentation which will be put in the record after his statement.

Senator Mundt has just come in. I know he is busy with the Foreign Relations hearings. Senator Mundt, would you like to move up and present your testimony now? I am sure the others will permit you to do so.

**STATEMENT OF HON. KARL E. MUNDT, U.S. SENATOR FROM THE  
STATE OF SOUTH DAKOTA**

Senator MUNDT. Thank you very much, Mr. Chairman. My statement is brief and I appreciate the courtesy of the Department witnesses.

It is a pleasure to appear before this committee in the interest of several South Dakota reclamation projects scheduled for feasibility studies upon congressional approval of S. 3034, the legislation now before the committee.

The biggest project in the program which we have back home, of course, is the one dealing with Oahe, which is an old familiar term to the chairman of the committee, who is a South Dakotan whom we like to claim. I will not talk just about that because the committee is surely familiar with it. Senator McGovern and I, along with our colleagues in the House of Representatives, have introduced identical bills authorizing the Oahe irrigation unit.

The Oahe unit lies in north-central and northeastern South Dakota extending from the Missouri River to the region of the James River. Diversion of water below the Oahe Dam on the Missouri River would be routed some 120 miles to the northeast for the irrigation of 495,000 acres and service to 23 communities. Recreation, fish and wildlife, enhanced flood control, and abatement of pollution would be added features to the undertaking.

A report has been completed which demonstrates the feasibility of the Oahe unit and recommends immediate authorization of an initial phase of 190,000 acres. That report is under review, and since a considerable amount of detailed planning remains to be done, it is necessary that additional congressional authorization be included in the pending legislation.

This project is one of long standing. It was part of the original Pick-Sloan plan actually, where it had been decided that parts of this plan, as in the case of Garrison River in North Dakota, has to be re-authorized, and we are here for that purpose, insofar as Oahe is concerned.

Now, I also speak on behalf of two minor additions to the report. A Bureau of Reclamation report in 1959 provided a preliminary appraisal of the irrigation potential on bottom lands and benchlands along both banks of the Missouri River in South Dakota, from the North Dakota State line to Yankton in southern South Dakota. The document was entitled "Report on South Dakota Pumping Division, South Dakota, Missouri River Basin Project," and was dated April 1959.

Investigations included 17 pumping units, and of these, four are included in section (b) of S. 3034, under the category of studies now underway and which will be substantially completed by the end of the current fiscal year. These units are Tower, Greenwood, Yankton, and Wagner.

I have offered an amendment to S. 3034 to include two additional irrigation projects. They are the Fort Thompson unit and the Grass Rope unit. Both were included in the 1959 report. On the basis of plans developed at that time, the Fort Thompson unit would be located on the left bank of the Missouri River in the general vicinity of Big Bend Dam. The unit would include about 7,500 acres of land within

the Crow Creek Reservation. Of this acreage, about 2,300 is in Indian ownership. Irrigation water would be obtained from Lake Sharpe, formed by Big Bend Dam, and it would be necessary to construct a pumping plant on the shore of Lake Sharpe and a system of relift pumping plants, canals, and laterals to serve the land. The estimated cost of construction at the time of the report was \$2,852,000.

The Grass Rope unit would be a somewhat smaller undertaking providing irrigation for about 4,500 acres of which 3,500 is Indian land. Grass Rope is located across the Missouri River and upstream several miles from the Fort Thompson project. Grass Rope is located on the Lower Brule Indian Reservation and would also derive water from Lake Sharpe by means of pumping plants.

Both units are located in a predominantly agricultural area. The average annual precipitation is only about 16 inches, according to information I have from the Bureau of Reclamation. The lack of rainfall limits most existing farm operations to a range-livestock type, with a minimum of cash-grain farm acreage. Crop yields are low and livestock numbers dwindle during periods of drought, which are not uncommon in this area.

Irrigation would change this agricultural pattern by increasing farm production and permitting the raising of more cash crops. The stabilized farm production, with some increased farm population, would increase sales of farm products and purchase of farm supplies in nearby towns. This development would help employment opportunities for residents of the Indian reservations, thus improving the economy of the reservations and of the State.

It is for these foregoing reasons that I have been working in close cooperation with Mr. Vernon Ashley, Coordinator of Indian Affairs, who actively is seeking additional means by which the desperate economic conditions on both the Crow Creek and Lower Brule Indian Reservations might be improved for the direct benefit of our Indian residents, as well as the State in general.

My comments in regard to the two units I seek to include in the bill are also applicable to the four pumping units now a part of S. 3034. The Tower, Greenwood, Yankton, and Wagner units are located in a predominantly agricultural area where annual rainfall ranges up to 24 inches a year, thereby limiting agricultural endeavors in that area.

Irrigation would increase production of the lands irrigated and permit more efficient use of the adjacent dry lands. The stabilized production on the irrigable acres would have a general stabilizing effect on the economy of the whole area.

The Pine Ridge irrigation unit is included in this bill and is part of the overall Missouri River Basin project, but is located on the White River in southwestern South Dakota on the Pine Ridge Reservation. It would be a multipurpose development allowing irrigation of about 6,500 acres. It would provide for flood control, recreation, and would enhance fish and wildlife in that area. The project would have an important impact upon the economy of the area where four-fifths of the population are Indian citizens of Shannon County.

Another proposal now under study which will require additional investigation, and is part of this legislation in section 2, is the Pollock-Herleid pumping unit, which proposes irrigation for 14,000 acres of land in the Pollock-Herleid area in northern South Dakota.

The feasibility study was commenced in 1964 and is scheduled to be completed in 1967. Interest in this project has been amply demon-

strated by the landowners in the area by the formation of the Pollock-Herleid Irrigation District, encompassing the lands which would be irrigated. In addition, the Pollock-Herleid unit is within the Oahe Conservancy District, whose board of directors are actively supporting this plan.

One other project which would be scheduled for a feasibility study to begin during the next fiscal year is the Oahe unit, Mitchell area, calling for the development of a multipurpose reservoir near Mitchell, S. Dak., for municipal and industrial water, irrigation, flood control, recreation, and fish and wildlife conservation.

Funds were included in the 1966 Public Works Appropriation Act for a reconnaissance study which is due for completion very shortly. The budget for fiscal year 1967 includes funds for the initiation of feasibility studies to be completed in fiscal year 1968.

The city of Mitchell would benefit from a much needed additional water supply and the city, along with the entire area, has demonstrated overwhelming support for this project.

So it is in support of these projects which I have enumerated, Mr. Chairman, that I greatly acknowledge the courtesy of the committee in allowing me to testify a little bit out of order this morning.

Senator ANDERSON. Are there questions of Senator Mundt by members of the committee?

Thank you very much, Senator Mundt.

(The letter referred to follows:)

U.S. SENATE,  
March 25, 1966.

HON. CLINTON P. ANDERSON,  
*Chairman, Subcommittee on Water and Power Resources,  
Senate Committee on Interior and Insular Affairs,  
U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: I heartily endorse and support the inclusion of the six South Dakota projects listed in S. 3034 among those authorized for study by the Secretary of the Interior as required by the Federal Water Projects Recreation Act of 1965.

In addition, I urge the subcommittee to consider two projects not listed in the draft bill, the Grass Rope and Fort Thompson units, near the communities of Fort Thompson and Lower Brule, South Dakota.

Reconnaissance surveys have indicated that Fort Thompson and Grass Rope are the best of the fourteen potential projects of the South Dakota pumping division, associated with the Missouri River Basin project. Grass Rope, comprising 4340 acres of irrigable land, includes close to 3,000 class I acres. The project cost is estimated at \$2,730,000. The Fort Thompson unit is 7,480 acres in size, with over 3,700 class I acres. About 3,200 more are class II. Construction costs are projected at \$870,000.

In view of the highly favorable proportions of the best land for irrigation, along with other promising factors found in studies of these units to date, I believe that continued progress on feasibility investigations is very much in order. I request that they be added to S. 3034 under subsection (c) of Section 3.

The need for continued orderly development of South Dakota's water resources is both obvious and urgent. In the midst of soaring national prosperity, the indicators of economic health show clearly that my state lags behind. Between 1963 and 1964, for example, while total personal income in the United States was climbing by a hearty 5 percent, South Dakota was the only state that experienced a net loss. This attrition can be traced in large measure to our heavy dependence upon agriculture, an industry chronically underpaid for its great contributions to our national and international well-being.

South Dakotans view water resource development as a key to both a strengthened agriculture and to a more diversified economy, and rightly so. Water for irrigation farming will release farmers from their climatic confinement to a small range of commodities frequently in surplus, allowing them to respond to better markets for other crops, and will create new opportunities for agricultural income.

At the same time, water for municipal and industrial uses, recreation, and fish and wildlife, can be an important factor in the encouragement of new forms of enterprise.

In regions where the need for economic expansion is great, resource development brings benefits beyond those traditionally examined when such projects are considered. It lends strong support to other government policies and programs for regional, local and individual economic growth. The War on Poverty is but one example of numerous broad programs that can be furthered through reclamation. This fact, in my view, substantially strengthens the case for continued progress toward maximum development and use of South Dakota's water resources.

On March 2 of this year, when I introduced S. 3001 to authorize a 190,000 acre first stage of the Oahe irrigation unit, I noted that South Dakota stands 14th out of the 17 western reclamation states in terms of numbers of acres under irrigation through Federal projects. Seventy-eight thousand acres in my state presently receive project water, out of a total of more than 9 million.

Those 9 million acres collectively represent an investment in the people and the progress of our nation that is virtually unmatched in terms of wisdom and long term value. I do not oppose the pace of water resources activity in other states, and I will continue to enthusiastically support sound reclamation development at every opportunity. My purpose in pointing out the relative status of the western states is only to indicate that continued exploration of potential projects in South Dakota is clearly justifiable in light of what has been accomplished elsewhere.

The studies authorized in S. 3404 for South Dakota projects, together with initial surveys of the two units that I have urged the Subcommittee to add, will allow uninterrupted progress in my state under the dynamic reclamation program of the 1960's.

Sincerely yours,

GEORGE MCGOVERN.

Senator ANDERSON. We also have a joint statement of Senators Church and Jordan of the State of Idaho for inclusion at this point. Also a statement by Senator Young of North Dakota, and a letter from Senator Gruening, of Alaska.

(The data referred to follow:)

JOINT STATEMENT OF HON. FRANK CHURCH AND HON. LEN B. JORDAN, U.S. SENATORS FROM THE STATE OF IDAHO

Contained in S. 3034 are 14 resource development projects of direct concern to the state of Idaho. Eleven of them are wholly within the state. We wish to comment briefly on some of the individual projects for which authorization for feasibility study is sought in S. 3034 and to offer one addition to the projects already listed.

Four of the listed project studies either have been completed or will be substantially completed by June 30, 1966. Authority is asked to continue the review of these reports. One of the four, the Mountain Home Division of the Southwest Idaho Water Development Project, is now pending before Congress in legislation introduced in both houses of Congress last week.

The other three, Challis Project in the Challis Creek Division, the Rathdrum Prairie Project and the first phase study of the Bear River Project, are now being reviewed. No further feasibility funds are needed and we urge the committee to recommend continuing authority in order to keep the studies current, pending legislation.

Let us turn next to the other divisions of the Southwest Idaho Water Development Project. The Project bill which is now pending before Congress, takes cognizance of the fact that feasibility studies on the Garden Valley dam, reservoir and power facilities will be completed within the next few weeks. The bill therefore seeks authorization for that part of the Garden Valley division in early Congressional action. It further specifies that the remaining feasibility reports on the Garden Valley division shall be completed by Jan. 1, 1969. The Bureau of Reclamation has budgeted \$180,000 to continue this study during fiscal year 1967.

The Mountain Home, Garden Valley, Weiser and Bruneau divisions of the Southwest Idaho Water Development Project represent a comprehensive, hydrologically-integrated program for the use of water resources. The overall project is the result of more than 20 years of study. Portions of the study are now com-

pleted. The Weiser River division report will be completed in the coming fiscal year. The Bureau of Reclamation has budgeted \$10,000 to finish this work. We urge the subcommittee to continue the authority for the study.

The fourth division of the Southwest Idaho Water Development Project bill is not in the bill before the subcommittee and we would now offer it for inclusion in S. 3034. The Bruneau river division represents the largest land area in the Southwest Idaho project. More than 240,000 acres of land will be opened to agriculture as a result of the project work in the division. Preliminary field reports have been made and a summary of the potentialities of the division are included in the Bureau of Reclamation Upper Snake River Project Report of 1961. It is now necessary to initiate a detailed feasibility study of the Bruneau division of the Southwest Idaho Water Development Project, including the Wickahoney unit of that division. It is essential that this study be initiated at the earliest moment in order maintain a balanced timetable of development for the entire project.

We urge the subcommittee to authorize initiation of the Bruneau division feasibility study and will offer language at the conclusion of this statement for inclusion of the study in S. 3034.

Six studies contained in S. 3034 relate to the Upper Snake River Project.

Most pressing need is completion of reports on the Lynn Crandall division. This project will provide needed supplemental irrigation waters to more than a half-million acres. The Lynn Crandall division is an essential link in full water resource development for Southeast Idaho. Current feasibility studies are due for completion in fiscal year 1968 and the Bureau of Reclamation has earmarked \$80,000 to bring the studies to near completion in fiscal year 1967. We urge committee approval.

A second key work in current water use in Southeast and Southcentral Idaho is American Falls dam and reservoir. Bureau of Reclamation examinations have revealed that the present dam, built in 1927, has deteriorated to the point that it must be replaced by a new structure in the very near future. The Bureau is currently engaged in determining cost factors and benefits on a series of alternatives. These include replacing the dam at its present height, or raising it according to several formulas, to produce greater storage capacity. There are divergent areas views about such increases, but no opposition to replacing the present dam. We have asked the Bureau of Reclamation to hold public hearings prior to reaching final decision on replacement of American Falls dam. This study is due for completion in fiscal year 1967 and the Bureau of Reclamation has budgeted \$10,000 in that year for the work. We urge committee approval.

Directly related to the works and storage capacities of Lynn Crandall and American Falls dams are the Salmon Falls and Oakley Fan divisions. The Salmon Falls tract has been called the most acutely water-deficient area in the entire Snake River basin. A description of the proposed works are contained in the Bureau of Reclamation report. We will add to that, the concern of the landowners in the area as expressed in requests for assistance in getting the Salmon Falls project implemented before serious economic troubles develop. These good people have displayed the patience of Job as they watch waters spill past Milner dam each year, while they are unable to take advantages of the water to alleviate their critical shortages. The feasibility study of the Salmon Falls division is due for completion in fiscal year 1967 and the Bureau of Reclamation has budgeted \$10,000 for that work. We ask committee approval.

Another area, adjacent to Salmon Falls, and sharing many of the same problems, is the Oakley Fan division. Here, supplemental waters are needed for 62,000 acres. Residents are forming a conservancy district to accept the obligation of irrigation costs, in anticipation of federal assistance. The Bureau of Reclamation recognizes the need to assist in this land development and has plans to initiate feasibility studies in fiscal year 1968. We recommend to the subcommittee that such authorization be advanced to allow this study to be started in fiscal year 1967.

We also ask that the same advanced timetable for initiation of feasibility study be applied to the Big Wood River division. It has become necessary to act much sooner on the Big Wood River than originally planned. First proposed as a reclamation project to provide supplemental irrigation water to 15,000 acres, the project now will consider needed flood control and recreational benefits. Record snowpacks in the Sawtooth Mountains have sent the Big Wood spilling over its banks into communities and farmlands in recent years. At the same time, increasing numbers of vacationing Americans have found the Sun Valley and Stanley Basin regions. Flooding in the spring, followed by droughts in mid-summer have restricted agricultural development along the Big Wood. We urge the subcommittee to authorize start of this feasibility study in fiscal year 1967.

One of the most ambitious and sensible water conservation projects exists in the Snake Plains Recharge Division. Here, the natural underground storage capabilities of a unique aquifer formation would be put to work in retaining flood flows and irrigation runoffs upstream. Geological studies verify the logic of this proposal. Channeling and diverting these floodflows will recharge groundwatered supplies, which can then be pumped up to be applied to agricultural development, instead of agricultural destruction, as is so often the case. This study is due for completion in fiscal year 1970 and the Bureau of Reclamation has budgeted \$35,000 for continuation of the work during fiscal year 1967. We urge its approval.

We now recommend the following changes and additions to S. 3034, Mr. Chairman:

On *Page 16*, beginning at *line 22* and continuing on *Page 17* through *line 4*, deleting the inclusive language referring therein to the Big Wood division of the Upper Snake River Project and the Oakley Fan division of the Snake River Project, and inserting the identical language as it refers to the above-mentioned projects on *Page 15*, immediately after *line 9*.

On *Page 17*, insert the following after the above insertion "Southwest Idaho Water Development Project, Bruneau division, including the Wickahoney unit, on the Snake River and Deadman Creek in Twin Falls, Owyhee and Elmore counties."

---

STATEMENT OF HON. MILTON R. YOUNG, A U.S. SENATOR FROM THE STATE OF NORTH DAKOTA

Mr. Chairman, and members of the committee, I am very pleased that your Committee is conducting hearings on Senate Bill 3034 to authorize the Secretary of the Interior to engage in feasibility investigations of certain water resource development proposals. Among the projects proposed for feasibility studies are several pumping irrigation projects in North Dakota.

I refer specifically to Section 3(b) of the bill and the Horsehead Flats and Winona Units on the east of the Missouri River in the general vicinity of Linton, North Dakota.

Mr. Chairman, North Dakota has lost over 500,000 acres to the mainstem reservoirs on the Missouri River—specifically the Garrison Reservoir in North Dakota and the Oahe Reservoir in South Dakota. We have lost over 74,000 acres to the Oahe Reservoir and the balance to Garrison Reservoir. As you are well aware, these acres which were lost were mainly bottomland and some of the most fertile land in the state. This land has become increasingly more valuable for irrigation purposes. Should these two units prove feasible, the development of them would go a long way in replacing land lost to Oahe Reservoir.

As your Committee is well-aware, there is great interest in irrigation throughout North Dakota, and while this area will be excluded from any of the large irrigation projects proposed, the interest in irrigation is as high here as in other areas. This is indicated in the attached article from the March 19 issue of the *Dakota Farmer* published at Aberdeen, South Dakota, which I request be included as a part of the record at the conclusion of my remarks.

Under Senate Bill 3034 the feasibility studies of these two units would not be scheduled until after June 30, 1967. I would strongly urge, Mr. Chairman, that the Secretary of the Interior be authorized to initiate these studies at an earlier date or as soon as it is practicable.

[From the *Dakota Farmer*, Mar. 19, 1966]

DAKOTA IRRIGATORS: THEY DON'T WORRY ABOUT DRY YEARS

Dakotans irrigating crop and grassland find it stabilizes their feed supply enough that they don't worry about liquidating livestock during dry years.

Rudy Kietzman, Armour, S.D., says irrigation added stability to his diversified farming operation. Kietzman became interested in irrigation in the mid 1950's and visited a number of irrigation operations in Nebraska to pick up some ideas. He liked what he saw and set up his own sprinkler irrigation system in 1957.

Not only did it seem to add stability, but "the system I chose cut down some of the work involved with irrigation," says Kietzman. He has a boom sprinkler which he pulls along his 80 rod fields.

His investment returned dividends sooner than expected in that 1959 saw a crop failure on dryland operations. "I picked 106 bushel corn that year and dryland yields were in the 5 to 10 bushel category," reflects Kietzman.

Water is pumped from a 200 foot well with an LP engine. The sprinkler unit is capable of putting four inches of water per 10 hour setting on the light, sandy type loam. Water quality is a problem in his area. His water is listed in the "doubtful" category, but no adverse effects have shown up on the soil or in the resulting crops during the past eight years.

Kietzman can irrigate 120 acres. Forty acres are irrigated prior to planting, and the remaining 80 acres are irrigated two to five times depending on the rainfall situation. Says Kietzman, "A few days of hot, dry winds usually occur during the pollination stage of corn, and irrigation at this time can mean a difference between profits on irrigated land and existence on the dryland operation."

The 80 acre unit is usually kept in corn. Kietzman also irrigates some grain sorghum. He plows down 350 pounds of 33-0-0 and uses an 18-46-30 starter fertilizer which also includes five pounds of zinc per acre. Grain sorghum is planted in the pull rows. Soil tests have not indicated a potash deficiency on his soils but he did note a response from potash last year. Additional nitrogen is sidedressed on the corn. He uses 40-inch rows.

"I follow a regular schedule for irrigation until about the middle of August. When the corn starts to dent, we are over the critical stage and cut down our operation," Kietzman says.

He has had his land in a row crop rotation since 1955. His corn is usually harvested as high moisture grain. Stalks are plowed down right after harvest. Kietzman feels that spring plowing produces an unmanageable soil. He says tillth and humus levels in his soil have remained constant during the last 10 years.

Continuous row crop has not been without its problems, especially with corn rootworms. In addition to using organic phosphate chemicals, Kietzman has found that quick regrowth of roots due to adequate water and fertilizer is also a factor in reducing rootworm damage.

Kietzman's crop production is marketed through some 500 head of hogs and through fat cattle from his own cow herd and purchased feeders.

#### J. T. RANCH

J. T. Ranch, Inc., 24 miles northwest of Linton, N.D., is hoping irrigation will more than make up the difference in production capacity of the operation despite losing some 2,000 acres to the Oahe Reservoir. The 2,000 acres of bottomland is gradually being inundated by the rising waters of the Missouri. The J. T. Ranch had some 6,400 acres of crop and grassland.

Partners in the operation are Godfrey Grenz, sons Leo and Herb, and son-in-law Garry O'Callaghan, Jr.

Godfrey Grenz irrigated in the dry 1930's but this was no match for the amount of irrigation being done now. Since 1962 J. T. Ranch has been irrigating around 200 acres of corn, 300 acres of native grass, 20 acres of alfalfa and 150 acres of wheat. A few years from now it hopes to be irrigating 700 acres, the amount for which it has water rights. They hope this will assure them of enough feed to sustain their 400 head of cattle. Says Herb Grenz, "Irrigation is not an easy task, but if you want to put in that extra work it will show some good results." In 1963 they had a corn crop that made 20 tons per acre of silage. The past two seasons saw yields run from 13 to 15 tons.

J. T. Ranch usually has around 500 acres of durum wheat of which 150 acres is irrigated by pre-soaking the ground in the spring prior to seeding. "We don't get much in the way of additional yields but figure that since we are not using irrigation equipment that early for corn we might as well wet some of the wheat ground," says Herb.

Irrigation centers around a large self-propelled Valley outfit that is completely automatic. It will cover 160 acres in 67 hours putting on 1 inch of water per acre. Strung on 13 towers, the unit (1,285 feet in length) revolves around a pivot point in the center of the field.

The irrigation pump is on the river bank. Water is first pumped through a 10-inch, 14 gauge steel pipe 1,200 feet and then through 2,300 feet of 8-inch aluminum pipe to the pivot point of the system. A field usually gets 10 to 12 sprinklings a season. This self-propelled unit is used for irrigating corn. There is also a boom-type sprinkler that is used on another 40 acres of corn.

Grassland is flood irrigated. The natural slope of the land is such that water is siphoned onto the field at one end and gradually moves down the field. Excess water seeps back into the river.

Most of the land J. T. Ranch has been irrigating will be inundated by 1967. Then the operation will concentrate in irrigating some of its higher, more rolling land. Plans call for use of two more Valley systems in one or two seasons.

Herb Grenz says fluctuation of the water level in the river is a problem. He hopes that some day they will be able to install a floating pump that will vary with the level of the water. He says irrigation is more expensive for them than it should be right now because of the amount of lift and head pressure that must be maintained. Water is pumped 107 feet up from the river. Head pressure is 341 pounds per square inch.

U.S. SENATE,  
Washington, D.C., April 6, 1966.

HON. CLINTON P. ANDERSON,  
*Chairman, Subcommittee on Water and Power Resources of the Senate Committee on Interior and Insular Affairs, Washington, D.C.*

DEAR MR. CHAIRMAN: The purpose of this letter is to make a formal request that S. 3034, a bill to authorize the Secretary of the Interior to engage in certain feasibility investigations, be amended to strike the language appearing on page 7, lines 3, 4 and 5, which would provide authority for completion of a feasibility report on the Devil Canyon project in Alaska.

If authorized, the Devil Canyon project would, according to a proposed report on a plan of development of March 6, 1961, require the expenditure of \$564,675,000 for construction of a hydroelectric power project which would produce 580,000 kilowatts of power at an excessively high cost of 6 to 8 mills per kilowatt hour. As the report of the Bureau of Reclamation of March 6, 1961 states: "The storage capacity" of Devil Canyon "is not adequate to control the runoff of the Susitna River." Therefore, a second dam would have to be constructed 115 miles upstream where a sufficiently large reservoir could be completed.

The worthlessness of the Devil Canyon project should be examined in comparison with the excellent hydroelectric power projects in Alaska that should be encouraged and constructed with all possible speed. First, of course, the Rampart Canyon Dam should be authorized as soon as possible. At Rampart Canyon nearly five million kilowatts of the lowest cost electric energy of any source now known—2 to 3 mills per kilowatt hour—can be produced in an enormous capacity and it can mean the useful development of a great industrial complex in Alaska. The Snettisham project at Juneau, which has already been authorized, is badly needed to supply power to the expanding community of Juneau and to supply the low cost power that will encourage development of resources in that area. Unfortunately, with respect to Snettisham, the Administration requested no funds in the 1967 budget for its construction. This is a serious mistake which I hope will be corrected before the conclusion of this session of Congress.

The great Rampart project which is of such enormous importance to the entire free world is languishing because the Department of the Interior has failed miserably to provide the Corps of Engineers with its final report on the dam which is needed to complete the feasibility report of the Corps. If any work needs to be done on hydroelectric power projects in Alaska by the Department of the Interior, I would suggest the Secretary direct his attention to the important work on Rampart that needs to be done and refrain from seeking additional authority for work on Devil Canyon which does not need to be done at all.

Under the auspices of the what was then called the Irrigation and Reclamation Subcommittee, and with your generous cooperation, I conducted hearings during the month of September 1960 in Alaska on hydroelectric requirements and resources in Alaska. For your ready reference I attach a copy of the report of these hearings.

On page xvi of the hearings you will note the conclusions reached as to the value of the Devil Canyon project as a result of extensive hearings at Anchorage, Fairbanks, and Juneau where testimony was received from the Commissioner of the Bureau of Reclamation and Alaskans who are concerned with the development of hydroelectric power resources of Alaska. It was my judgment then, and nothing has occurred since to change it, that the Rampart site is far and away the most desirable location for a hydroelectric power project and that Devil Canyon, in comparison, is without value.

Therefore, I urge the deletion of this project as one to be authorized in S. 3034. With best wishes, I remain,

Cordially yours,

ERNEST GRUENING, U.S. Senator.

STATEMENT OF HON. KENNETH HOLUM, ASSISTANT SECRETARY OF THE INTERIOR FOR WATER AND POWER; ACCOMPANIED BY COMMISSIONER FLOYD E. DOMINY, BUREAU OF RECLAMATION; GILBERT STAMM, ASSISTANT COMMISSIONER OF RECLAMATION; DANIEL V. McCARTHY, CHIEF, AND JIM T. CASEY, ASSISTANT CHIEF, DIVISION OF PROJECT DEVELOPMENT, DEPARTMENT OF THE INTERIOR

Mr. HOLUM. Mr. Chairman, members of the committee, Commissioner Dominy and I, and members of the reclamation staff are here this morning to present and report on the enactment of Senate bill S. 3034.

One of the many fine pieces of conservation legislation which this committee sponsored and Congress enacted into law last year, was the Federal Water Recreation Act (Public Law 89-72). Section 8 of that act, as you know, provides:

Effective on and after July 1, 1966, neither the Secretary of the Interior nor any bureau nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law, any other provision of law to the contrary notwithstanding.

This is our first experience in implementing these provisions of Public Law 89-72. Commissioner Dominy and his staff have worked long and hard preparing information in support of this legislation. They are here this morning. We certainly hope that we are able to supply the information that this committee requires. If we are not able to provide it this morning, we shall certainly make it our duty to be responsive to the requirements of this committee.

As you consider this piece of legislation, we realize, Mr. Chairman, that we are presenting a considerable number of projects under this legislation. It does, however, represent a list of proposed projects which we believe are worthy of your consideration for further study. We hope that this information will be helpful in your review of the proposed feasibility investigation program of the Bureau of Reclamation.

As you know, the Bureau of Reclamation makes three types of investigations including basin, reconnaissance, and feasibility studies:

Basin surveys evaluate the resources of the total basin area, appraise the needs and opportunities for development of those resources, and formulate a general plan to be used as a framework for the investigation of specific projects or units of an overall project.

Reconnaissance studies evaluate, on the basis of limited information, the various alternative possibilities for resource development in a specific area, determine whether the prospects of developing a financially and economically feasible project are sound, and thus, with a minimum of time and funds, establish whether more detailed studies are warranted.

Feasibility studies, which normally are based on reconnaissance or basin investigations, develop and define in detail the engineering and operating plans for potential reclamation projects and determine their economic and financial feasibility in sufficient measure to recommend their authorization to the Congress.

We have interpreted section 8 of 89-72 as applying only to the latter type of study, or the feasibility investigation. S. 3034 has been prepared on that basis.

Since this is the first presentation under the terms of section 8 of Public Law 89-72, we have included feasibility investigations now underway as well as those which we hope to initiate in fiscal years 1967 and 1968. Inclusion of projects for 1968 in the bill will lay a groundwork for our 1968 program.

If you approve of this general procedure, in the future our authorization of investigations will remain approximately a year ahead of the appropriation hearings. Also, once an operating procedure is established, we will not have to burden you with so many investigations.

Sections 1 through 3 would provide the authority to continue or to initiate feasibility investigations of specific projects. Commissioner Dominy will comment further on these sections in his statement. I would like, however, to comment briefly on section 4.

This section would authorize the Secretary of the Interior to undertake additional feasibility studies in those cases where they are financed from non-Federal funds. Over the years, the Bureau of Reclamation has received a sizable amount of contributed funds to conduct feasibility studies. State or local interests have provided such funds in order to accelerate the investigation of projects in which they were interested.

Section 8 of Public Law 89-72 would preclude undertaking feasibility investigations with contributed funds as in the past. It is possible that this could remove much of the incentive for local financial participation. In light of this, we should like to request that the committee provide latitude in section 4 to undertake feasibility studies with contributed funds and that this become a permanent part of reclamation law. We would, of course, not use Federal funds for any part of the investigation of such projects without specific authorization on the part of the Congress.

The current and future needs of the Federal reclamation program were carefully considered in the preparation of S. 3034. We believe that, if enacted, it will provide satisfactorily for completing action on feasibility studies and reports essentially completed or currently underway and provide also for initiation of new investigations in the coming 2 years.

Mr. Chairman, on behalf of the Department of the Interior I would like to say that I hope very much that the committee will approve S. 3034 legislation and that it can be enacted into law, and I trust that Commissioner Dominy and I and the members of the Reclamation staff that are present here this morning can provide the information that you require in considering enacting this piece of legislation.

Senator ANDERSON. Have you any idea how much information would be required in order to pass on what you have handed us? Isn't this what you would call sort of a "snow job"?

Mr. HOLUM. No, I hope not, Mr. Chairman. The material which has been prepared for you, we hope, will provide this committee and the Congress with a review of the work that is now underway and the work that is proposed.

We recognize that we are considering this morning authorizing feasibility studies, not legislation to authorize the construction of projects. Of course, that information cannot be definitive until the investigations are completed.

Senator ANDERSON. How could this committee get the information and pass on it from what you have sent us?

Mr. HOLUM. On all of these projects?

Senator ANDERSON. Yes.

Mr. HOLUM. Well, again I would say, Mr. Chairman, I trust that the Congress will recognize that if this committee acts favorably on this legislation, that you are not authorizing projects but authorizing a detailed study of projects which we will have to bring back to you if they prove to be financially and economically feasible and desirable, and at that time we will have to furnish to you and to the Congress the information that is required.

Senator ANDERSON. At that time you will say, "We have spent all the money on it, now let's go ahead with the project." Why did this arise out of the Missouri River situation where everything under the sun has already been approved by legislation? If we pass on this, what are we going to do with that sort of a situation? Every project you can think of in the United States is authorized for a feasibility study, isn't it? You scraped the entire barrel on this, didn't you?

Mr. DOMINY. We have included here, Senator Anderson, only those projects that are already under feasibility study under law existing prior to the enactment of the requirement that we come here to get authorization for study in advance of the study, and those which we have budgeted for fiscal 1967 for the first time in feasibility investigation status, and a few that would be authorized to be budgeted in fiscal 1968 for the first time.

The reason there are so many in this package is that we have a backlog of many years of investigation underway which was authorized previously under reclamation law. There are very few to be newly started investigations included in this bill. From here on, annually as they come up, there would only be a few each year to be added.

Mr. HOLUM. Senator Anderson, the situation is not comparable with the Flood Control Act of 1944, which did at that time authorize the construction of a substantial number of projects in the Missouri River Basin. All this legislation does is authorize the completion, the continuation, and the initiation of a few feasibility studies which will later be brought to the Congress for your final consideration.

Senator ANDERSON. You and I recognize, Mr. Secretary, that many things that they said were authorized by the Pick report weren't actually authorized, were they? A dam in your home State was specified and what they built wasn't the same thing at all. Will this be full of that same sort of interpretation?

Mr. HOLUM. Mr. Chairman, none or practically none—I guess I could say—none of the irrigation projects that were authorized by the Flood Control Act of 1944 have been constructed in South Dakota. We are in the process of doing feasibility reports which, I hope, we will bring up very shortly.

Senator ANDERSON. You mean you don't think there was a dam constructed where it was supposed to be?

Mr. HOLUM. The dams that were authorized by the Flood Control Act of 1944 have all been constructed.

Senator ANDERSON. Yes, but was your first statement that they have been constructed?

Mr. HOLUM. Have been constructed, but none of the irrigation features have been.

Senator ANDERSON. I didn't talk about irrigation features. You said none of the dams had been constructed, didn't you?

Mr. HOLUM. No; I trust that I didn't.

Senator ANDERSON. What did you say?

Mr. HOLUM. I certainly know better than that.

Senator ANDERSON. What did you say specifically?

Mr. HOLUM. Irrigation features—I trust that that is what I said.

Senator ANDERSON. Well, the section of the law reads:

Effective on and after July 1, 1966, neither the Secretary of the Interior nor any bureau nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law.

Mr. HOLUM. That is correct.

Senator ANDERSON. And if we authorize all of these then we will not have to authorize another one as long as we live?

Mr. DOMINY. Senator, of the 134 projects listed in this volume, all but 20 are already in the process of being investigated under the law as it existed prior to the enactment of this paragraph you just cited.

Senator ANDERSON. So this section isn't very important?

Mr. DOMINY. Yes; it is quite important, because unless we are now authorized by specific legislation, we would stop all work on the 114 that are in progress and have been in progress for many years, and we could not start the 20 additional ones that are included in this bill as we have presented it.

Senator ANDERSON. Since Senator Jackson is the author of the bill, I will pass the question on to him. But I must say when we discussed this question we thought you would come in with a limited number of studies you were going to investigate for feasibility for the next year. This looks like 20 years' work.

Mr. DOMINY. I submit we have come in with a limited number, 20 additional starts for 1967 and 1968 and the balance of them are already in progress under the authority as it existed prior to—

Senator ANDERSON. Already authorized?

Mr. DOMINY. No, sir; they were authorized for study under existing reclamation law.

Senator ANDERSON. But you are asking us to take this whole bundle, aren't you?

Mr. DOMINY. That is correct.

Senator ANDERSON. How many years' work is in this roughly?

Mr. DOMINY. Some of these projects have been under investigation for a number of years.

Senator ANDERSON. How many years, 20 years, 15 years?

Mr. DOMINY. You mean for construction?

Senator ANDERSON. How long could you go on feasibility reports in this volume here, how many years?

Mr. DOMINY. About 6 years in the future would complete the feasibility studies of everything that is included in this group, including those that we were already studying under authority we had prior to the enactment of this legislation.

Senator ANDERSON. You wouldn't want us to pass this without carefully examining each one of these, would you?

Mr. DOMINY. Of course not, sir.

Senator ANDERSON. How long do you think it would take us?

Mr. DOMINY. I would like to point out that you are not considering here the authorization of construction of these projects.

Senator ANDERSON. I read English a little. I know this is feasibility. How long do you think it would take us to consider each one of these projects and determine whether a feasibility study should be made?

Mr. DOMINY. Well, I would assume, sir, that after the Bureau of Reclamation had completed a basin survey and a reconnaissance survey under authority that we already have under reclamation law, and we find that there is strong likelihood that a detailed feasibility study would result in a project that fits the standards that have been laid down by Congress in considering projects for construction, that our recommendations, together with the known facts, which are included here, would convince you that we ought to make the feasibility study.

Senator ANDERSON. Go ahead, Senator Jackson.

Senator JACKSON. Just as a point of clarification, Mr. Chairman, there are 114 investigations that are presently underway or completed, is that right?

Mr. DOMINY. Yes, sir.

Senator JACKSON. The total amount of land to be irrigated is 2.5 million acres of new land and 3.8 million acres of lands which will receive supplemental waters, is that correct?

Mr. DOMINY. We can't give a specific answer until, of course, the investigations are made.

Senator JACKSON. I know, but I am just taking it out of your report.

Mr. DOMINY. Yes, sir.

Senator JACKSON. Yes; now 47 of the investigations have been completed or will be substantially completed by June 30?

Mr. DOMINY. That is correct.

Senator JACKSON. The amount of land to be irrigated under these 47 proposals is rather large. It is 3.6 million acres, as compared with 2.7 million acres for the 67 investigations to be completed after June 30. This is my analysis going through your report. So, I think the point here, Mr. Chairman, is that under the law they had to come in and ask for approval on any remaining feasibility study that has not been completed by July 1, 1966. So that out of the 114 investigations, it is my analysis that 47 of these investigations will be completed by June 30, and this embraces a little over half of the total amount involved. Under the law, even though an investigation is practically finished, the Bureau has to come in and get approval to finish.

Mr. HOLUM. Mr. Chairman, even if they are finished and the reports are resting before the Congress the projects are included. There is at least one item included in this legislation that was approved by the Senate 6 years ago, but since it has not been finally approved by the Congress, it may be necessary to do some additional fieldwork. So, all of these items have been included.

Senator JACKSON. But over half of the investigations you are asking be made, as I interpret it, will be finalized by June 30.

Mr. HOLUM. That is correct.

Senator JACKSON. That relates to 47 of the 114 investigations. I point out that the 47 investigations involve more acreage than the balance of 67 investigations.

Senator ANDERSON. I merely wanted to point out that that is exactly what I had in mind.

Senator JACKSON. Right.

Senator ANDERSON. If you had 47 investigations practically finished why didn't you send those to us in one packet and then bring the new ones to us? You give us a whole gob and it seems to me you obviously expect us to swallow it all in one lump by looking at it.

Mr. DOMINY. We thought it would be simpler for the committee to have the whole packet at one time.

Senator ANDERSON. The Appropriations Committee of the Congress wouldn't be able to—

Mr. DOMINY. We have them broken out in categories as in the bill before you, sir.

Senator ANDERSON. Where?

Mr. HOLUM. In the legislation.

Mr. DOMINY. Section 1(a) covers 12 proposed projects which are now pending before the Congress for consideration of authorization, and on those we have completed the feasibility report.

Section 1(b) includes 35 potential projects for which reports are either being currently processed within the executive branch or which are currently scheduled for completion by the end of fiscal year 1966.

Section 2 of S. 3034 would provide authority for continuation of feasibility investigations on 67 potential projects and units of projects which in themselves constitute the backbone of our going investigations program.

Section 3(a) and 3(b) would authorize the Secretary to undertake additional feasibility investigations after July 1 of 1966. Section 3(a) includes by specific reference nine meritorious potential projects for start of feasibility study in fiscal year 1967, and funds for which to undertake this work are being requested in the President's budget for the next fiscal year.

About 11 items are enumerated in section 3(b) for start of study after fiscal year 1967. Funds for these new starts, of course, have not been requested.

So I think, Senator Anderson, we do have a bill here that breaks them down by specific category, and the committee is informed from the submittal as to the specific categories and the number in each.

Senator ANDERSON. I think you gave us a pretty heavy load.

Mr. HOLUM. We recognize that, Mr. Chairman, but this is our first presentation. A year from now, after the projects are underway, the feasibility reports actually completed, or where feasibility reports have been authorized by Congress in this legislation, the burden won't be as heavy in future years. It is burdensome this year. We recognize that.

Senator JACKSON. Section 3(b) has 11 proposals presently scheduled for initiation after June 30, 1967. The question I would like to ask—and I invite this to the chairman's attention—since these proposals are scheduled for initiation after June 30, 1967, what is the need for authorization now?

Mr. DOMINY. We have the problem, Senator Jackson, of going before the Budget this fall to discuss our 1968 fiscal year budget requirements. Absent authorization, we would have the problem of what projects to include in the fiscal year 1968 budget request. We, therefore, would like to recommend to the committee that we get

authorizations at least a year in advance of the year to be funded, so that we can have some idea of scheduling our workload and presenting our program to the Bureau of the Budget.

Senator JACKSON. I know, but you are doing reconnaissance work on these projects prior to your authorization for feasibility study. If we authorize that far in advance so much can happen before the study starts that we are not quite sure of the facts at the time of actual beginning. We don't authorize that far ahead in connection with public works projects.

Mr. DOMINY. Well, as a matter of practical fact, the corps has received authority to study every river basin in the United States from previous legislation, and when they make changes and adjustments in their program, they come back and clear it by resolution with the committees of Congress rather than by act of Congress.

Senator METCALF. I wonder if the Senator will yield?

Senator JACKSON. Yes.

Senator METCALF. As a matter of fact, the corps proceeds with feasibility studies when it is just a resolution from the Public Works Committee of the Congress, because they have, over the years, received legislative authority in every river basin in the West.

Senator JACKSON. The resolution, Senator Metcalf, I think that you have in mind refers to a review of an authorized project.

Senator METCALF. Yes, they have authorized feasibility studies for every river in America, and the other day I went before the Public Works Committee to get a study of the Yellowstone authorized for the Corps of Engineers. As a member of the Public Works Committee at that time, a resolution was secured and the corps is going forward.

As Senator Anderson has said, under the law that he read, a feasibility study for the Bureau of Reclamation has to be a law passed by both Houses of the Congress and signed by the President. So, it is much easier to get a feasibility study—

Senator JACKSON. We are talking about a specific project, not a basinwide study. I think this is the difference. Under the law, as I understand it, the Corps of Engineers cannot undertake an engineering study on a specific public works project without a specific authorization by law. But they can do river studies. This is dealing with a river basin study. But what we are talking about here, of course, is a study with reference to a specific project.

Senator METCALF. I agree.

Senator JACKSON. That is the difference. And why not, Mr. Dominy, have some additional authority for reconnaissance studies? I don't see how we can very well authorize a feasibility study that would get underway a year from this June or a year from this July, when we are going to be here next year and we will have ample time to make that determination.

You can put in your request to the Bureau of the Budget this fall for those studies that you wish to undertake beginning the following July 1. We don't want to handicap or hold down your effort, but I think we should follow this matter closely. It seems to me it makes more sense to authorize on a short-term basis while we have current facts.

Mr. DOMINY. I never have any problems, Senator Jackson, of accepting the principle that the Congress is the policymaking branch of the Government. If that is the way you want to operate this, of

course, it is fine with me. It does create that problem of trying to get included in the budget something that is not yet authorized. And if I don't have a year's leadtime, then I have a budget problem.

Senator JACKSON. You submit these various studies to the Bureau of the Budget, do you not? This has Budget clearance?

Mr. HOLUM. That is correct.

Mr. DOMINY. That is correct.

Senator JACKSON. I don't follow the idea in submitting a list of projects that you want to get underway in the feasibility phase during the following fiscal year.

Mr. HOLUM. Senator, we included section 3(b) in the administration bill because it was our view that it would make for simpler procedures in the executive branch and that it would be helpful to the Congress too, if it were possible to keep a year ahead, probably not completely, but at least in part, the authorizations of these feasibility studies.

You will have to depend on us and I think at least from our point of view you can. If the reconnaissance studies establish that a feasibility study ought not to be done, it wouldn't be done. If section 3(b) takes us too far ahead, of course, as the Commissioner said that will be a decision of the Congress.

Senator ANDERSON. This came up specifically from someone in my State. Under the proposal the Mimbres project in New Mexico is not scheduled until after June 30, 1967. If funds are made available in the appropriation bill for this project, would the language prevent the initiation of study during fiscal 1967?

Mr. DOMINY. Not if the appropriations bill clearly spelled out that it was authorizing as well as appropriating money. But technically, we are not permitted to ask for money without authority in law. So there would have to be an actual line in the appropriation bill making clear that it was legislating.

Senator ANDERSON. Which would make it subject to a point of order.

Mr. DOMINY. That is correct. That is the way I interpret this because we now cannot include a feasibility investigation without having an act of Congress including it in advance.

Senator ANDERSON. I understand there is a project kicking around in the Congress called the central Arizona project and something to be done with the Mimbres River Valley as part of the legislation. Would this language put it where we couldn't do it?

Mr. DOMINY. As I say, if it were to be included in our authorization in 1967, it would have to be part of the act that you are considering here or the appropriations bill itself would have to contain the proviso to authorize it.

Senator JACKSON. Now I would like to turn to section 4. Section 4 states:

The Secretary is authorized to engage in feasibility studies on additional proposals when and to the extent that the cost of such studies shall have been advanced by non-Federal sources.

I must say, Mr. Dominy, I think we all agree that we ought to get money from non-Federal sources as much as we can to assist the Bureau. But it is conceivable that under this provision the States could get together with non-Federal funds, which would later involve Federal funds, and undertake a study that we wouldn't know any-

thing about. What is the harm, even in the case where the initiation study funds are non-Federal, to inform and advise the Congress of what is going on?

Mr. DOMINY. There again, it is only a matter of delay. If we do not have legislative authority for study of a project and a local group or non-Federal agency should ask for a study and say, "We will advance you the necessary funds to get underway," we just wouldn't be able to undertake it until we had come back to Congress and explained the facts and received clearance.

We are only suggesting that if we had this authority, we could proceed with an investigation that was seriously needed and honestly backed by local sponsors. We would not spend Federal money in carrying on that feasibility study until there was a report to your committee and an act passed.

Senator JACKSON. But by that time though, they may have spent a lot of local money, and the Federal part of the thing would become almost mandatory, because they will say, "We invested our local money on the assumption that we are going to get Federal support here." In the meantime, Congress knows nothing about it.

Mr. HOLUM. I think it would be our responsibility, and again Senator Jackson, you can depend on us to inform these local people who are contributing funds that the United States cannot contribute any funds for feasibility studies until there is an act passed by the Congress.

Senator JACKSON. It seems to me that they don't normally rush in with non-Federal funds so fast that you don't have advance notice of what they would like for the Bureau to do. There is a leadtime involved in any request of this sort. It isn't a case where they come in and knock on your door saying, "Look, we want you to start studying on this next week."

Mr. DOMINY. Actually, Senator Jackson—

Senator JACKSON. There are many contributed funds projects coming in. We all agree on that.

Mr. DOMINY. This is the principal incentive that we have for contributed funds. It prevents a situation where a local entity comes and says, "We would like to get this study underway," and we must say, "It is not in our budget and we will not be able to undertake it until we get authority from the legislative committees, an act of Congress, and then a budget item."

Now, as you say, this is not a minor item. We have contributed funds in 1956, for example, of \$640,000. That happened to be the biggest year. The smallest year was 1958 with \$93,000; 1962 it was \$551,000; in 1963, \$343,000; 1964, \$345,000; 1965, \$242,000, and we have an estimate for the current fiscal year of \$314,000.

Senator JACKSON. What percentage of those figures represent the total amount spent on feasibility studies?

Mr. DOMINY. We are running around \$11 to \$12 million a year, so this is roughly 3 to 5 percent.

Senator JACKSON. They involved, however, the commitment of Federal funds at a later date; did they not? I mean they involved the study of projects that involve inevitable Federal participation in one form or another.

Mr. DOMINY. In the past this has been true. I doubt if any of them ended up paying more than about 50 percent of the total cost of the investigation from contributed funds.

Senator JACKSON. But what I am getting at is that the investigation and study relates to an eventual Federal project.

Mr. DOMINY. That is correct.

Senator JACKSON. So that just the mere fact that they are making a contribution, which we like to encourage, should not be the means by which they can get out from under the authority required by law. As a practical matter, some of these small contributions can lead to the eventual spending of millions and millions of dollars of Federal funds.

What percentage of the feasibility studies you make may turn out not to be feasible?

Mr. DOMINY. It is a fairly small figure, because we try to eliminate the nonfeasible project during the reconnaissance investigation, so that we do not spend the larger amounts for feasibility studies. Occasionally, we find that from a detailed geological examination or some other factor, that the details that didn't crop up in the reconnaissance do turn up to make the project unfeasible; but this is fairly rare, Senator.

Senator JACKSON. Would you supply that information for the record?

Mr. DOMINY. Yes, we can give you the record for the last several decades as to what our experience has been.

Senator JACKSON. For the last 10 years will be sufficient so we will have a comparison.

Mr. DOMINY. Yes.

(The information requested is as follows:)

#### UNFAVORABLE FEASIBILITY REPORTS

In the period from July 1, 1955, through June 30, 1965, the Bureau completed 109 feasibility reports of which 7 or about 7 percent were unfavorable.

Senator JACKSON. I wonder if you could supply for the record, too, a list of the reconnaissance studies that are now underway, and that you contemplate undertaking.

Mr. DOMINY. Yes, sir. We have that in connection with our 1967 budget request and it will be readily available.

(The information requested follows:)

#### LIST OF RECONNAISSANCE STUDIES UNDERWAY OR PROPOSED IN FISCAL YEAR 1967

##### GENERAL INVESTIGATION

##### Region 1:

- Upper John Day project, Oregon.
- Upper Snake River project, Idaho-Wyoming.
- Jackson Lake replacement storage.

##### Region 2:

- Central California coastal project, California.
- Central Valley project, California.
- American River division.
- Georgetown Divide unit.
- Delta division outflow studies.
- Sacramento River Division, ultimate phase.

##### Region 3:

- Arizona-Colorado River diversion projects, Arizona-New Mexico.
- Inland basins project, California-Nevada.
- Southern California coastal project, California.

##### Region 4:

- Central Utah project, ultimate phase, Utah (exclusive of Uintah unit).
- Colorado River storage project, Gray Canyon unit, Utah.
- San Juan County, Utah.

## Region 5:

Barber County project, Kansas  
 Oklahoma basins project, Oklahoma  
 Rio Grande tributary projects, Colorado-New Mexico.  
 Texas basins project: Supplementary reports, Texas. West Texas water supply unit.

## Regions 5 and 7:

Kansas basins project, Kansas.

## MISSOURI RIVER BASIN INVESTIGATION

## Region 6:

Oahe Unit—Mitchell section (James division), South Dakota.

## Region 7:

Blue division, Nebraska.  
 Elkhorn division, Nebraska.  
 Kaw division, Kansas.  
 Linwood unit (Columbus division), Nebraska.  
 St. Vrain unit (Long's Peak division), Colorado.  
 Sheep Creek unit (Oregon Trail division), Nebraska.

Senator JACKSON. In the legislation before us, are there any authorizations for study of the feasibility of diversion of water from one river basin to another?

Mr. McCARTHY. Yes, sir. They are all intrastate as far as I know. We have the north coast project in California, which would bring water from the north coast into the Sacramento River Basin. We also have the Texas Basin study, which is a study of transferring water of Texas streams from eastern to southwestern Texas. As far as I know, we have no interstate studies involved.

The Oahe study in South Dakota contemplates transferring water within the basin. We have several of that category.

Senator JACKSON. The north coast project in California referred to involves intrastate transfer?

Mr. McCARTHY. Yes, sir.

Senator JACKSON. And it involves the Eel River, the Klamath, the Trinity.

Mr. McCARTHY. The Mad, the Van Duzen, the Russian.

Senator JACKSON. So if you will supply that information for the record, too, in case there are any that you didn't remember. Are there any projects the study of which is to be authorized which are or will be dependent upon future diversion of water from other river basins?

Mr. DOMINY. I think the answer would have to be a qualified one. To my belief, all of the projects that are included in the bill would be within the compacted share of waters as already distributed by law among the various States of a basin. It might be that full development of the ultimate phase of some of the projects could overrun their compacted share, and unless a water supply were to be available, they, of course, would not be found feasible. But I don't believe that any of these that are included in the current bill would come under that category, Mr. Chairman.

Senator JACKSON. In the current bill, but do you have any such reconnaissance or other studies underway?

Mr. DOMINY. Yes; there may be some included in the reconnaissance level.

Senator JACKSON. Would you identify those and supply that for the record?

Mr. DOMINY. Yes, sir.

Senator JACKSON. In the reconnaissance area.  
(The information requested is as follows:)

BUREAU OF RECLAMATION PROJECTS UNDER INVESTIGATION WHICH INVOLVE  
TRANSBASIN DIVERSIONS

<i>Projects</i>	<i>General investigations</i>	<i>Remarks</i>
Reconnaissance:		
Region 2: Central California coastal project, California.	Possible transfers between central California coastal streams and importations from other areas.	
Region 3: Colorado River diversion projects, Arizona-New Mexico.	Between tributaries of the Colorado River in Arizona and New Mexico.	
Region 4: Central Utah project, ultimate phase, Utah.	From the Colorado River Basin into the Bonneville Basin.	
Region 5:		
Kansas basins project, Kansas.	From streams in eastern Kansas to water deficient western areas of the State.	
Oklahoma basins project, Oklahoma.	From streams in eastern Oklahoma to water deficient western areas of the State.	
Texas basins project, West Texas water supply unit, Texas.	From Interbasin Canal of potential Texas Basin project into "high plains" area of west Texas by direct diversions or exchange.	
Feasibility investigations:		
Region 1:		
Southwest Idaho water development project, Garden Valley Division, Idaho.	From Payette River Basin to Boise River Basin.	
Umatilla Basin project, Oregon.	Possible diversions from John Day River Basin into Umatilla River Basin.	
Region 2:		
Central Valley project Delta Division, peripheral canal, California.	From Sacramento River to San Joaquin River.	
Central Valley project, East Side Division California.	From American River and northern tributaries of San Joaquin River to southern San Joaquin Valley.	
Central Valley project, San Felipe Division, California.	From San Joaquin River Basin into Santa Clara Valley.	
North Coast project, California.	From coastal streams of northern California into Sacramento River Basin.	
Lake Tahoe project, California-Nevada.	From American River into Lake Tahoe Basin.	
Region 3: Lower Colorado River Basin project, Arizona, California, Nevada, and New Mexico.	From Colorado River into Gila River Basin.	
Black River-Springerville-St. Johns project, Arizona.	From Salt River into Little Colorado River Basin.	
Region 4:		
Bear River project, Idaho-Utah.	From Bear River into Cache Creek and Malad River Basins.	
Region 5:		
Eastern New Mexico water supply project, New Mexico.	From Canadian River Basin into Pecos River Basin.	
Texas Basins project, Texas.	From northeastern gulf coastal streams to the southwestern coastal streams.	

*General investigations—Continued*

## MISSOURI RIVER BASIN INVESTIGATIONS

<i>Projects</i>	<i>Remarks</i>
Feasibility investigations:	
Region 6:	
Marias-Milk unit, Montana.	From Marias River Basin to Milk River.
Oahe Unit, South Dakota.	From Missouri River Basin to James River Basin

RECONNAISSANCE STUDIES OF PROJECTS WHICH MAY DEPEND UPON INTERSTATE  
TRANSFER OF WATER

The only reconnaissance studies underway of projects which may depend upon interstate imports are those of the central Utah, ultimate phase, and the San Juan County Basin, both in Utah. The need for importations will depend, first, on whether an economically justified and financially feasible plan can be developed and, secondly, on the scope of the plans adopted for the projects.

Senator JACKSON. You mentioned some of these projects. You are referring I take it to the Lower Colorado River Basin project. Would that project or projects be unfeasible unless water diversion is approved?

Mr. DOMINY. The projects that are before Congress under the heading of the Lower Colorado River Basin project are all completely feasible engineeringly and economically without the importing of additional water from outside of the Colorado drainage basin. It is true that over the life of the project there would be envisioned a gradual shortage of water for some of the uses, but it is still economically feasible. The project can be repaid, and it still would be desirable to construct the project and utilize the existing supplies of water in the Colorado River Basin.

Senator JACKSON. You are referring to the item in region 3 on page 2 of the bill, in section 1(a), line 13, which is the Lower Colorado River Basin project.

Mr. DOMINY. Yes; that is correct, sir.

Senator JACKSON. That is all for now.

Senator ANDERSON. Senator Jordan?

Senator JORDAN. Would the Bear River project call for the transfer of—

Mr. DOMINY. The Bear River project involves the use of waters of an interstate stream within Idaho and Utah, and the project, of course, will never be authorized and constructed until there is some agreement between Idaho and Utah on the total project plan.

Senator JORDAN. There has been a controversy in our State over it, and I hope that we can resolve some of those differences.

Mr. DOMINY. Yes. This has been a very difficult project to get a consensus among not only the people within either State, but the people between the two States.

Senator JORDAN. What is the status of the Bruneau division in your study?

Mr. DOMINY. I will ask Dan McCarthy to respond to that question, Senator Jordan.

Mr. McCARTHY. We have the Bruneau division scheduled for start of investigation in 1970, in our present schedule.

Senator JORDAN. To start in 1970?

Mr. McCARTHY. Yes, sir.

Senator JORDAN. If it were started earlier than that, would it require an amendment to this bill?

Mr. DOMINY. That is correct. It will require approval by Congress in advance, and we have not requested it in the bill that is before you.

Senator JACKSON. A point of clarification. The Bear River project that you are referring to, Senator Jordan, how much of that is in Utah and how much in Idaho? It is under region 4.

Senator JORDAN. Yes.

Senator JACKSON. Could the Department respond to that?

Mr. DOMINY. The Bear River project that we are studying would involve the construction of Oneida Narrows Dam to regulate the remaining floodwaters in the Bear River. The proposal would be to split the water about half and half between the States of Idaho and Utah.

Senator JACKSON. How many acres would be benefited in Utah and how many in Idaho? You said split in half. I didn't quite understand.

Mr. DOMINY. Split the water supply about half and half.

Senator JACKSON. But the actual physical project, the dam you referred to, will be in Utah?

Mr. DOMINY. In Idaho.

Senator JACKSON. Will be in Idaho?

Mr. DOMINY. Yes, sir.

Senator JACKSON. You will split the water. So how much will that be in terms of acreage available?

Mr. DOMINY. The project plan as it is unfolding develops about 40,397 acres of land to be irrigated by the full water supply from the project, and there would be supplemental water for about 33,683 acres now inadequately served. There would be 43,000 acre-feet of water assigned to municipal and industrial water supply.

Senator JACKSON. How much?

Mr. DOMINY. 43,000 acre-feet annually, and about 85,000 acre-feet annually would be assigned to fish and wildlife enhancement under the plan that is being considered.

Senator JORDAN. I might state for the record that there is a compact, Senator, between Utah and Idaho with respect to the Bear River, and there are some who believe that the Bear River compact is being violated by this bill and its quota snarl.

Senator JACKSON. There is some controversy.

Senator JORDAN. Yes, quite a bit of controversy.

Senator JACKSON. Without regard to that, do you plan utilizing power revenue to subsidize this project?

Mr. DOMINY. There would be no power on this project. It would have to be paid out by the municipal water users and the irrigation interests except for the nonreimbursable allocations to whatever functions were properly so considered under existing law.

Senator JACKSON. But you would not need any funds from power revenues?

Mr. DOMINY. It is very likely that the project plan would be beyond the repayment ability of the irrigators without some assistance. The Idaho portion is being considered for possible application of Bonneville Power System revenues.

Senator JACKSON. What about the Utah portion?

Mr. DOMINY. The municipal and industrial water would pay their own way and assist on the irrigation repayment on the Utah portion. They have a conservancy district ad valorem tax, too.

Senator JACKSON. You are not contemplating in your study the use of Bonneville power revenues inside Utah?

Mr. DOMINY. No, sir; not out of the Columbia River drainage.

Senator JACKSON. Part of this project may be in the Columbia Drainage Basin.

Senator CHURCH. The Idaho part would be within.

Mr. DOMINY. Yes, within the BPA marketing area.

Senator JACKSON. The Utah part is not within the BPA marketing area.

Mr. DOMINY. That is correct, sir.

Senator JACKSON. That is all I have.

Senator JORDAN. Talking about the Bruneau project, in the judgment of the Department, would not the Bruneau project fit very well with the Southwest water development project? Senator Church and I and others have introduced a bill for this project in this session of the Congress. Is not the Bruneau project a reasonably integral part of that Southwest development?

Mr. McCARTHY. Yes, sir. As we contemplate it, the southwestern Idaho project would encompass the Mountain Home division, the Garden Valley division, the Weiser division, and the Bruneau division. These four divisions would form a compact unit to develop the water and land resources of southwestern Idaho.

We have a report on the Mountain Home division, and on Garden Valley Dam Reservoir and powerplant which will be coming up to Congress within the next year, we hope, proposing authorization of the first part of the southwest Idaho development project. We are studying the Weiser division and the Bruneau division so that in later years we can bring these in as proposed expansions and additions to the nucleus which would be formed by the Mountain Home and Garden Valley divisions.

Senator JORDAN. And how soon do you calculate, under the present timetable, to start studies on the Bruneau division?

Mr. McCARTHY. Our present schedule is to start studies in 1970.

Mr. DOMINY. Fiscal year 1970.

Senator JORDAN. I sincerely hope, Mr. Chairman, we can accelerate that study along with other divisions of this Southwestern water development project.

Senator ANDERSON. Any further questions?

Senator JORDAN. No.

Senator ANDERSON. Senator Church.

Senator CHURCH. Thank you, Mr. Chairman.

I just want to join with my colleague, Senator Jordan, in the matter of including the Bruneau project along with all of the other elements of the southwest Idaho water development bill. As I understand it, all other elements are presently included in this authorization, the Bruneau division being the only one that has been left out; is that correct?

Mr. McCARTHY. That is correct, yes, sir.

Senator CHURCH. I think that, inasmuch as we are contemplating here a fully integrated, comprehensive development program, that in the interests of maintaining a balanced timetable, we ought not to

leave one of the four elements of the total package out. I would propose amending this bill to include the Bruneau project so that the whole of the development is embraced. What would your reaction be to that?

Mr. DOMINY. We would have the capability of including the Bruneau along with these others. There is no valid reason that it is left out except that it was one that could be postponed we felt. We were under quite a tight limitation as to the inclusion of additional projects. We wanted to hold it down to the smallest possible number, particularly this first year when there is such a package, as Senator Anderson pointed out, to get us launched under this new legislative requirement.

Senator CHURCH. As I understand this bill, if the Bruneau part of the Southwest water development project were included, the effect would merely be to authorize all of the studies that relate to this particular project.

Mr. DOMINY. That is correct.

Senator CHURCH. But you would still be free, within your own timetable, to proceed from one to another in an orderly way.

Mr. DOMINY. That is correct, sir.

Senator CHURCH. So I take it you would have no objection to an amendment of the kind that I have proposed.

Mr. DOMINY. No, sir.

Senator CHURCH. There are two other smaller Idaho projects that I would like to query you on. One is the Oakley-Fan feasibility study. As I understand it, your plans would be to initiate feasibility studies in fiscal year 1968 on the Oakley-Fan Division of the Salmon Falls project.

Mr. DOMINY. That is correct, sir.

Senator CHURCH. For some time now residents of that area have been pressing for action. I know Senator Jordan has been very much aware of this, as well as I. There is a very serious need for supplemental water there for approximately 62,000 acres of land. The residents are forming a conservancy district to accept the obligation of irrigation costs in anticipation of Federal assistance. I think the Bureau of Reclamation has also recognized the need to assist in this land development.

Would there be any reason why you might object if this particular study were advanced to fiscal year 1967?

Mr. DOMINY. My only problem, Senator Church, is the budget does not include it, and we do have a very tight ceiling on our budget, and therefore we had scheduled it for a new start in fiscal 1968. Actually there is strong local interest, and the project is a most desirable one. We feel that it will have a very desirable benefit-cost ratio based on our reconnaissance studies. It looks like about 2.6 to 1, and is a project that ought to be studied as soon as we can incorporate it into our budget.

Senator CHURCH. Here again the bill before us would have the effect of authorizing that study. The question of getting money to implement your timetable is one that relates to appropriation committees.

Mr. DOMINY. Yes. There was a question raised earlier in our discussions as to whether the section 3(b) should properly remain in the bill or not, inasmuch as it does authorize a year in advance, but this is something for the Congress to determine.

Senator CHURCH. There is one other smaller project, but one that has aroused keen local interest. That is the Big Wood project, where an earlier feasibility study was made some years ago. Now interest has been revived in a modified version of this project. I think it was first proposed as a reclamation project to provide supplemental irrigation water to 15,000 acres, and now the study is to be extended to consider needed flood control and recreational benefits. This is up in an area where record snow packs in the Sawtooth Mountains have caused serious flood problems in recent years, and at the same time increasing numbers of vacationing Americans have been visiting the Sun Valley and Stanley Basin region so that the recreational aspects of this project have taken on renewed, and I think expanded importance.

Here again I think that the bill provides that this study should begin in fiscal year 1968; is that correct?

Mr. DOMINY. That is correct, Senator Church. The lands involved here, about 15,000 acres, are short of water in the late summer, and yet the stream floods rather frequently, as you pointed out.

Senator CHURCH. Yes.

Mr. DOMINY. So the project plan would not only provide for flood control, but it would provide for leveling out those waters, for recreational use and for the full irrigation of about 15,000 acres now inadequately served. There is strong local interest in the area, and, as you say, we did study it from the reconnaissance point of view in 1953. It looks like there would be a favorable benefit-cost ratio of about 2.4 to 1.

Senator CHURCH. Both of these, the Oakley-Fan and the Big Wood projects, though they are comparatively small, seem to be highly desirable, and in both cases there is very keen local interest. Can you give us an estimate of what you think the costs would run for completing these two studies?

Mr. DOMINY. Our estimate for planning the Big Wood division is a total estimate of \$255,000, of which we have already expended in the reconnaissance phase about \$53,000, which leaves \$202,000 for the balance to complete that study.

On the Oakley-Fan, we would need an estimated total of \$400,000 to complete the study.

Senator CHURCH. Thank you very much, Mr. Chairman.

Senator ANDERSON. Senator Burdick.

Senator BURDICK. Mr. Chairman, can any of you gentlemen tell me at what stage the Cannonball project is and the Mott unit in North Dakota?

Mr. DOMINY. I would like Mr. Jim Casey to reply.

Senator BURDICK. It is on page 13 of the bill. I just want to know if that is one of the group of 47.

Mr. CASEY. Yes, Senator Burdick, it is. It is in what we call section 1(b), one of the 35 projects that is scheduled for substantial completion by the end of the fiscal year.

Senator BURDICK. That is all.

Senator ANDERSON. You are readily satisfied.

Senator METCALF?

Senator JACKSON. All you are asking for is ratification?

Senator CHURCH. Like the cymbal player in the orchestra who waits all through Tosca.

Senator METCALF. Mr. Chairman, I want to ask a couple of questions about a project just for clarification. On the Missouri, the feasibility studies on the Cracker Box and Stipek units, according to your report, are already underway and are scheduled to be completed in fiscal 1967. This is on page 119 of this information for legislation that you were talking about. However, if this legislation does not pass, will you have to stop the feasibility studies?

Mr. DOMINY. That is correct. This legislation is very explicit that following July 1, 1966, without authorization by act of Congress, we are not authorized to conduct feasibility studies.

Senator METCALF. And on the West Bench unit, which is the highest unit on the Missouri, you have a feasibility study underway that according to your report—this is on page 43—is scheduled to be completed by the end of fiscal 1966. Why does that have to be in?

Mr. DOMINY. For the same reason. Until Congress has acted and we complete all of our work on these, we would not have the authority to expend even a few dollars to wrap up a report or make another study that Congress might require in considering the projects for feasibility authorization.

Senator METCALF. Even though you did complete it in fiscal 1966, you think there might be some legislation that would be necessary.

Mr. DOMINY. That is correct. Secretary Holum pointed that out in his statement. We fear that we might not be able to even respond to a legitimate inquiry of the authorizing committee for additional information that would cost us maybe \$400 or \$500 to have a field report supplementing that of the authorization report.

Senator METCALF. Now I want to ask you, are you familiar with the Moorhead project in southeastern Montana and in northeastern Wyoming?

Mr. DOMINY. Yes, sir, I was county agricultural agent in Campbell County, Wyo., just to the south of that area.

Senator METCALF. At one time that was an authorized project, was it not?

Mr. DOMINY. That is correct. It was authorized as part of the 1944 Flood Control Act, and, as Senator Anderson so correctly pointed out, some of the authorizations in that broad undertaking were not based upon feasibility grade study, and the Bureau of Reclamation did actually start construction of the Moorhead unit by locating a construction camp and preparing to get it underway at one time, back in about 1947. But the problem arose in which the State of Wyoming opposed the flooding of its lands, the dam being located just over the line in Montana with the reservoir area being almost entirely in Wyoming. Few of the benefits, at least for diversion and use of the water, would accrue in Wyoming.

Now, whether Wyoming would still be opposed, now that recreation and fish and wildlife and other values of a reservoir have become more widely recognized than they were in 1947, I cannot say. Also since that time, too, we have attempted to locate some units in Wyoming that would benefit from control of the Powder River.

Senator METCALF. According to some correspondence and some discussion with local people in Wyoming, there is a renewed interest in Moorhead Dam as far as the people of Wyoming are concerned. You have pointed out some of the reasons that people in Wyoming are again interested. I do not know whether, after another study, they

would consent to the inundation of all that land, unless there were a better agreement between the States of Montana and Wyoming.

Mr. DOMINY. Mr. Casey has a little up-to-date information on that. I would like to have him supplement what I have said, Senator Metcalf.

Mr. CASEY. Our activity on the Moorhead, Senator Metcalf, stems from the renewal of interest by Wyoming representatives who are seeking municipal and industrial water supplies, basically as a source of cooling water for thermal electric generation. At this time our findings are quite tentative, although they are optimistic that we could develop industrial water there at a price that would be attractive to power producers. We have not gone into the detailed hydrology and related matters.

Senator METCALF. In view of the fact that this Moorhead project has already been authorized by the Flood Control Act of 1944, and is one of those projects Senator Anderson spoke about, and for the reason that there are many different conditions surrounding the feasibility study which confronts us today that were not applicable when this authorization was made, is it your opinion that we need new authority for a feasibility study?

Mr. DOMINY. Not only for the feasibility study, but we need a new construction authorization, since, in effect, the Congress has deauthorized all Missouri Basin units.

Senator METCALF. This is a prime example of the kind of thing that Senator Anderson was talking about.

Mr. DOMINY. That is exactly right.

Senator METCALF. The Flood Control Act of 1944 was passed, and sometimes we did not take into consideration all the things that we are concerned with. Would your Bureau be adverse to a proposed amendment to include Moorhead as a part of the investigation and feasibility study?

Mr. DOMINY. No, sir.

Senator METCALF. Thank you, Mr. Chairman.

Senator ANDERSON. These Senators keep getting favorable answer so I think I will ask one myself.

The conservation division in my State is interested in the Mimbres project. They think that for \$15,000 the waterside study of this project can be completed in fiscal 1967. Could that be included, too, at this state of the game?

Mr. DOMINY. The Mimbres project that we have included in our program for 1968, new start under this bill, involves 1,200 acres of supplemental irrigation, involves an estimated allocation of about \$1,075,000 to fish and wildlife, and an estimated allocation for recreation of about \$1,742,000. Based on our reconnaissance, we believe this project would have a benefit-cost ratio of almost 1.8 to 1.

As I say, we are prepared to undertake the study in fiscal 1968 if this authorization were approved, and if we were to get it included in our fiscal 1968 budget request.

Senator ANDERSON. This is pretty largely a question of the State game and fish department wanting to develop it for their own use. They are putting a substantial amount of State money into it.

Mr. DOMINY. That is correct.

Senator ANDERSON. The total list contains 114 investigations presently underway or completed. These involve 2.5 million acres

of new land and 3.8 million acres of land to get supplemental water. Have you any idea what these total projects might cost when they are completed?

Mr. DOMINY. The actual construction costs of these projects?

Senator ANDERSON. Yes.

Mr. DOMINY. Yes, we have some figures on that, sir. For the projects included in section 1(a), which are the ones that are already complete and they are actually before Congress for consideration of your committee and the House Committee on Interior and Insular Affairs, the construction costs amount to \$1,437,200,000. The projects included in section 1(b), which are those that will be completed essentially by the end of this fiscal year, would have a total construction cost of \$2,790,100,000. The projects included in section 2, which are the remaining projects already underway by authority previously available to us under general reclamation law, if they were to be constructed, would have a total cost of \$5,825,500,000.

The projects in 3(a) for new start feasibility investigation in fiscal 1967, \$112,800,000, total construction cost.

The projects in 3(b) for authorization of new start feasibility study in fiscal 1968, \$443,800,000.

Senator ANDERSON. Just projects in 1(a), 1(b), and 2 would run about \$10 billion, is that right?

Mr. DOMINY. That is correct. Now, I think it would be well for us to take a quick look at a chart which shows the present status of our construction program, and the limits of present authorization. We are running now at a little over \$300 million a year on the average for construction and rehabilitation. Fiscal 1967 is down a little bit, but the going work including the new starts that will be included in fiscal 1967 budget as recommended by the President will force us to go back up in 1968 in order to continue the going work at an optimum level of construction. Then without new authorizations, just to complete the work presently authorized for construction—I am not speaking now of authorizations for feasibility studies, I am speaking of new project authorizations for construction—there is a downward trend that would immediately follow as we complete the construction of work already underway.

Of course, if we were to get the third powerplant at Grand Coulee and some other work authorized this year, we would have no problem in continuing the work for a few years longer at about the current level. But we do not have a major backlog of authorized projects ready for construction as this clearly indicates.

Now there is a second chart that I would like you to take a quick look at, just for your information. The orange at the top represents the Corps of Engineers total program for flood control and multiple-purpose programs. That does not include their harbor work. This is just their flood control reservoir and diking program similar to Reclamation's water program. You can see that their program has been going up sharply. That is their total program. It is up now almost to \$1 billion a year. Our program was comparable to theirs on an annual basis, in fact, it was somewhat greater back just two decades ago, or a decade and a half ago. Ours has been going up at a much more modest level than the Corps program. Of course the Soil Conservation Service and the Health, Education, and Welfare program has been going up more sharply as well.

Senator JACKSON. Where would the line be of authorized projects that we are talking about here in terms of feasibility study?

Mr. DOMINY. If we were to assume—

Senator JACKSON. Go back to that other chart.

Mr. DOMINY. Yes, to go back to the other chart, if we were to assume that all of the projects included in this legislation, Senate bill 3034, were studied and found to be feasible, and Congress authorized them in an orderly schedule based on our completion of the studies, it would be theoretically possible to peak in 1975 at a program level of something over \$700 million a year in construction.

Senator JACKSON. But what about prior to 1975? I understand you would reach a peak in 1975.

Mr. DOMINY. Yes.

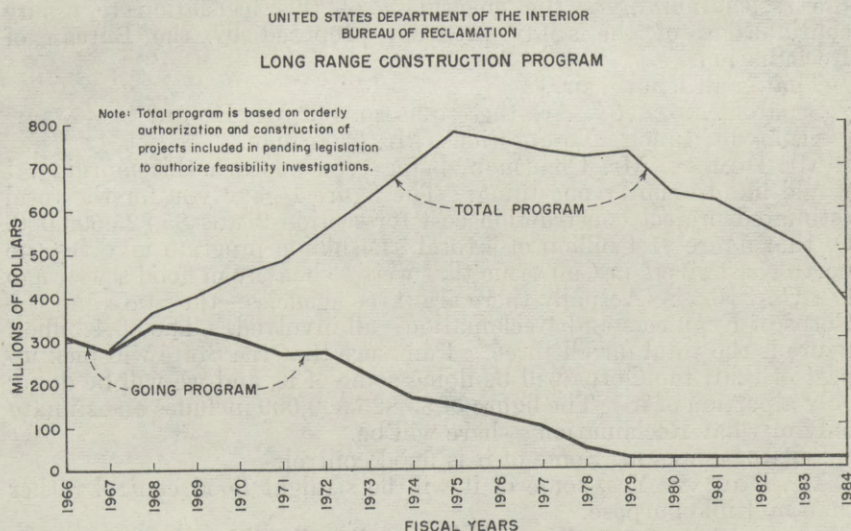
Senator JACKSON. Would you be maintaining your level, such as indicated for 1968?

Mr. DOMINY. Actually it is theoretically possible, Senator Jackson, to have a trend line about equal to that red line, and perhaps a bit steeper if all the projects now before Congress were authorized, and additional ones authorized in a year or two as we completed those studies.

Senator JACKSON. Suppose you submit a chart that would reflect what you have asked for in this bill, in relation to the chart that—

Mr. DOMINY. Yes, I have a chart here that I can give each of you now, and we can include that in the record if you would like.

(The chart referred to follows:)



Senator ANDERSON. Mr. Dominy, the reason some of these questions were asked is that we feel it was the intent of Congress to take a good look at these proposals. Here is something that is going to run \$10 billion if we approve them all in just 1(a), 1(b), and 2. Therefore I think the committee does have a responsibility to take a good hard look at it and examine each project if they can.

Mr. DOMINY. I have no disagreement with this whatever, sir. I think this is a legitimate inquiry on the part of Congress.

Senator ANDERSON. Very well, are there additional questions?  
(No response.)

Senator ANDERSON. If not, thank you very much.

We will try to finish here very quickly with Mr. Bronn.

#### STATEMENT OF CARL BRONN, EXECUTIVE DIRECTOR, NATIONAL RECLAMATION ASSOCIATION

Mr. BRONN. Mr. Chairman and members of the subcommittee, I am Carl Bronn, the executive director of the National Reclamation Association. I relieved Bill Welsh, who has been coming here, I think, for the past 17 years.

With regard to Senate bill 3034, the general investigations proposed there in have been reviewed by each of the State directors of the National Reclamation Association. As a result, the president of the association, Mr. Harold Christy, has requested that I advise your committee that the association favors the scope of study as presented.

The association urges that there be no significant reduction in the scope of work proposed. The association considers that the water problems of the West are becoming increasingly complex; the solution to those problems will require an effective organization for field study and for review. The current program is reportedly of a size to retain a going organization; also the program seems adequate for needs known to the National Reclamation Association. Therefore, the association urges the enactment of this legislation to assure continuation of the study program proposed by the Bureau of Reclamation.

That is all I have, sir.

Senator ANDERSON. Are there questions of Mr. Bronn?

Senator CHURCH. No questions, Mr. Chairman.

Mr. DOMINY. Mr. Chairman, before you adjourn this morning, I would like to clarify one thing. The figure I gave you for the total estimated project construction cost for section 2 was \$5,825,500,000. Of that figure \$1.4 billion of a total \$3.4 billion program involves the north coast rivers in California that were so heavily in flood a year ago last Christmas. Actually there are three agencies—the State and the Corps of Engineers and Reclamation—all involved. The \$3.4 billion figure is the total for all three. I am sure that the State will pick up part of that, the Corps will be doing some of it, and we will be doing only a portion of it. The figure of \$5,825,500,000 includes an estimate only of what Reclamation's share will be.

Senator JACKSON. Some of it is flood control.

Mr. DOMINY. Yes, some of it will be straight flood control rather than multiple purpose.

Senator ANDERSON. We are adjourned until Wednesday.

(Whereupon, at 11:35 a.m. the subcommittee recessed, to reconvene Wednesday, March 30, 1966.)

## FEASIBILITY INVESTIGATIONS

MONDAY, APRIL 25, 1966

U.S. SENATE,  
SUBCOMMITTEE ON WATER  
AND POWER RESOURCES OF THE COMMITTEE  
ON INTERIOR AND INSULAR AFFAIRS,  
*Washington, D.C.*

The subcommittee met, pursuant to notice, at 10:07 a.m., in room 3110, New Senate Office Building, Senator Clinton P. Anderson, presiding.

Present: Senators Anderson, Jackson, Moss, Kuchel, Allott, and Jordan of Idaho.

Also present: Jerry T. Verkler, staff director, Stewart French, chief counsel; Roy M. Whitacre, professional staff member; Frederick O. Frederickson, special counsel; Ellery Fosdick, consultant; and E. Lewis Reid, minority counsel.

Senator ANDERSON. We are discussing S. 3034.

Mr. DOMINY. Yes, sir.

Senator ANDERSON. Are you ready for questions?

**STATEMENT OF FLOYD E. DOMINY, COMMISSIONER, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR; ACCOMPANIED BY GILBERT STAMM, ASSISTANT COMMISSIONER, BUREAU OF RECLAMATION; DANIEL McCARTHY, CHIEF, PROJECT DEVELOPMENT DIVISION, BUREAU OF RECLAMATION; AND JIM CASEY, ASSISTANT CHIEF, PROJECT DEVELOPMENT DIVISION, BUREAU OF RECLAMATION**

Mr. DOMINY. I am prepared to proceed in whatever way the committee desires.

Since we met before, we have attempted to supply to the staff of the committee detailed answers to questions that were furnished. We received just a day or two ago some general questions which I would like to comment on.

The first question refers to projects that have been authorized by Congress that are under construction now and not yet completed. The specific question is, what do you estimate it will cost to complete each of the presently authorized reclamation projects?

We have a table here which we will be glad to put in the record at this point if the chairman desires.

Senator ANDERSON. We will have it in the record, yes.

(The table referred to follows:)

Name and location of project (2)	Total estimated obligations (3)	Obligations to June 30, 1965 (4)	Fiscal year 1966 (5)	Balance to complete
<b>CONSTRUCTION AND REHABILITATION</b>				
Completed divisions and projects	\$1,054,433,946	\$1,054,433,946		
Completed rehabilitation and betterment work	14,986,603	14,986,603		
Projects inactive during fiscal year 1966 and fiscal year 1967	93,679,722	90,913,945		\$2,765,777
Divisions and projects under construction or proposed fiscal, year 1967:				
Advance planning	496,000		\$90,000	406,000
Arbuckle, Okla.	12,383,000	3,148,238	4,231,762	5,003,000
Baker, upper division, Oregon	7,195,000	804,485	2,450,515	3,940,000
Canadian River, Tex.	83,000,000	52,848,899	15,401,101	14,750,000
Central Valley, Calif.	1,899,656,000	896,897,275	110,431,986	892,326,739
Chief Joseph Dam, Oroville-Tonascket unit, Washington	3,310,000	281,224	950,000	2,078,776
Chief Joseph Dam, Whitestone Coulee unit, Washington	5,110,000		210,000	4,900,000
Colorado River front work and levee system, Arizona	34,450,000	19,349,147	3,951,917	11,148,936
Columbia Basin, Wash.	983,609,000	572,117,497	9,397,477	402,094,026
Crooked River extension, Oregon	1,065,000		300,000	765,000
Denver office building, Colorado	7,000,000	2,741,057	2,964,943	1,294,000
Dixie, Utah	42,530,000	546,048	987,952	40,996,000
Drainage and minor construction program, various	675,808,926	634,795,155	7,364,667	33,649,104
Fryingpan-Arkansas, Colo.	180,556,000	8,126,488	10,123,512	162,306,000
Lower Rio Grande rehabilitation, Mercedes Division, Texas	10,760,000	9,423,799	528,066	808,135
Mann Creek, Idaho	4,060,000	388,000	1,150,000	2,522,000
Missouri River Basin, various	1,227,973,171	766,759,006	50,648,654	410,565,511
Pacific Northwest-Pacific Southwest Intertie, Arizona-California-Nevada	130,630,000	4,547,849	16,911,782	109,170,369
Parker-Davis, Arizona-California-Nevada	143,300,658	141,068,260	760,398	1,472,000
Rehabilitation and betterment, various	54,567,236	29,235,392	3,380,969	21,950,875
Spokane Valley, Wash.	6,881,000	1,247,944	2,860,000	2,773,056
Washoe, Nevada-California	50,189,000	5,818,270	651,697	43,719,033
Weber Basin, Utah	103,387,000	83,118,737	4,325,626	15,942,637
Total, construction and rehabilitation	6,831,017,262	4,393,597,264	250,073,024	2,187,346,974
<b>UPPER COLORADO RIVER STORAGE PROJECT</b>				
Divisions, units, and projects under construction:				
Colorado River storage project:				
Curecanti Unit, Colorado	91,000,000	41,139,377	13,228,805	36,631,818
Glen Canyon Unit, Arizona-Utah	249,741,000	238,192,041	5,577,819	5,971,140
Transmission division, various	151,292,000	92,959,755	14,830,127	43,502,118
Participating projects:				
Bostwick Park, Colo.	4,760,000	34,250	350,000	4,375,750
Central Utah, Bonneville unit, Utah	314,108,000	4,981,033	3,100,000	306,026,967
Lyman, Wyoming-Utah	10,837,000	486,438	722,747	9,627,815
San Juan-Chama, Colorado-New Mexico	87,660,000	7,799,288	8,712,312	71,148,400
Silt, Colo.	6,710,000	2,864,414	2,390,586	1,455,000
Drainage and minor construction:				
Colorado River storage project:				
Flaming Gorge Unit, Utah-Wyoming	65,616,407	65,536,176	80,231	
Navajo Unit, New Mexico-Colorado	38,037,062	37,071,158	355,904	610,000
Participating projects:				
Central Utah, Vernal unit, Utah	8,682,153	7,133,404	222,416	726,333
Emery County, Utah	12,874,000	9,740,786	2,026,134	1,107,080
Florida, Colo.	10,736,300	10,612,643	123,657	
Hammond, N. Mex.	4,366,969	3,419,751	302,863	644,355
Paonia, Colo.	7,491,096	7,397,695	13,401	80,000
Seedskadee, Wyo.	45,009,000	18,884,122	1,933,552	24,191,326
Smith Fork, Colo.	4,395,803	4,289,639	65,164	41,000

Name and location of project (2)	Total estimated obligations (3)	Obligations to June 30, 1965 (4)	Fiscal year 1966 (5)	Balance to complete
<b>UPPER COLORADO RIVER STORAGE PROJECT—continued</b>				
Divisions, units, and projects under construction—Continued				
Advance planning-----	\$3,252,798	\$1,462,302	\$665,496	\$1,125,000
Construction of recreational and fish and wildlife facilities (Sport fisheries and wildlife) (National Park Service)-----	65,103,900 (22,128,600) (42,975,300)	11,742,744 (1,885,393) (9,857,351)	7,358,756 (3,428,607) (3,930,149)	46,002,400 (16,814,600) (29,187,800)
Total, Upper Colorado River storage project, under construction-----	1,181,073,488	565,747,016	62,059,970	553,266,502
Authorized but not under construction or proposed, fiscal year 1967:				
Pecos River Basin water salvage, New Mexico-Texas-----	2,500,000		50,000	2,450,000
Upper Colorado River Basin, central Utah project:				
Jensen unit-----	7,284,000			7,284,000
Upalco unit-----	11,196,000			11,196,000
Fruitland Mesa project, Colorado-----	26,817,000			26,817,000
Savery-Pot Hook project, Colorado-Wyoming-----	15,406,000			15,406,000
Teton Basin project, Idaho, lower Teton Division-----	51,450,000			51,450,000
Dixie project, Utah-----	42,530,000	546,048	987,952	40,996,000
Southern Nevada water supply project-----	80,769,000	283,403		80,485,597
Total, authorized but not under construction-----	237,952,000	829,451	1,037,952	236,084,597
Total-----	8,250,042,750	4,960,173,731	313,170,946	2,976,697,773

Mr. DOMINY. The balance to complete on all presently authorized projects would be \$2,976,697,773. The largest single project would be the Central Valley of California, \$892,326,739. This is by reason of the Auburn Dam, which was just authorized. We are just starting it, and it is about a \$425-million project. Also included are the continuation of the largest single irrigation district, the Westlands Irrigation District, which was just started this year, and the Sacramento canals unit.

Senator ANDERSON. Is the central Utah project in there also?

Mr. DOMINY. Yes; under the Colorado storage project. Yes; it is in this list.

Senator ANDERSON. How much are you asking for that?

Mr. DOMINY. It is broken down by various units. The largest one would be the Bonneville unit of the central Utah project, \$306,026,967. There are three smaller units that total less than \$20 million in addition to that.

Senator ANDERSON. Someone told me they have a bond issue which was passed by a conservancy district there.

Mr. DOMINY. They have voted on formation of their conservancy district which is required under the Colorado Storage Project Act and passed that with a large majority.

Senator ANDERSON. There was a bond issue of some kind that passed. How do you relate the bond issue to the Colorado River project?

Mr. DOMINY. I do not know of any bond issue required unless it would be for municipal and industrial works beyond what we would

supply under our project. The only vote I know of was the conservancy district vote in accordance with the requirement of the authorizing act. Now, under these major projects—

Senator ANDERSON. I wonder what that report was all about?

Mr. DOMINY. I know about the conservancy district vote which was recently held, but I do not know anything about a bond issue vote. Included in this \$3 billion is \$402 million for the Columbia Basin project, Washington.

Senator ANDERSON. Which one is that?

Mr. DOMINY. The Columbia Basin project. Completion of the project would, of course, be dependent upon the inclusion of a great deal more land into the irrigation district than is included now. So we do not know how soon or if ever that money would be spent, but it is part of the authorized projects.

Mr. FOSDICK. That is all part of the original project.

Mr. DOMINY. Yes, that is right. But at the moment we do not know—

Senator ANDERSON. The only irrigation we have up there is from the Grand Coulee Dam, is that not right? Way back, as far back as 1942.

Mr. DOMINY. Even before that. It was authorized by the act of 1935 and reauthorized by act of March 10, 1943.

As you know, Grand Coulee was built before the war and then we started with the irrigation right after the war. The first lands were irrigated in 1946.

Senator ANDERSON. How did it start?

Mr. DOMINY. It started under the old WPA authorization by the President, and certainly it is a good thing we had it because those electric generators certainly built a lot of aluminum and ships for us.

Senator ANDERSON. The WPA got some criticism in those days, but, of course, it disappeared.

Mr. DOMINY. Yes; it was supposed to be a white elephant, never be able to sell the power, you know. We did sell it as fast as we could get it on the line.

Now, the second question that was propounded, at what annual rate over the last 10 years has Congress been appropriating funds to complete reclamation projects, and how much of this was used for irrigated lands?

Senator ANDERSON. Mr. Fosdick and Mr. Frederickson, if you have questions as we go along, you may ask them.

Mr. FOSDICK. Surely.

Mr. DOMINY. The smallest annual appropriation in the last 10 years was the 1956 appropriation, \$145,928,000, of which \$88,674,000 was allocated to irrigation, and the largest annual appropriation in the last 10 years was in 1964, fiscal year 1964, \$314,037,000, of which only \$73,442,000 is for irrigation works.

Mr. FOSDICK. That was \$343 million, you say?

Mr. DOMINY. \$314,037,000, of which \$73,442,000 was for irrigation works. The annual average for the last 10 years has been \$218,987,000, with \$76,381,000 being the average annual figure for irrigation.

The irrigable acres that have been brought in, a good part of which was supplemental lands that were already being irrigated with inadequate water supply, averages about 180,000 acres per year for the 10 years, a total of 1,804,793 acres being involved in the 10-year period.

I will submit the details for the record.

(The information referred to follows:)

*Appropriations, irrigation allocation, and irrigable acres for past 10 years*

Year <sup>1</sup>	Construction appropriation		Irrigable acres
	Total	Irrigation allocation	
1955.....			135,965
1956.....	\$145,928,000	\$88,674,000	291,066
1957.....	158,473,000	97,728,000	188,797
1958.....	166,611,000	59,744,000	222,044
1959.....	207,103,000	69,439,000	51,819
1960.....	211,184,000	81,953,000	69,696
1961.....	228,648,000	93,312,000	63,524
1962.....	215,774,000	67,152,000	362,665
1963.....	269,406,000	44,825,000	189,446
1964.....	314,037,000	73,442,000	249,771
1965.....	272,707,000	87,544,000	-----
Total.....	2,189,871,000	763,813,000	1,804,793
Annual average.....	218,987,000	76,381,000	180,479

<sup>1</sup> Years shown are fiscal years for appropriations and allocations and calendar years for irrigable acreage. Data not available for calendar year 1965 for acreage.

Mr. DOMINY. I have answered No. 3 which is, "How much land has been brought under irrigation as a result of these appropriations?"

The fourth question, as to each project in section 1 of S. 3034, and insofar as possible in section 2, please furnish the committee with detailed breakdown of how the cost to benefits have been or will be determined and allocated.

We follow, of course, the standard allocation procedures that have been developed over the years and adopted by the administration with the approval of Congress. It is a changing method that has evolved over the years.

For example, formerly we did not allocate anything to recreation or fish and wildlife. We did not even allocate anything to flood control in the early days of irrigation development even though flood control was certainly an integral part of the functions.

Now each of the functions served is allocated to under the standard procedures and we follow exactly the same format that the corps and the Soil Conservation Service follow on projects involving water and land.

Mr. FOSDICK. And that is a uniform procedure for all projects?

Mr. DOMINY. A uniform procedure for all projects. It does not deviate except as the methods change over the years, but at any particular moment each project is analyzed exactly the same as the other one.

Now, five, can you tell us specifically the crops that will be grown in each of the projects in S. 3034 with estimated quantities of each.

Of course, we can do that only in a general way.

Senator ANDERSON I imagine the reason that is in there is that, when we passed the Upper Colorado River Storage Project Act we wanted to be sure that there were no crops put in that are being grown in surplus.

Mr. DOMINY. Yes. Congress in recent years has been writing into almost all project authorizations a limitation for a 10-year period on the growing of surplus crops.

Senator ANDERSON. I think that the world situation today is such that we will not be so worried about surpluses.

Mr. DOMINY. I agree with you.

Senator ANDERSON. Right now food is very important.

Mr. DOMINY. For the most part we can show historically that, generally speaking, we move out of the surplus crop categories when we convert these lands to irrigation. For example, the Columbia Basin project was a wheat and cattle country prior to the project, but as the lands go under irrigation they go out of wheat and shift into alfalfa and potatoes and row crops, and feed base for livestock feeding, sugarbeets, and that sort of thing. With the exception of cotton, which does thrive under irrigation and where you get your greatest yields and highest quality of cotton, it is pretty accurate to state that you shift from the surplus to nonsurplus as a result of irrigation.

Mr. FOSDICK. Mr. Dominy, does that necessarily mean you are going to the higher yield crops in dollar value?

Mr. DOMINY. Yes. And it also means that the farmer is released from the shackles of a one-crop economy. In the Missouri Basin, for instance, the reason you grow wheat, unless you have irrigation, is because that is the only crop you can grow on those high plains with limited rainfall. When he has a controlled quantity of water that he can draw on every year, the farmer will shift out of wheat because he can get higher returns from his labor and capital investment in other crops. Irrigation gives him the freedom of moving to meet the needs of the market much greater than he ever can under dry land agriculture.

Senator JACKSON. May I ask a question here? Some time ago the Department of Agriculture put out a statement that I believe it is by 1980 we will need something like 60 million acres less of farmland.

Mr. DOMINY. Yes. There have been a number of such statements in the last few years. The first one that came out stated that we were going to need considerably more land, particularly an increase in irrigation. This one came out about 6 or 7 years ago. Then that has been modified more recently to the one you referred to where they were predicting that we should continue to retire some of the lower-grade land. All of those predictions are based upon an upgrading of the better lands and taking into account there will be more irrigated agriculture. To get more efficient agricultural production it will be necessary to concentrate on the better lands and more irrigation, but retire less productive land.

Senator JACKSON. You can see how confusing this is to the layman. The statement was made that overall by 1980 we would need 60 million acres less farmland than what we now have in production. Confronted with that kind of a statement, the question is asked, What is the justification for an increase through irrigation or other means of bringing in additional lands?

Mr. DOMINY. When you read the fine print of that statement, you will find that it was predicated on an 8 million increase in irrigable acres during that same period.

Senator JACKSON. I think it would be useful, Mr. Chairman, if we could have a statement for the record which refers specifically to the agricultural report and then the Bureau's comments on it, because I think this is an important point which needs to be answered.

Mr. DOMINY. Yes. We will be happy to do that. But the significant point is that that same report was based on an increase in irrigable acreage in the United States of at least 8 million acres.

(The information requested follows:)

#### RECLAMATION COMPLEMENTS THE FOOD AND AGRICULTURE PROGRAM

A 1962 report of the Department of Agriculture entitled "Land and Water Resources—a Policy Guide" presented a balanced program of resource development and resource adjustment. Along with changes to bring the land devoted to crop production into balance with requirements, consideration was given to the need for conservation, development, and management programs in order to realize continuing maximum benefits from land and water resources.

The report stated, in part, that the Nation's food and fiber needs of 1980 could be met with 51 million fewer acres of cropland than were in production in 1959. This projection involves the conversion of 17 million acres of good forest and pasture to cropland use, and the retirement of some 68 million acres of submarginal cropland. The program also includes the irrigation of an additional 8.7 million acres. This reflects an upgrading and use of the best lands of the Nation.

An analysis of the full report clearly reveals that continued development of irrigation projects in the West is part and parcel of the Department of Agriculture's proposal. The Federal Reclamation Program and the Food and Agriculture Program are complementary. These two programs are not in conflict. The USDA program was described as an A-B-C-D Program—Abundance, Balance, Conservation, and Development. The Reclamation program qualifies in each of these objectives.

Secretary of Agriculture Freeman, with great clarity, emphasized the complementary nature of the Reclamation program and the program of the Department of Agriculture in a policy speech at Brawley, California, in March 1962. His statement was based on three foundation facts, as follows:

"1. To attempt to balance production with market needs by eliminating sound reclamation and irrigation projects would be tantamount to deliberately promoting inefficient use of agricultural resources.

"2. Reclamation and irrigation have a highly necessary role to play in the wise present and future use of national land and water resources.

"3. Most of the farm products coming from irrigated land are not the ones for which there are serious overproduction problems."

Continuing, Secretary Freeman said, in part:

"\* \* \* There is no conflict between sound reclamation and irrigation, and the proposed A-B-C-D program. The crops grown on reclaimed and irrigated land are not primarily crops that are seriously in surplus. \* \* \* It is unsound to suggest that the current imbalances which exist in some crops could be corrected by squeezing off water resource development in one section of the country.

"\* \* \* Irrigation makes it possible for farmers to diversify to crops which are more profitable and in current demand.

"As we look to the long-time future there is no question but that reclamation and irrigation must go forward. The concept fits logically into the abundance—balance—conservation—development approach \* \* \*."

During the period 1949–59, the latest Census data available, the irrigated acreage of the U.S. increased 7.2 million acres of which 90 percent was in the 17 Western States and 10 percent in the Eastern States. Most of the 8.7 million additional irrigated acres recommended by the Department of Agriculture by 1980, in its 1962 report, would be in the Western States, largely as federal projects. This compares with approximately 9 million acres served by Reclamation facilities constructed since 1902. The goal set forth by the Department of Agriculture for irrigation development in the Western States by 1980 would appear to be almost double the accomplishments of the Reclamation program in the past 60 years. A strong increase and continuing effort will be required to attain the recommended objective.

Mr. DOMINY. Now, the sixth question that was asked, for each of the projects proposed in section 1 and 2 of S. 3034, is, Would you supply the committee with a detailed statement of how the landowner's ability to pay for irrigation costs was computed.

Here again we follow standard procedures, relying on the development of farm budgets, taking the existing economy and changing it to

irrigated economy, taking into account the increased costs, increased productivity, and determining what, in fact, the water is worth. And then we try to get into the repayment contracts, 75 or 80 percent of that toward the repayment of the project capital cost.

On some projects, particularly the Central Valley project, a different approach to the payout of the project was taken right at the inception. That was a canal side delivery price. We recognized that in many cases this is far less than the measured or measurable ability to pay.

On the other hand, in the Central Valley project, we had contemplated and still contemplate that this water is like a utility operation in that the users will continue to pay for it for as long as they get the service, and they will not be relieved of a repayment figure when the project cost is paid out. Similarly, we will continue to sell power from these projects after the 50-year payment period is over and the revenues would be available either for further capital investment in these projects or be returned to the General Treasury.

Mr. FOSDICK. Just a comment there, Mr. Dominy. There seems to be a rather wide variation in the amount that the water users pay for water between various projects even though they may have somewhat similar crops. How does that happen if you use a uniform approach, as you indicate?

Mr. DOMINY. Well, of course, it is a measure of a specific area's ability to pay. You have to take into account the soil class, the number of days of the growing season and whether or not there is expensive drainage costs involved. On some projects the drainage costs are very nominal, and on others they are very high. Also, there may be delivery by pumping which runs up the O. & M. costs.

Therefore, there is less left to pay on the capital costs.

All of these things are taken into account, and it would not be expected that there would be great uniformity among projects in what is left out of the computation to apply on the capital cost. But we use exactly the same standard and processes in arriving at the figure in all cases.

Senator JACKSON. What about in one State where you may have a substantial amount of power revenues to draw on, a form of subsidy, and another State where they do not have that, assuming the same soil classification, and everything else is the same. Does the irrigator pay the same in both instances?

Mr. DOMINY. No. It means that in the instance where the power revenues are not available and subsidy is required, projects just are not built. There are very, very few projects that we have today where the irrigator can afford to pay the full costs of the development of the project.

Under the Small Projects Act, for example, where the irrigator does have to pay the full costs of the allocation, the great bulk of those projects have come from the 12-month growing season areas of California and Arizona and a few in the fruit growing valleys of Utah where they have been able to pay the full costs of the project.

Generally speaking, it is very difficult, any more, to find a project that can be built without power revenue assistance.

Senator JACKSON. Yes, but even where you use power revenues, what the irrigator pays will vary, will it not, under similar circumstances?

Mr. DOMINY. Well, the water user's ability to pay, as determined by our formula, certainly is not influenced by whether or not power revenues are available. The final judgment of whether we recommend the project is certainly influenced by whether or not power revenues are available. For example, a project in the Missouri Basin with the basin account available might cost \$600 an acre to develop. The farmer's ability to pay over a 50-year period might be \$200 an acre, and unless we had the \$400 from power revenue available, we could not recommend the project. If we had that project in Oklahoma or New Mexico, where there are no power revenues available, we just would not be recommending it.

Senator JACKSON. Supposing there were not enough power revenues to pay the \$400 so that you decided then that the irrigator had to pay \$250 or \$350, which in other areas come from power revenues. I mean, is there really a uniform standard that applies as far as what the irrigator must pay or is it subject to that which can be written off or that which can be subsidized?

Mr. DOMINY. Certainly we make a real effort to have uniformity in our approach to these general problems. In the final analysis there is a negotiation that has to take place in getting these projects finally constructed and the repayment contracts approved. If there are ample power revenues available, it makes it more difficult to get the full payment capacity from the farmer as contrasted to a project where he does not have another source of financing. But we certainly make the effort to be uniform in applying this principle of ability to pay.

Senator JACKSON. But it does not always work out that way, does it?

Mr. DOMINY. No. I am satisfied that there are some projects where water is being sold at less than the ability to pay, where the farmer is paying in some cases 60 or 70 percent of the costs and power revenue is picking up the balance. This is true in the Missouri Basin where the costs of delivery are higher because it is a settled area and right-of-way is more difficult and costly than in the desert or in undeveloped areas.

Senator JACKSON. Do you take into consideration what the consumer of power might have to pay eventually over the long pull by reason of use of a large part of the power revenues for irrigation subsidies?

Mr. DOMINY. As a matter of fact, we can document that the partnership between power and irrigation has been mutually advantageous both to the power user as well as to the irrigator. Take Grand Coulee Dam, for example. Were it built strictly for power, and it had no allocation to irrigation, the power rates would have to be higher to pay it out than it is with a substantial portion of the cost of that reservoir and dam allocated to irrigation interest free. So it is not—

Senator ANDERSON. I wonder, how much of the cost of that dam is allocated to irrigation?

Mr. DOMINY. A significant portion of it is allocated to irrigation.

Senator JACKSON. Of the dam proper?

Mr. DOMINY. Yes.

Senator JACKSON. What part? Do you have that?

Mr. DOMINY. We can supply that for the record.

(The information requested follows:)

The allocation to irrigation of the costs of Grand Coulee Dam proper amounts to 27.4 percent. The allocation to power is 43.1 percent and to flood control it is 29.5 percent.

Senator ANDERSON. Not a very small part.

Senator JACKSON. On the third powerhouse, none of the cost is allocated to irrigation.

Mr. DOMINY. That is a strictly power feature, but the basic cost of the dam is allocated substantially to irrigation. Even Glen Canyon Dam, because of the storage that takes place at Glen Canyon permits irrigation upstream, so a portion of Glen Canyon is very properly allocated to irrigation.

Senator JACKSON. But Grand Coulee is the only dam, other than Hungry Horse, in the Columbia River system that does have that allocation, is it not?

Mr. DOMINY. Well, all the others are principally power and navigation dams and would not have been as feasible without the storage at Grand Coulee. As run of the river dams, they would not have been as feasible except for the regulated water out of the Grand Coulee.

Senator JACKSON. I see.

Mr. DOMINY. But it is not a correct statement, and I know that some people try to make it, that the irrigation subsidy from power is a decided burden on the rate structure. This is not the case.

Senator JACKSON. Is it not a fact that the recent Bonneville rate increase would not have been made had it not been for the subsequent obligations that have to be made in payment on irrigation subsidies?

Mr. DOMINY. As a matter of fact—

Senator JACKSON. Is that not in the record and has that not been stated?

Mr. DOMINY. I think you will find that in the case of the Missouri Basin rate increase the power allocation would not have been paid out in 50 years without the increase. So the irrigation subsidy was no factor there.

In the case of Bonneville Power Administration, I think it was a very small factor, if any, in the early years of the payout because at the present rate structures, power allocation itself was not being met. We will be glad to supply a more detailed statement on the Bonneville increase for the record.

Senator ANDERSON. Senator Moss is here. Let me raise some questions about the central Utah project.

Mr. DOMINY. Yes, sir.

Senator ANDERSON. I saw a story in the New York Times. I was assuming that they were voting on a bond issue. They were not. I have the figures on it; \$331 million total cost, of which some is nonreimbursable. Irrigation, \$16,400,000; power, \$107 million; industrial, roughly \$50 million, \$49-plus million; basin accounts, \$63 million; taxes, \$64,699,000. What I thought they were voting on was the ad valorem tax, but the basic figure was \$63,500,000.

How do you know now what will be in the basin account?

Mr. DOMINY. We have to, of course, project the earnings from all these various features of the project, and under the authorizing act we have to give to the Congress annually a complete up-to-date financial report. Fortunately on the Colorado storage project, we

planned from the very inception to get the revenue producing elements and the regulating storage elements such as Glen Canyon, Flaming Gorge, Curecanti, and Navajo built first. The revenues from these are starting to flow into the project. We cannot——

Senator ANDERSON. As a reason to go slowly, Mr. Aspinall is chairman of the House Committee and he has introduced some amendments on the House side that put in the whole list of Colorado projects.

Mr. DOMINY. That is correct.

Senator ANDERSON. I am not opposed to building those projects at all.

Mr. DOMINY. Actually, under the authorizing act, Colorado can only apply revenues within the percentage of total revenues as specified in that act.

Senator ANDERSON. But that is just on the percentage. Colorado contributes a great bulk of the water. New Mexico contributes something like 13 percent. Colorado, therefore, has a very valid claim on surplus water in this valley. We are getting lower and lower all the time. How do we know there will be \$63 million in the basin account to take care of this central Utah project?

Mr. DOMINY. Mr. McCarthy, will you comment?

Mr. McCARTHY. Yes, sir. This is based upon our projection of power production. We assume that the average runoff from the Colorado River over the next 50 years will be the same as it has been in the past.

Senator ANDERSON. Past what; 10 or 50 years?

Mr. McCARTHY. Our basic period is 1905-65.

Senator ANDERSON. Sixty years.

Mr. McCARTHY. Yes, sir.

Senator ANDERSON. If you go back to the last 10 years what will it be?

Mr. McCARTHY. If you referred only to the past 10 years and projected the runoff on that basis, we would not have enough prospective revenues in our basin account.

Senator ANDERSON. You will not have any revenue.

Mr. McCARTHY. You would, in effect, bankrupt the upper basin account.

Senator ANDERSON. I see the Senator from California is here. I do not want to give him any ammunition——

Senator ALLOTT. Do not do it, then.

Senator ANDERSON. The cold fact is——

Mr. DOMINY. Senator, is it realistic to take 10 adverse years? Is it not realistic to take the longest years of hydrology measured by man on the river. I certainly think it is.

Senator ANDERSON. That would call for a real long look. You are starting off with the fact that the temperatures have been slowly rising on the North American Continent and the world for a long time. I do not know whether we will be able to reverse that situation or not, but as the temperatures rise, the amount of water in the rivers drops.

Now, I have been trying to follow the flow of water in the Rio Grande and Colorado Rivers for a long time. I do not enjoy the fact that I am one of the few people remaining who was present in 1922 when the Colorado River Compact was signed. That is a long time back. But at that time nobody believed that there would ever be less than 30 million acre-feet of water in the river, but certainly always

more than that. That is why there was no worry. There was plenty of water there. And a million acre-feet in the Gila River. That was not debated a great deal. I think I know what was intended, but I find myself in disagreement with the Supreme Court—maybe I had better not say where it is—but nobody worried about it because there was plenty of water there.

When I read here that you are going to have in the basin account \$63 million, I wonder, if this project goes ahead, is there going to be any money remaining for any other projects in the Upper Colorado River Basin, including the State of Colorado?

Mr. DOMINY. Of course, under the authorizing act we can project construction of projects in Utah in accordance with the percentage available within the basin fund that is properly assigned to Utah. The same for New Mexico and the same for Colorado.

Senator ANDERSON. But is there not supposed to be some money in the account to carry some of these projects before they are authorized? Is that not the theory on which we started off?

Mr. DOMINY. The theory is that we have to show that there will be accumulated in the fund sufficient revenues within 50 years after any particular feature is constructed and put on the line.

Mr. ANDERSON. That is right. I wish you would give me the figures on the Bonneville project or the central Utah project to show that. As a matter of fact, a great many questions have been asked and I am glad the Senator from Utah is here so he can comment on them. The original bill which I introduced in the Senate, S. 500, 84th Congress, did authorize those projects. The central Utah project was at the issue stage. Bonneville was not mentioned. The issue was supposed to include the Vernal and some others, not the Bonneville unit. It was not authorized. You would work on it. If it were authorized, you would then take \$63 million out of the fund. You may never accumulate it. I am trying to understand how you do it. You have to do it with mirrors.

Mr. DOMINY. No, sir. I certainly consider that it is proper to interpret the hydrology of the future based on the longest period of record that you have available to you.

Senator ANDERSON. Even though the flow of water is declining year by year over 50 or 60 years?

Mr. DOMINY. The Colorado River is such an erratic river that I agree that you can take any period of time, a short period of time within that 60-year period, and prove most anything you want.

Let me take you 10 years back in the 1920's and I can prove to you that we ought to be able to anticipate an average of 20 million acre-feet.

Senator ANDERSON. Do it either way you want to do it. I will take it in two 30-year periods starting in 1905, three 20-year periods starting in 1905, six 10-year periods starting in 1905 and they all point the same way. Why do you point the other way?

Mr. DOMINY. I do not think they do all point the same way if you go back into the 1920's. But we do not try to take any advantage. We threw 1965 and 1964 into the averages each year as we got them. Now, this current year is not going to look very good because we have had only about 40 percent of normal snow pack.

Senator ANDERSON. That gets around to my favorite theme. None of these projects are any good unless the runoff is increased and

we are holding some hearings about this. I am very much interested in it. I think the people of the Western States and the rest of the country who put up the money ought to know that, unless we do something about the snow pack, the amount of irrigation and water available, these projects do not hold up.

Senator KUCHEL. What do you propose to do about it. Let us assume you are correct in your apprehension. What is your view as to any constructive basis for this committee to act on?

Senator ANDERSON. I am not going to start talking about that. I want to have some studies made and turn the Department of the Interior loose. The Bureau of Reclamation has done a fine job, and I want to say so publicly, in trying to build up increased supplies of moisture, but unless there is an increased supply of moisture, we are in no shape to talk about building more projects in that area.

Mr. DOMINY. Let me make one general comment.

Senator ANDERSON. Let me say, I think Delph Carpenter was the big figure in the Colorado River Water Compact Committee meeting. I think he was the most knowledgeable man on water law I have ever listened to and had the finest vision of what that valley could be. He tried very hard to establish a good fair project. He was from the State of Colorado, respected by everyone there as being the one great voice in the Colorado River Compact. And he never dreamed you would ever get down to 6 million acre-feet of water in that river. He could not believe it was possible. He took a long range figure that the Colorado River had so much. They did not come back and divide it again. There was not any water to divide.

Mr. DOMINY. One thing I would like to point out. The Missouri River flows also were down and a lot of people began to worry that we were building too many dams on the Missouri River. In the last few years it has come back. The cycle is moving back to what it used to be and we are filling the reservoirs.

California had some dry years. They now have plenty of water.

Senator ANDERSON. What is the flow of water at the headwaters of the Colorado River?

Mr. DOMINY. It is still bad this year, but last year it was good. I agree with you that we ought to be doing everything we can to get more snow by manipulating the weather and you certainly have been furnished—

Senator ANDERSON. Will you furnish us with a yearly estimate of where this \$63 million is going to come from.

Mr. DOMINY. Yes, sir.

Senator ANDERSON. It worries me. Only \$16 million for irrigation and \$331 million for costs.

Mr. DOMINY. It was visualized that in the upper basin these units would be costly and, of course, could never be built and justified without the basin approach that was authorized in the act. Utah's share of the water could not be put to work.

Senator ANDERSON. I do not object to the basin approach at all. I helped write it into the law, but there must be something to divide up if you are going to divide something up.

Mr. DOMINY. We will give you a full report, sir.

(The information requested follows:)

In accordance with the authorizing act (Public Law 485, 84th Congress) the first use of CRSP revenues goes to the repayment of the reimbursable costs of

the main stem (Glen Canyon, Flaming Gorge, Curecanti, and Navajo Units). Once this has been accomplished, presently estimated in year 2003, power revenues become available to the four Upper Basin States to assist in the repayment of irrigation costs beyond the repayment ability of water users.

The State of Utah's share of these surplus revenues is 21.5 percent and start accruing in year 2003. Previous commitments for irrigation assistance (Emery County and the Vernal Unit of the Central Utah Project) amount to about \$13.5 million and it is currently estimated that these costs can be recovered from Utah's share of the Basin Fund by year 2006. Commencing in year 2006 and ending in year 2021, Utah's share of the Basin Fund (power revenues from the main stem) will be committed to the return of the \$63 million needed for the Bonneville Unit of the Central Utah Project. Thereafter the monies will accumulate and be available to assist in the repayment of future participating projects in the State of Utah.

Senator ANDERSON. I am sorry about that bond issue. I refreshed my memory now. I assumed they were going to vote on the bond. It is a tax.

Mr. DOMINY. In forming the conservancy district, the vote authorized the tax. That is what they were voting on.

Senator MOSS. The voters had to vote for the imposition of an additional tax in order to meet the cost.

Mr. DOMINY. Right.

Senator JACKSON. Just a point of clarification with reference to the power funds; what is the requirement on the Bureau with reference to protecting the integrity of the fund by reviewing the rate structure, and so on?

Mr. DOMINY. We are required, of course, to make sure we can pay out the costs allocated to power in 50 years with interest. Most of the irrigation assistance needs in these basin accounts come in after the power payouts. So if you just continue the same rate structure on power, you pick up the irrigation assistance without the burden of increased rates. Of course, some people argue if you did not have the irrigation you could reduce the rates, but since the rates are already set at a competitive figure, it has always been our philosophy that the development of the West justified us in continuing the rates at a figure which is already competitive without reducing it after the 50-year payout for power.

Senator JACKSON. But if the water flow is down, the output is not going to be as much. The total amount available for this purpose likewise will be down. What do you do to stabilize that situation so that the fund really is there so that, when projects are to be authorized, you know you are drawing from a reserve that will be in the bank?

Mr. DOMINY. For instance, when we started construction of Glen Canyon Dam, we felt justified in taking the long-term hydrology average in our projection.

Now, as additional dry years go into the computation, that projection will go down, and that could mean a deferral, then, of some worthy project based on a current analysis of when it could be paid out. And, of course, as we get experience records of the returns, we will have to adjust our projections in the future in accordance with what actually occurs.

Senator ANDERSON. I would like to read now what was said in the report on S. 500.

Mr. DOMINY. Yes, sir.

Senator ANDERSON. Mr. French was kind enough to furnish me the report accompanying the bill authorizing the Upper Colorado storage project.

The evidence shows that even if all the questions—

There were many questions raised about the feasibility of all these projects—

the evidence shows that even if all of the questions so raised by opponents of this measure were to be resolved against the upper division States, the requirements of the consumptive use projects authorized or proposed to be authorized would be well within the upper basin apportionment.

The whole committee signed it. There was plenty of water. We are not quite that sure now. This was 10 years ago.

Mr. DOMINY. That was water for the projects authorized in the act and there is still no question about that.

Senator ANDERSON. Let me read it again:

\* \* \* resolved against the upper division States. The requirement of the consumptive use projects authorized or proposed to be authorized.

Everything we were talking about, all of them if they were granted—

Mr. DOMINY. That would include the participating projects authorized and those that were listed for additional study.

Senator ANDERSON. Yes. All of them. Plenty of water there. And we all believed that. I am only saying that now, when we come up against the facts as they are developing, they cause the Senator from California some concern, and also, I am sure, cause the Senator from Colorado great concern, because his State is the root State, the great provider of water. We have to be a little careful that we develop something else in the way of moisture supplies if we are going to fulfill all of our commitments.

Mr. FOSDICK. That concludes the specific information you had for us, Mr. Dominy?

Mr. DOMINY. Yes. I had a complete statement when I appeared here before that did not go into the record. If the Chair wishes, it could go into the record. I just summarized the general statement that we made at the earlier hearing.

Senator ANDERSON. Senator Gruening, as you know, has asked that a project in his State be removed from the list.

Mr. DOMINY. Yes, sir. We would have no objection.

Senator ANDERSON. Will you tell us about it? It is quite hard for a person who lives in a somewhat dry State to understand anybody wanting to cut out a project.

Mr. DOMINY. This project is the Devil Canyon project, which the Bureau studied. It was about halfway between Anchorage and Fairbanks in the rail belt area.

Senator ANDERSON. I have been to the site and it is a very interesting site, very fine prospect. And I point out in the memorandum, "This is a 100-percent power project." This is to be paid back by power revenues. It looks pretty good and I must say the water flows through this in volume which those of us who have been around arid regions hardly understand.

Mr. DOMINY. We completed our report on it and the people of Alaska did not show interest in it. The report is finished and the only reason we list it here was in the event that anything changed in

the future. For example, they are now developing some fossil fuels and gas fields and there probably will need to be a transmission line running from Anchorage to Fairbanks. This proposed hydropower project about halfway up the system might be real valuable for peaking purposes and might change their minds some time in the future.

Senator ANDERSON. It is being rejected by the Alaskan people in the hope that they, thereby, will get the Rampart project.

Mr. DOMINY. They have shown much greater interest in the possibility of the Rampart than they have in this particular one.

Senator ANDERSON. How big is the Rampart?

Mr. DOMINY. It is a substantial project.

Senator ANDERSON. Well, how big? How many millions of dollars?

Mr. DOMINY. Five million kilowatts installed capacity is the proposal.

Senator ANDERSON. A billion dollars?

Mr. DOMINY. About \$1.4 billion. It is a large project in the order of \$1.4 billion and would have one of the biggest manmade lakes in the world.

Senator ANDERSON. As big as Lake Erie?

Mr. DOMINY. In that order, yes, sir.

Senator ANDERSON. Quite a project. And because of the possibility of getting that, they are opposed to Devil's Canyon. You folks have finished your study on that.

Mr. DOMINY. We finished our studies. It is just on the shelf and we listed it here along with a lot of other projects that are in various stages of investigation, so that we would have authority in case there was any desire to expand it or do additional work on it. But we would have no objection to it being eliminated if that is the wish of the people of Alaska.

Senator ANDERSON. Well, I told Senator Gruening if he didn't want it up there, as far as I am concerned we would be glad to take it out of this bill. The study has been made. It is a very feasible project. The power revenues would completely pay it off. I never saw so much water in my life flowing down and we would be glad to move it to our part of the country any time we can construct a canal.

You have no objection to elimination of this project?

Mr. DOMINY. No, sir.

Senator ANDERSON. Does anyone on the committee want to discuss it?

Senator ALLOTT. Not that one, but I would like to ask some questions, too.

Senator ANDERSON. Any time you wish.

Senator ALLOTT. I note that this bill, Mr. Dominy, was introduced by the chairman of the committee by request and it is a bill that was drawn in the Department.

Mr. DOMINY. Yes, sir.

Senator ALLOTT. The Bureau, was it not?

Mr. DOMINY. Yes, sir.

Senator ALLOTT. Let me ask you this question, What is your fundamental purpose in introducing this bill?

Mr. DOMINY. By requirement of law, unless the Congress gives us, by act of Congress, authority to make feasibility studies, we have no authority to spend after July 1, 1966, any funds in continuing our

feasibility investigational program. The law reads very specifically, and I quote—

Senator ALLOTT. Which law is that that you are reading from?

Mr. DOMINY. This is the Federal Water Project Recreation Act, Public Law 89-72. Section 8 of that act provides that:

Effective on and after July 1, 1966, neither the Secretary of the Interior nor any bureau nor any person acting under his authority shall engage in the preparation of any feasibility report under reclamation law with respect to any water resource project unless the preparation of such feasibility report has been specifically authorized by law, any other provision of the law to the contrary notwithstanding.

So this first year, this is a very burdensome list that comes before the committee because it even includes those projects that are already studied and are lying before Congress for action, because we couldn't even spend a dollar answering questions about it or making any further revisions in it at the request of Congress. So we have to list all of those plus all of those that are being completed yet this fiscal year, and all of those that will be completed in the next several years.

There are only a few in this list that are not already underway. In the future I would hope that this would be a very light burden on Congress because we would only have a few projects each year to add to our continuing studies.

Senator ALLOTT. Now, I note that you have the Narrows projects included in here.

Mr. DOMINY. Yes, sir.

Senator ALLOTT. And there is nothing on the Cache la Poudre or the St. Vrain, either one.

Mr. DOMINY. Mr. Casey?

Mr. CASEY. Our investigation of the Cache la Poudre indicates the project would not be financially feasible at the present time and continuing feasibility investigations are not warranted. On the St. Vrain we are just now getting underway with our reconnaissance studies. We do not have reconnaissance findings sufficient to make a judgment as to its feasibility. Hence, it would be limited to later consideration.

Senator ALLOTT. What is the status of the Two Forks?

Mr. CASEY. The Two Forks is in the bill under the title Mount Evans Division, Upper South Platte unit. It is to be further studied in fiscal year 1966, and has a continuing program in fiscal year 1967. We hope to complete our investigations early in fiscal year 1969.

Senator ALLOTT. Now, that is as contained under region 7.

Mr. CASEY. Yes, sir.

Senator ALLOTT. Under region 7 in your report, is it not?

Under region 5 there is the water salvage project in which New Mexico is mentioned. On the Rio Grande between the Colorado-New Mexico State Line and the existing Caballo Reservoir. That would be authorized under this bill.

Mr. DOMINY. Yes, sir. For continuation of study under section 2 of the bill.

Senator ALLOTT. I would like to get some information on the central Arizona project bill now pending on the House side. I am interested in just where it leaves Colorado with respect to the development of its upper river projects.

Mr. DOMINY. If the five additional participating projects that are being included for consideration in the Lower Basin Act were to be authorized and built, this would utilize substantially all of the assured remaining waters allocated to Colorado under the compact. It would just about use up your entire assured quantities of water under the compact allotment.

Senator ALLOTT. If they are authorized?

Mr. DOMINY. Yes, sir.

Senator ALLOTT. Have feasibility studies on all of those been completed?

Mr. DOMINY. Yes, sir.

Senator ALLOTT. And reported to the committee?

Mr. DOMINY. Four of them are before the Bureau of the Budget at the moment with the expectation that the Bureau will comment on them in the next week or so. The Dolores report has been submitted to the Congress. The other four should be here momentarily.

Senator ALLOTT. I want to get the picture clear of the remainder of the contemplated projects in western Colorado that are touching the upper reaches of the Colorado River and its tributaries. They would not be affected by this bill because the feasibility reports are concluded.

Mr. DOMINY. That is correct.

Senator ALLOTT. They have not been authorized.

Mr. DOMINY. Those were authorized for study in any event under the 1956 act. They already had a specific act of Congress authorizing those studies.

Senator JACKSON. And also I think the legislative record is clear on that. There was a colloquy on the floor or in the committee and it was recognized that prior authorization had been given for those projects, I think, Senator Allott. I believe you asked me the question at the time.

Senator ALLOTT. Yes. I think it is just wise to renew these colloquies from time to time to remind people.

Senator JACKSON. I was not objecting. I was corroborating.

Senator ALLOTT. That is all I have at the moment.

Senator KUCHEL. I have a few questions when I have an opportunity.

Senator ANDERSON. Go right ahead. I think we might as well be informal about it. If a Senator has a question, ask it.

Senator KUCHEL. Mr. Commissioner, I am particularly interested in some of the questions which were raised by the distinguished Senator from New Mexico and the apprehension which he reflected concerning the future supply of water in the upper Colorado River, all in connection with this legislation before us.

This committee and the Congress now assume a new responsibility, I might say, in passing judgment on studies which the Department of the Interior and the Bureau of Reclamation believe reflect the public interest. I think I am right in saying I am the only member of this committee who opposed the legislation under which the Department is now required to come forward and request authorizations specifically for feasibility studies which it believes serves the American people.

Mr. Commissioner, let me ask you first of all, am I correct in assuming that every one of the proposed items in this bill concerns intrastate waters only?

MR. DOMINY. I can't think of any project in this list that involves interstate diversions. They are all intrastate.

Now, of course, some of them involve projects that are on streams that involve more than one State.

Senator KUCHEL. But in those instances, am I correct in assuming that there is no question of augmenting the amount of water to be used in the State where the study is proposed?

MR. DOMINY. I think that is a true statement.

Senator KUCHEL. I think it is very important that the members of this committee, Democrat and Republican, recognize that when my friend from New Mexico raises sincere questions as to the apprehension which is mounting in his own judgment, that that really has nothing to do with this bill at all. That will be one of the major responsibilities for this committee and the Congress to pass judgment on in some subsequent session.

I share the apprehension of my friend from New Mexico, although I am somewhat comforted by the comment of the Commissioner of Reclamation for whom, as I think he knows, I have tremendous respect, that it may well be the future will be less bleak than the present, and that additional supplies of water will run into the stream by reason of renewed heavier schedule of snowfall and rain.

Nevertheless, the apprehension which the Senator from New Mexico speaks of is an apprehension which must be shared by the people of every Colorado River State. The upper Colorado storage project, S. 500, which is now the law, clearly recognized that the waters in the river shall be subject to the Colorado River compact, which is quite correct, and all those other agreements among States which operate on the waters of that stream. And since there are, therefore, enforceable responsibilities as to the amount of water which will be delivered from one basin into the next, water shortage becomes a problem in which the people of Arizona and the people of California and the people of Nevada share equally with the people of the State represented so ably by my distinguished friend from New Mexico and those others around this table who come from upper basin States.

Now, I recall the decision of the Supreme Court in *Arizona v. California*. What should be done, asked the Supreme Court, if there is a shortage so far as Arizona and California are concerned?

I think I am correct in saying that the Supreme Court says that is a problem for the Secretary of the Interior to decide in a manner consistent with the Boulder Canyon Project Act and other applicable statutes of the Congress of the United States. And I can remember meeting around this table several years ago when we all agreed that we don't want to get into a dog-eat-dog operation where I speak only for California and you speak only for New Mexico and you speak only for Colorado and you speak only for Arizona, where we are fighting among ourselves, where we cease to be a union, and where you have got around this table advocates for a 100-percent parochial point of view. That is wrong.

Now, how are you going to avoid that? You are going to avoid that, Senator Anderson, by augmenting the supply of water in the Colorado River to the benefit of the Upper Colorado River Basin States as well as to the benefit of the Lower Colorado River States.

Does the Senator agree with me on that?

Senator ANDERSON. I surely do.

Senator KUCHEL. There is just no question about it.

Senator ANDERSON. I do want to point out, though, Senator Kuchel, that I raised the question about the central Utah project in this bill because the Bear River project in Utah, the Upper Gila River project on the Gila River in New Mexico and eastern Arizona, are also involved in this bill and if they get moved along pretty well and work is done on them, it is pretty late thereafter to start thinking we shouldn't have done this.

Mr. DOMINY. In answer to your question a moment ago, I indicated that I didn't believe that there were any projects here involving interstate water supplies. Actually the Bear River does involve Idaho and Utah but there is already a compact on the Bear River and our project plan is consistent with the compact. The Walker River is another one that involves California and Nevada, and the Animas La Plata involves New Mexico and Colorado, but in each case we are proceeding with a plan of development consistent with an agreement between the two States.

Senator KUCHEL. Whereas, if we ever confront, as surely we will confront, the question of what to do to augment the amount of water available in the entire river system, then, of course, we will have a different problem where there will not have been any prior agreement except as that agreement may be reflected in the compact itself.

I can't overestimate the importance of this discussion. I am glad to be here. I am glad that the Senator from New Mexico raised it. It may well be that in a spirit of statesmanship you can have a committee here and a committee in the House of Representatives composed of men who are required to think about their own people but who also should think about the best interests of the country as a whole, to come together and to pass judgment on a series of proposed studies such as this.

At any rate, that is the law.

I wanted to make these comments, however, because, gentlemen, you are going to, particularly those of you who come from the Colorado River Basins, Upper and Lower, be faced with a critical responsibility to make decisions that affect your own people, your own State, and also the welfare of the Pacific Southwest, and because my friend from New Mexico raised in his mind this apprehension, I wanted to supply my own comments, poor as they may be, for this record.

On the bill itself I certainly approve it. I think it would be a tragedy if the Bureau of Reclamation had no authority to continue inquiring into the feasibility of public projects which would bring water to thirsty areas. So I am prepared, Mr. Chairman, the chairman of this committee and my friend, the chairman of the whole committee, I am prepared to support this bill as early as we can move it to a vote.

Senator ALLOTT. Mr. Chairman, I would like to say a word or two with respect to this. Before I start, did you indicate the progress of the Narrows, and when the reports would be available?

Mr. DOMINY. That is in 1(b) of the bill, Senator Allott. We reactivated that study in 1958 at the request of the State of Colorado which contributed funds to help us continue the study. The feasibility studies of this unit have been essentially completed. A report is scheduled to be submitted by the field office at the end of this current fiscal year, just a few months from now.

Senator ALLOTT. That is what I wanted to get from you because that is the last information you gave me, some 4 or 5 months ago, that it would be available some time in June.

Mr. DOMINY. Yes.

Senator ALLOTT. I want to say this: I have asked about Colorado action here and I suppose in this sense—I know the Senator from California considers it as being parochial, and I am parochial. There is no one else at this table charged with the responsibility of specifically looking after Colorado that I know of except the Senator from Colorado. So I offer no apologies in this respect.

I would like to move on to the broader thing that Senator Anderson and Senator Kuchel both have remarked about. I have attended these hearings both before this committee and the Commerce Committee on weather modification, and I realize and I support every effort to do this. I think probably the Colorado River Basin offers the best possible chance to develop these as near as I can ascertain at the present time from the testimony of witnesses.

I would like to also, just so that we don't go overboard on this thing on a matter of extreme optimism, to say that here is the Senator from Utah, from New Mexico, from Colorado—Wyoming is not here—but this is still an inexact science. We don't know what we can do. All of our grand hopes at the moment are supported by a lot of these engineers. It seems to me as if I have spent a good portion of my life following those people. They are optimistic, but we haven't any idea what we can do in the Colorado River Basin in this respect, whether it would be 2 percent or 3 or 10 or 50.

Now, in this respect, Tommie, it inures to your benefit and to Arizona's just as much as it inures to Colorado, and I think we all feel the same way. We want to push this as hard as we can.

However, at the present point of time I think it would be a great error to make long-term projections on any increase that we are going to get. I am concerned, as is Senator Anderson—we have talked about this many times privately. And the past record of the Colorado River, if you go back to 1920, and bring it up to the present time, shows we have water running out of our ears, but for the last 10 years, and if this dry period should continue, we really would be scratching our heads to make these things work.

Senator KUCHEL. Will the Senator yield?

I think one of the great things that the Senator from Colorado has done has been to take the lead in the Appropriations Committee on weather modification, and I have supported his position consistently and I intend to continue to do so because this could be one factor in overcoming the growing danger.

Second, the only way that the future of the whole Colorado River Basin, Upper and Lower, is going to be underwritten is for the people who share the common danger, from every one of those States, to find a basis on which they together can eliminate that danger; otherwise I am parochial, too. Each one of us is.

But we have another responsibility and that responsibility is to people as a whole. Surely it would be a tragedy if we did not look forward into the future and take the predictions of the situation 25 years hence, and having taken that prediction, do what we can to prevent damage.

You take water away from the area I come from or the area you come from and it will all dry up and blow away. We can't let that happen.

I thank the gentleman.

Senator ANDERSON. Senator Moss, I raised some questions about your State, so you should surely have some comments.

Senator Moss. I don't know that I need any time, Mr. Chairman. I think that the comments that have been made here about the fact that the river runoff has declined in recent years certainly does not justify us in assuming that this is a permanent situation. I think the projections made have to be based over a long period of time. It is something similar to the way people talk about the Great Salt Lake. They say it is drying up and going away. As a matter of fact, it rose 4 feet this year and it is going to rise 2 more feet this coming year. It is a cyclical thing.

Now, as we stop more and more of the water in the mountains from going into it, you can say there is going to be less water get into it, and this is another factor besides the weather affecting the supply of water. I think in the Colorado River Basin that we certainly are justified in taking the longer period of time.

This discussion about whether there is going to be enough money in the basin fund, of course, has to be made on a projection looking in advance. And I would say that the criteria appear to be valid to me in making that projection and, therefore, I believe we are justified in moving ahead to try to build these projects that we need if we are going to continue to live in the arid area in which my State exists and all of the others who are here, in some degree, are in arid area States.

I find nothing really to make me too deeply concerned about it. I think that I would agree with the Senators from Colorado and California, that, of course, we must continue to expend every scientific resource we have to find additional sources of water and that is the reason I am such an enthusiastic supporter of weather modification. I think that offers one of the greatest possibilities. Much more needs to be done about suppression of evaporation and saving of water in any way we can, and all of the other things we are looking at in this water field.

If this committee does not take the lead and does not look ahead and project finding sources of water and better distribution of water, then we are going to have some of the very serious consequences that have been predicted in reports that have been made of areas that plainly come to the point where they are just out of water. We can't allow that to happen.

Thank you, Mr. Chairman.

Senator JORDAN. Mr. Chairman, I am pleased to get the report from the Commissioner that the Missouri River water supply appears to be increasing over the last 2 years, did you say?

Mr. DOMINY. Yes.

Senator JORDAN. I was concerned here a couple of years ago because it looked to me like the rate structure of the Missouri Basin was predicated on a completely unrealistic water supply as related to the performance of the last several years. If this is improving, this is encouraging indeed. But I think rather than predicate our future development on what the water has been in the best years or even

in a block of years, I think we ought to follow a very prudent assessment of the water supplies so that we are not caught as we are occasionally with a long record of low flows and a very critical condition and nothing but shortages to allocate. It is a very difficult thing to allocate water shortages. Better that we assume a prudent attitude to start out with, accept the water supply record of the most critical period of time and base our development on those calculations rather than have it based on something that incorporates a few high years and might lead us to expect that that might be continuing.

Mr. DOMINY. One of the things I would like the committee to understand is that in our project formulation process we do make a more conservative and below average projection for water for industry, cities and farms than we do for power because if we don't get the water to make the power, we can purchase energy and buy replacement power to meet our commitments to our customers. So we use two different levels of estimating. We agree with you completely that we have to be on the low side when it comes to actual projection of water in the taps for industry and people in agriculture.

Senator ANDERSON. Further questions?

Mr. FOSDICK. Mr. Commissioner, it would be helpful to the committee to get a little enlightenment from you gentlemen on the scope of a reconnaissance level survey which, as I understand it, is the preliminary work you do before you start a feasibility study, and since the committee is concerned, of course, with authorizing feasibility studies, it would be helpful to know the scope of the work that you do before you start a feasibility survey or study.

Could you give us some general comments on what that would encompass?

Mr. DOMINY. Yes.

We have three basic levels of project study, the basin areawide study, then within that we make the reconnaissance grade studies which are more detailed than the basin type, but less detailed than the feasibility.

I will have Mr. McCarthy give you some idea of how detailed the reconnaissance is as compared to the feasibility grade.

Mr. McCARTHY. In a reconnaissance study there are several key things which we determine.

First of all, we determine if there is a water supply.

Secondly, we determine if there are feasible dam sites if storage is required. We don't normally do any drilling. Normally we have our geologist look at the site, taking into account the general geology of the area, and based upon his conclusions as to whether we have a good damsite or not, we will make what we call reconnaissance cost estimates.

These are on the high side. We allow for the fact that we don't have firm foundation information. Occasionally, we may put in one or two drill holes and on the basis of cost curves we have developed for various types of dams, we prepare cost estimates on a fairly rough scale.

We also take a look at the water quality and the chemical quality of the land to make sure that they are compatible and that the combination of the chemical quality of the water and chemical composition of the land would permit irrigation. We take a quick look at whether there are any insurmountable drainage problems involved. We also

contact the local people to make sure they are interested in it and that, if a feasible project is eventually developed, they will be interested to the extent that they will pick up whatever repayment obligations are involved.

On the basis of information such as that, we prepare a preliminary project plan, determine the goals in an overall manner, determine the costs involved and make a preliminary determination of what the benefits are. If it appears that the benefits will exceed the costs, we have an adequate water supply, the physical works can be developed, and if the local people are willing to back a further effort, we prepare a reconnaissance report and make a determination as to whether, in view of all of these facts, we are justified in asking the Congress for money to go into a detailed investigation.

Mr. FOSDICK. Well, would it be proper to say that a major portion of the data and information that you use is that which is already available from various sources?

Mr. McCARTHY. I think so; yes.

Mr. FOSDICK. You do a little fieldwork but not much?

Mr. McCARTHY. That is correct. We use Geological Survey quad sheets that are available. We very seldom go out and do any mapping except we may take a cross section of a damsite or something like that.

Mr. FOSDICK. So it is a preliminary study that is primarily technical but you do make an overall economic feasibility study in a rough way, is that it?

Mr. McCARTHY. That is correct.

Mr. FOSDICK. With that as the background for your reconnaissance level survey, what would be the scope of a feasibility study, that this committee is concerned with in S. 3034?

Mr. McCARTHY. In our feasibility study, we go into the same questions only in much more detail. We develop much more detailed reservoir operation studies and go into the hydrology in much more detail. We will drill the damsites. We do not depend upon cost curves in our feasibility grade cost estimates but actually determine the quantities involved. We may design the facilities and determine their costs, including that of the spillway. In the feasibility studies one of the important aspects is to develop the plans for the spillway and determine the exact flow the spillway would have to accommodate in the design flood.

In our land studies we make detailed land classifications surveys. We take soil samples. We undertake whatever surveys we need to determine the topography of the land and how much it is going to cost to subjugate the land. We make a much more detailed economic study. We have continuing discussions with the local people as we develop these facts, determine the type of farm that can be developed, and prepare farm budgets. With this information we are ready to talk with the people and give them a much better idea of what the range of cost is, what their repayment requirements will be, and get better expressions of interest from them. Then we determine whether or not we shall recommend the project be authorized for construction.

Mr. FOSDICK. Do you attempt in the reconnaissance level survey to determine the repayment ability of the water users?

Mr. McCARTHY. In a rough way; yes. We make both an economic and a financial determination. We make a determination that the project probably will be financially feasible. We also try to determine

what the project revenues will be, the needs for assistance, and whether the project can be paid out.

Mr. FOSDICK. I know this would be subject to very wide variation, but it would be helpful if you could give some indication of the relative difference in expenditure for reconnaissance surveys as compared to feasibility surveys. I realize it depends on the size of the project, but within limits of large and small projects, what would be the relative expenditure cost for that type of work?

Mr. McCARTHY. We may be able to develop something on that. I know we have studied these relationships in the past and you are correct in that they vary considerably. Generally the smaller the project, the greater the relative cost of reconnaissance studies. On a large project the reconnaissance costs, on a unit basis such as an acre basis, are usually much smaller.

Mr. FOSDICK. I was wondering if the amount spent for a reconnaissance level survey was a fairly high amount as compared with the feasibility study or if it is a relatively small amount.

Mr. McCARTHY. Those will vary. For one thing, we carry reconnaissance only to that point that we are reasonably sure that a feasibility study is warranted. On a real good project we determine with a little study that a feasibility study is warranted. In a borderline case, we would have to go into more detail in the reconnaissance before we can make up our minds.

For that reason on some projects our reconnaissance costs would be substantially greater as we go further into the feasibility before we come to the point of deciding whether or not a feasibility study is justified.

Mr. FOSDICK. Do you have standards or perhaps manual specifications that indicate the differences between these two types of studies?

Mr. McCARTHY. Yes, sir. We have a manual that defines the type of studies that we cover in each category.

Mr. FOSDICK. Perhaps it would be helpful if you could furnish us copies of that if you would, please.

Mr. McCARTHY. All right, sir.  
(The information requested follows:)

## CHAPTER 2.2 INVESTIGATIONS PRIOR TO AUTHORIZATION

0.1 The types of investigations undertaken by the Bureau prior to authorization are described in this chapter. There are several types of investigations, each of which leads to a report for a specific use. (See Part 4.) These are reconnaissance, project, basin, preconstruction, rehabilitation and financial adjustment, power planning and marketing, and special. Each will be covered in this chapter in the order named, except those relating to preconstruction activities and special investigations, which are discussed in Chapters 2.3 and 2.4.

0.2 Investigations are initiated in several ways. The most common way is for an investigation to be requested by other Federal agencies, state, county, or municipal governments, or cooperating organizations. Such requests are examined by the Regional Director and, if they appear to have merit, a program for investigation is submitted to the Commissioner for approval. (See Volume XXIII.) Recent appropriation acts require that expenditures of General Investigation funds for investigations requested by states, municipalities, or other interests shall be upon the basis of the state, municipality, or other interest advancing at least 50 percent of the estimated cost of the investigations. Thus, when an investigation is undertaken at the formal request of local interests, a contract providing for financing not less than 50 percent of the estimated investigations costs must be made with those interests before the investigation is started. Another method of initiation is for the Congress to direct an investiga-

tion of a project or basin. Such direction is given in a resolution covering a definite area or project, or in the report of a Congressional committee. Regardless of the source of the request, investigations are conducted in the same manner in regard to quality and coverage, according to the type of investigation involved. (See Part 4.)

0.3 It is the basic policy of the Bureau to complete the field and office studies necessary to support adequately and conclusively the prescribed objectives of an investigation with a minimum expenditure of time and funds.

0.4 Investigations conducted prior to authorization should be carried on to such point and in such detail as is necessary to determine whether the project under investigation has engineering and economic feasibility. When feasibility becomes apparent and authorization may be anticipated, investigations should be directed toward the requirements for a project planning report. In a similar manner, when infeasibility becomes apparent, preauthorization investigations should be continued only to the point necessary to show infeasibility under existing or foreseeable conditions.

A. On many projects, small and large, a reconnaissance type investigation will show beyond reasonable doubt that there is no plan that has engineering feasibility or that project cost is far beyond the range of economic feasibility. Where the reconnaissance report shows that reimbursable project costs cannot be repaid within a reasonable period of time, the investigation should be abandoned and a feasibility report is not prepared. In the event that after a regular project investigation has been begun, it becomes evident that a feasible project cannot, or should not, be developed, an unfavorable report will be prepared. See Chapter 4.8 for general guides for the preparation of unfavorable planning reports.

B. On investigations of large projects, where a small percentage of estimated construction costs represents very large preauthorization investigation costs, sound judgment will have to be used, in conjunction with readily available data, as the basis for certain estimates. The Bureau should not spend a large sum (for example, 5 percent of an estimated \$50,000,000 project cost) investigating a project. Engineering, geologic, or economic boards and consultants properly may be used under such circumstances. Preauthorization investigations must be terminated at a reasonable point and, on large projects, seasoned engineering, hydrologic, and economic judgment and the best available safeguards for reliability of results necessarily must be substituted for finite and very detailed preauthorization investigations. More detailed investigations, which are generally needed, should be scheduled immediately to follow authorization. (See Chapter 4.3.)

C. Very large projects usually involve policies peculiar to themselves and must be considered in the light of particular needs and circumstances. Where reasonable doubt as to feasibility of the major features exists, it is necessary to carry out sufficient investigations to make preliminary plans and estimates reasonably firm for obtaining authorization. Minor features may need to be investigated only so far as a reconnaissance study gives tangible form and substance to the plans.

D. Investigations should be sufficiently complete so that the total estimated cost of a contemplated project will be known with reasonable accuracy, but with the expectation that further and more detailed investigations might readily be expected to shift the distribution of the benefits and cost among the individual features of the project.

E. Chapters 2.6 and 2.7 of Volume V describe and establish minimum specifications for the three standard types of land classification and give the conditions under which each of them is applicable. The minimum specifications for a given type of classification are to be maintained but, if extensive areas are involved, the land-classification surveys in preauthorization investigations may be restricted to representative subareas and the results extended to the entire area. The other phases of economic investigations, such as land use and payment capacity determinations may be treated in a similar manner.

F. Standards in surveying and mapping are outlined in Volume VIII.

0.5 A reconnaissance investigation is primarily the investigation in which a potential development is first conceived and outlined in official form. It is the most easily made and usually least costly, of the several types. It requires, however, a great deal of advance planning, expert guidance, and competent review. A reconnaissance investigation is a study which enumerates all of the general information and basic facts on a given area, leading to a compilation of data in reports and maps, and involves a minimum of new field work essential to a decision to drop the investigation because of proof of infeasibility or to program further details and investigations. Reconnaissance investigations, because they are for the purpose of selecting development plans and project

features, usually require only preliminary data and short-cut methods to reach a conclusion. Field and office activities, however, should be sufficient to support the preparation of cost estimates within reasonable accuracy. In applying this to a specific phase of a project such as, for example, an earth dam and appurtenant works, it is conceivable that the earth-fill portion of the structure may constitute less than half of the entire structure cost, while the spillway may comprise more than half of the cost. The accuracy of computations in connection with the spillway requirements then becomes a factor of major importance and any necessary corrections in the computations of these requirements might have a very appreciable effect on the total cost of the structure. In such a case, therefore, a detailed study of spillway requirements is desirable in order to verify the accuracy of preliminary studies and as a means of reducing the costs of such features, if possible. Conversely, if the spillway requirements are nominal but foundation conditions are the controlling factor, the studies should center about this latter condition, with a sufficient exploratory program to enable estimating within reasonable limits. Water supply and land classification are two of the more important features that should be considered in reconnaissance investigations. The findings of reconnaissance investigations are primarily for the use of the Regional Director in the furtherance of future studies. (See Chapter 4.4.)

A. Upon beginning a reconnaissance, the available data in respect to the area should be collected, studied, and analyzed so as to determine the most promising potential projects. A reconnaissance investigation should consider every possible activity which the Bureau is authorized to undertake, and should recognize the interests of other Federal, state, and local agencies. An outline of the activities which should be considered is contained in Part 4.

B. In the course of the studies of available data, some additional field work will be required to supplement or verify the data already at hand. Field work should be held to the least detail that will give the required information. Dam site profiles may serve in place of detail topography. Reservoir cross-sections or topography based on a reduced number of observations substitute for more accurate surveys. Stadia traverses with cross-slopes save the cost of strip topography or chained lines. Hydrological studies, involving the use of available data and preliminary estimates, should be sufficient to determine the approximate water supply available for development. Estimating curves are used to obtain comparative costs, and sampling procedures may be employed in land classification and economics.

C. All employees of the regional staff who have been assigned responsibilities in connection with investigations and planning reports should participate in the investigations to assure that all phases of the activities will receive proper recognition and that no major factors will be overlooked. As a result of the field and office studies, a report is prepared, based upon the available data, with recommendations as to disposition. (See Chapters 4.4 and 4.9.)

0.6 Where a reconnaissance indicates that there are definite development potentialities which are consistent with overall basin plans, the programed investigations may proceed to establish firm information for authorization and construction appropriations. The investigations to be undertaken for this purpose should be sufficiently detailed to support adequately and conclusively the plans and estimates on all features of the project or unit. (See Paragraph 2.2.4B for details regarding the limitation of expenditures for project investigations.) The reconnaissance previously made indicates the approximate water supply available, the acreage which it will support, and the general plan for conserving the water and utilizing it for irrigation, power, or other purposes, (See Chapter 4.2.)

A. With this information at hand, a refinement of the hydrological studies previously made shall be undertaken. This item probably will not require any material change in conclusions if the original study was prepared properly, but the conclusions must be adequately supported and substantiated by detailed studies which demonstrate how the project will operate under representative and critical conditions. This phase is one of the most important in the project studies (see Volume IV). The success or failure of the project is basically dependent on land and on the water supply feature, both as to quality and quantity.

B. The degree of detail to be undertaken in connection with land classification will depend entirely upon the information available and the general characteristic of the soil and topography. (See Part 2 of Volume V.) It should be such, however, as to enable an accurate determination of the location and extent of the irrigable lands. If an adequate survey has been made during previous investigations, a review of such a survey by spot-check methods will suffice. However, if

this is not the case, a detailed survey should be undertaken to define the limits and location of the project lands. Such a survey not only fulfills the requirements for the project proposal, but will also serve for later preconstruction surveys and planning and for operations.

C. A complete analysis of the power aspects of the project, including their relations to other plants and systems with which they are coordinated, must be accomplished to determine further the prospects of this feature and to coordinate power with the other functions of a multiple-purpose project. (See Volume VI.)

D. The degree of finality of engineering surveys should be sufficient only to support the required objectives. (See Paragraph 2.2.4 and Volume VIII.) On certain features of the investigations, these may vary from detailed surveys to rough flylines. It is probable that the greater portion of the topographic surveys will be of a detailed nature, since a comparatively small amount of additional time and labor are required to secure detailed information at the time of the original survey and the applicability of such a survey to the final requirements will make it the most economical method. Exploration programs to determine the foundation characteristics for major structures should be such as to verify surface observations and to provide sufficient information to enable the preparation of reliable preliminary plans and estimates. The materials exploration program should be carried on under the same criteria. (See Volume XI.)

E. Upon the completion of the required land-classification and engineering activities, sufficient information is available to outline a plan for the development of the area and the preparation of a cost estimate. The plan is prepared in the field, district, or regional office; certain features of the cost estimates being prepared either by the Branch of Design and Construction or by the field office. Design and estimates should be accurate; consistent with the information at hand. (See Volume IX and Chapter 2.1 of Volume XXIII.)

F. With such a plan and cost estimate available, it is possible to integrate into the report the economic phases of the proposed development. It is expected that economic studies will have progressed sufficiently during the other activities of the investigation to enable arriving at a definite proposal. These studies include an estimate of the costs and benefits (Volume XIII), recommended cost allocations (Volume XIV), repayment requirements (Volume XV), procedures under which the project can be constructed, and provision for proper financial return as required by law. These items should be determined as definitely as possible, so that the Bureau can support them, subject to minor alteration or change following preconstruction surveys, in the first approach to landowners. However, information released prior to the planning report should be adequately qualified to avoid commitments in the event of changes for such reasons as revised costs or modification of plans.

G. A general census of the attitude in the affected area is a requisite in this stage of planning. The landowner's attitude has been a potential barrier to project development in some localities. This is especially true in areas which are dry-farmed and where a series of years of adequate rainfall has permitted a profitable return without irrigation. If an unfavorable attitude toward the development exists, the planning report may recommend that no further action be taken until the attitude has changed sufficiently to enable the formation of an irrigation district. This subject is not paramount in an area consisting predominantly of withdrawn public lands.

H. The importance of legal review during the investigation cannot be over-emphasized. Legal review should not be deferred until the completion of a plan. Adequate legal review of the legal aspects of planning requires adequate legal investigation. Such investigation is an integral part of any planning investigation. Like other portions of the planning investigation, it is time-consuming. Adequate legal review also requires familiarity with the project being investigated. The conclusions drawn by Regional Counsel and his staff from their investigations may affect the course of other portions of a planning investigation.

I. The activities of other Federal and state agencies, particularly those of other Bureaus of the Department of the Interior, must receive adequate recognition in the planning and development of an area. (See Chapters 1.3 and 4.9.) Their proposals must be incorporated and integrated into the general plan to the extent practicable under the law. In many instances, features recommended by another agency cannot be incorporated into the general plan because of the reimbursable nature of Reclamation funds. However, there are also many cases where a slight variation in plan will enable the full utilization of such recommendations at no additional cost.

J. Upon the completion of the necessary field and office work, all information on the project, including recommendations and basic data, is consolidated in the form of a project planning report (see Chapter 4.2). This report must be complete in every essential respect and contain data on the unit as it exists under present conditions and as proposed for development.

0.7 It is not possible to outline a program of potential developments for the greatest good of the greatest number of people in an area until the task of comprehensive planning is viewed from a basin-wide perspective. It is requisite in all planning investigations that the area be looked at from a basin point of view in order to assure that a truly comprehensive picture has been outlined. This is especially so when the water supply is limited. There are very few basins in the West where the physical limitations on any possible development are not controlled by available water supply, although the possibility of transbasin diversions is always present. With an inventory of all potentialities, it is possible to outline a comprehensive plan for the development of the natural resources of the basin. Existing project and reconnaissance investigations are a start toward basin planning. These investigations constitute an integral part of a basin investigation and should be incorporated into the general plan. They are supplemented by additional investigations, where required. The units of a basin plan of development which are recommended for initial authorization by the Regional Director should be investigated thoroughly and to the same general standards as project investigations (see Paragraph 2.2.6). These standards should be modified, as required, in accordance with instructions in Paragraph 2.2.4. The remainder of the basin, which comprises the deferred potentialities, shall be investigated in accordance with the standards for reconnaissance investigations. (See Paragraph 2.2.5.)

A. A decision based on sound engineering and economic judgment and full consideration of the desires and rights of the affected states must be made to arrive at a definite proposal for an area in question, when there are two or more potentialities or possibilities lying within a subbasin, all of which cannot be developed due to the limited water supply or land.

B. A basin plan must consider the interests, policies, and plans of all Federal agencies, the affected states, and other agencies, and the effect of these interests on the plan. (See Chapter 1.3.)

C. A basin-wide report contains a definite overall proposal for the area, which the Commissioner can transmit to the Secretary of the Interior for his consideration and, in the usual case, to the states of the basin, various Government agencies, and ultimately to the President and the Congress (see Chapters 4.2, 4.8, and 4.9).

8. Construction of a project may be authorized: (1) by the Secretary of the Interior, or (2) by special legislation.

A. For Secretarial authorization, the project must conform to the standards of feasibility provided in the Federal Reclamation Laws (Act of June 17, 1902, 32 Stat. 388 and acts amendatory thereof or supplementary thereto). An authorization by the Secretary may be made only upon the basis of a report which contains all the findings required by Section 9(a) of the Reclamation Project Act of 1939; conforms to the requirements of that section for feasibility; and meets with no objection from the Secretary of the Army or the states to which it must be sent for review in accordance with Section 1(c) of the Flood Control Act of 1944 (58 Stat. 887).

B. Authorizations by special legislation ordinarily result from the submission of project proposals to the Congress, including project plans which do not fully conform to existing requirements of the Reclamation Laws or which have met with adverse comments from the Secretary of the Army or a state, or states. Infrequently, such authorizations result from the submission of basin-wide comprehensive plans for development. Where the authorization is on a project basis, it is confined to that specific project or to certain features of the project. In seeking authorization of projects the overall objective of the project should be fully considered; not those of specific features alone. In the case of the basin-wide proposals, there may be included in the Regional Director's letter a request that the plan for the basin as a whole be approved and that certain features of the plan be authorized for construction. The features of a basin plan recommended for authorization will be those on which investigations have advanced to the point where the degree of feasibility is known and the studies have been undertaken in such detail as to enable a firm cost estimate and plan to be presented. (See Chapter 4.2.)

0.9 The annual operation and maintenance costs on an irrigation project normally contain provision for routine maintenance of the irrigation system, including continuing rehabilitation work in the nature of repairs and replacements. However, after a project has been in operation for many years, and particularly following a depression or war, economical operation of the irrigation system may not be possible without taking care of an accumulated amount of major rehabilitation work. Therefore, special investigations are occasionally necessary on existing Reclamation projects, some of which have been in operation for many years, to determine the physical condition of the entire irrigation system, and need and cost of rehabilitation and improvement. Only on rare occasions do these investigations result in any changes in the project plan, and the reports are not commonly identified as planning reports unless it is necessary to obtain new or supplemental authorizations to undertake the work. The investigation may include seepage and weed surveys, as well as surveys of the condition of dams and reservoir areas, canal systems, pumping plants, and other structures. A rehabilitation survey may show the need for repairs to present structures, for replacement of deteriorated structures, for modernization of the system, or for replacement of operating equipment. Prior to a rehabilitation construction program, particularly when it involves any sizable expenditure of funds, a complete investigation is necessary. For a detailed account of the procedures for operation and maintenance of Reclamation projects, see Part 2, of Volume XVI.

0.10 Where need exists for amendatory repayment contracts, or when the water users have requested such contracts, the capacity of the water users to repay costs must be thoroughly examined. It is customary to prepare a comprehensive economic report (see Part 2 of Volume XV) on the basis of extensive investigations of existing project conditions; a repayment analysis; studies of the types of crops grown, credit standing of the farmers, adequacy of water supply, and the economic size of farm units; and a classification or reclassification of the productive capacity of the project. The negotiation of amendatory contracts calls for further investigations and preparation of reports and analyses as needed. These are considered as normal operation and maintenance functions, except when they are so extensive as to modify the project plan and require additional authorization, in which case they are considered predominantly as a planning matter. If the examination of a project indicates need for a general rehabilitation program and a survey and estimate of cost is made, the ability of the water users to repay the cost of rehabilitation construction must also be determined. Other items calling for investigation and financial adjustment in connection with existing projects, and in some cases on new projects, are: settlement of outstanding delinquent accounts; apportionment of operation and maintenance costs; temporary deferment of annual construction charges; and the causes and remedies of excessive operating costs. For a detailed discussion of the negotiation of amendatory repayment contracts, see Volume XV.

Mr. FOSDICK. Would you describe for us briefly, not in too much detail but adequate for our understanding, generally how benefits are computed for potential projects?

Mr. McCARTHY. Even in a general discussion, this could be not too short because we have many functions, and benefits are computed differently for various functions.

Starting with irrigation, we compute two types of benefits, direct and secondary. Very briefly, the direct benefits are based on a projection of the increase in net income before and after a project is built. In other words, we determine what the net income from an area is before irrigation and after we add irrigation. The difference, generally speaking, is what we call our direct benefits. The indirect benefits are generally the benefits which accrue to local industry through the marketing, processing, and sale of products. There is a profit as the fruits of irrigation move through the processing and we take a small percentage of the subsequent profit and call that the indirect benefits.

In estimating the benefits from municipal and industrial water supply, we use a different approach. Normally, the municipal and industrial benefits are measured by the costs of providing the municipal

and industrial water by the most likely alternative means if the project is not built. The same general approach is used in determining power benefits; that is, what is the alternative cost of power of the same character. As to flood control benefits, the Corps of Engineers furnish those to us and they represent largely the savings in damage to property, life, facilities, utilities, and so forth, that derive from the project.

In the case of recreation and fish and wildlife benefits, there is still another approach which is based on a visitor-day concept. Depending upon the type of recreation benefit or fishing or hunting benefits offered, the Bureau of Outdoor Recreation and Fish and Wildlife Service place a value of anywhere from 50 cents to \$4 or \$5 on a visitor-day or hunter-day and they project the use that will develop at the project.

Senator ANDERSON. Do you ever go back and check your figures to see how well you estimated them? For example, in this little project in Oklahoma, Washita project, you estimated more recreation days than the entire upper Colorado River storage project. How did it work out?

Mr. DOMINY. Let me first say that there is—

Senator ANDERSON. It is an important question to me.

Mr. DOMINY. I can't give you the specifics on Washita. We will look it up. But I can tell you in general the forecasts of visitor-day use at our reservoirs for a year have been exceeded usually the first 2 or 3 months, and the only reason we did not have a big one in the Colorado River storage project is because it was never evaluated at that time. This is something that Congress has taken cognizance of more recently than 1956.

Senator ANDERSON. I will grant that.

Mr. DOMINY. And we are trying to correct that in the Colorado storage project.

Senator ANDERSON. I am sure that is correct. I only wondered how the Oklahoma project worked out. As I understood it, it worked out very well.

Mr. DOMINY. I think it has.

Senator ANDERSON. People drove in from all around and had a fine time.

Mr. McCARTHY. We did make a recheck on that recently, on all projects that have been put in operation in the past 10 years. We found that the visitor use in 1965 averaged about four times that projected at the time the projects were authorized. For some projects the visitor use has been as much as a hundred times as much as was estimated 10 years ago.

Senator ANDERSON. This ought to be in the record. What did they base this on?

Mr. McCARTHY. We based it on careful calculations.

Senator ANDERSON. How did they work out—I can say they have worked out very well.

Mr. McCARTHY. Some of them have.

Mr. DOMINY. That is right. The other thing I want to mention here, we don't just dream up our own standards for evaluating these things. These are uniform standards used by the corps and us. They have been developed by interdepartmental committees with the approval of the Bureau of the Budget.

Senator ANDERSON. In the Oklahoma study it was done by the Fish and Wildlife Service. It was not your figure at all.

Mr. DOMINY. This is right.

Senator ANDERSON. It was very well done. You checked that recently and found it so.

Mr. DOMINY. On Easter Sunday weekend at Lake Powell, which is just about as remote a lake as you can find, every motel room and every campground that the Park Service had made available was occupied and this summer that poor lake and the poor folks who are trying to provide accommodations are going to be swamped. The recreational use of these reclamation structures and lakes is going to amaze everybody, in my judgment. I think their estimates are picayune in every instance and we could claim a lot more value in recreation and fish and wildlife than we do and it would be legitimate.

Senator ANDERSON. I wanted that in the record.

Mr. FOSDICK. In connection with municipal and industrial water, I understood that you use the alternative method for determining the benefits. But I think it is a pretty well accepted fact now that most municipal and industrial water is sold at a price considerably below its economic value.

Does that enter into your consideration of benefits in any way; what the value of the water is?

Mr. McCARTHY. We have discussed this at great length and the same thing may be true of power, too. The alternative cost of power does not necessarily measure the value, but how do you measure the value of municipal and industrial water? If you have any ideas, we certainly would be glad to hear them.

But by taking the alternative cost, we say this is in effect the ceiling. This is the most we can claim in the way of benefits because if we don't provide this by this project, the city can go out and build alternative works and get it for this cost. This is the rationale behind using the alternative cost.

Senator ANDERSON. As a matter of fact, you do estimate what water is worth on just a straight employment basis, not what a man would give for it if he was on the desert. In the Canadian River project in Texas, all those figures were worked out through a process of drilling wells and that has worked out very well, has it not?

Mr. DOMINY. The cheapest alternative source of supply is what we assume would be the maximum cost of water.

Senator ANDERSON. You have not had occasion to revise your figures, have you, anywhere, to any large degree, because of past experience?

Mr. McCARTHY. They are all working out about as contemplated.

Mr. DOMINY. Yes. That Canadian River project is just about complete now and all the cities are signed up. They are going ahead with their filtration plants and delivery systems and the project will be exactly as outlined.

Senator ANDERSON. That was Congressman Worley's bill a long time ago and he was very optimistic and a little bit on the sketchy side but it sure is not now, is it?

Mr. DOMINY. It certainly is not.

Mr. McCARTHY. We do review all of these after the project is authorized. By the time we get ready to put a project into construction, the feasibility study may be 6 or 7 years old, so we prepare

a definite plan report before we go into construction and bring all of these analyses up to date to reflect any changes that have been made. These later analyses are used as the basis for negotiations with the water users for repayment purposes.

Senator ANDERSON. What I am trying to get back to is, there is a lot of information on these sheets on the feasibility of some of these projects and a great many calculations are used. Thus far your calculations have held up reasonably well, have they not?

Mr. DOMINY. Yes, sir; extremely well.

Senator ANDERSON. You have no reason to doubt these calculations in this document, then?

Mr. DOMINY. No, sir. I think if we err, we err on the conservative side in preparing our project justifications and benefit-cost analysis.

Mr. FOSDICK. Well, in the same vein, and to the same degree of lack of detail, let's put it that way, how do you generally determine the costs for a project? We have talked about benefits now in the same sense as the costs. How do you arrive at those?

Mr. DOMINY. The actual construction costs? We, of course, in the reconnaissance grade use a lot of extrapolations and tables of what it generally costs on an average to construct certain works, but in the feasibility grade studies we do get, by core drilling and other detailed engineering, more specific costs. And here again our record is extremely good in constructing projects within the estimates that we have used in our report to Congress as a result of our feasibility grade study.

Mr. FOSDICK. In the construction costs. But then the cost I am referring to here is the one used to compare with benefits for the cost-benefit ratio.

Mr. McCARTHY. You mean the alternative cost?

Mr. FOSDICK. Well, it might be alternative. It is the annual cost that goes with the annual benefits.

Mr. McCARTHY. First of all, the major element in the annual cost is the construction cost which we amortize over the period of analysis which gives us one component. Also there are certain projects which have transfer costs. For instance, a project in Central Valley may utilize water out of an existing reservoir and part of the cost of the existing reservoir is assigned to the unit that is being added. The same is true in the Missouri Basin. The Garrison division unit has been assigned part of the costs of the main stream reservoir system, which become part of what we call the investment cost of the project. We add that into the cost of the project and amortize it. That is another component. The third component is the operation and maintenance costs. Those components are all brought down to a common time period, the same as the benefits are, and are expressed as an annual cost. These annual costs are then compared to the annual benefits.

Mr. FOSDICK. Then you have to allocate those to the various functions?

Mr. McCARTHY. That is correct. And we use the standard method wherever we can which all the Federal agencies have agreed on. It is called the separable costs-remaining benefits method of allocations.

Mr. FOSDICK. Thank you for that portion, gentlemen.

Mr. FREDERICKSON. You requested that Congress authorize feasibility investigations for a great number of potential projects. In

your opinion what criteria would you suggest Congress use in determining the projects for which it will authorize feasibility studies?

Mr. DOMINY. Certainly in this first year, in operating under this new limitation, I would hope that the Congress would recognize that we are now acting under existing authority of reclamation law. For all of those projects already under investigation, or at least those that are nearing completion and on which a substantial sum has already been expended, I would hope that we could get authority now so that ongoing feasibility investigation work could be completed as programed in an orderly manner. It should be recognized that this bill does not authorize projects for construction, nor commits the Congress in any way to their authorization for construction. It authorized making reports to Congress on which Congress can decide whether projects ought to be constructed or not after all the facts are in.

On the new studies that we propose, I am perfectly willing to accept any instructions that the policymaking branch of the Federal Government wishes to give me and I look upon the Congress of the United States as the policymaking branch of Government. We will continue to give the Congress the answers to the best of our ability on any question that it wants to ask at any time.

Mr. Chairman, may I make one closing statement?

Senator ANDERSON. Yes.

Mr. DOMINY. First of all, what is in 1(a) are projects on which the reports are already complete. Secondly, 1(b) are projects upon which the reports are almost complete.

Now, you are not being asked to approve \$10 billion worth of projects. You are being asked to approve a continuing investigation program to cost a total of somewhere in the order of \$80 million. This is all that this legislation is; to study projects that have a total cost, if authorized and built, of \$10 billion. Many of those are already studied. This bill only permits me to keep them alive in case there is additional work to be done. So there isn't as much burden in this package as you state.

Senator ANDERSON. Well, I think we had better adjourn subject to the call of the Chair.

(Whereupon, at 12:03 o'clock p.m., the committee adjourned subject to the call of the Chair.)

## APPENDIX

(The following communication from the Washington Public Utility Districts' Association was ordered printed in the hearing record:)

WASHINGTON PUBLIC UTILITY DISTRICTS' ASSOCIATION,  
Seattle, Wash., March 24, 1966.

Senator HENRY M. JACKSON,  
Senate Office Building,  
Washington, D.C.

DEAR "SCOOP": Thank you for sending me a copy of S. 3034, the Omnibus Feasibility Authorization legislation submitted by the Department of Interior. They certainly have covered every project.

It would seem proper to us, at least for those projects in the Pacific Northwest, that some balance be obtained between the interest of power users in low electric rates and the practice of the Bureau of Reclamation to stimulate interest in local areas for reclamation projects requiring excessive subsidization from power revenues.

This should be done before giving the Department of Interior full authority to go ahead on these studies.

It becomes even more important in view of the House Interior Committee amendment to the legislation authorizing the third powerhouse at Grand Coulee Dam, which automatically allows all future authorized reclamation projects in the Pacific Northwest to use Federal power revenues except where denied by Congress.

Our recent policy statement pertaining to the proposed Southwest Idaho Water Development Project, which incorporates several of the studies authorized by S. 3034, might be entered into the hearing record to outline the views of our member Utility Districts on the matter of reclamation subsidy from power revenues. We would appreciate this if it could be done.

Copy of our policy statement is enclosed.

Sincerely yours,

KEN BILLINGTON.

[Enclosure]

### SOUTHWEST IDAHO WATER DEVELOPMENT PROJECT

In a joint statement, Senator Frank Church (Democrat), Senator Len Jordan (Republican), Representative Compton White (Democrat) and Representative George Hanson (Republican), all members of Congress from the State of Idaho, have been circulating a draft bill which would authorize the Southwest Idaho Water Development Project. This reclamation project is comprised of four separate divisions. They are as follows:

1. Mountain Home Division, including a power plant at Guffey Dam. It is to provide reclamation to 131,000 acres.

2. Garden Valley Division: This also includes a sizable power plant at the Garden Valley Dam. It will cover 165,000 acres.

3. Weiser Division: No power involved; it covers 16,500 acres.

4. Bruneau Division: No power involved; it covers 240,000 acres.

The total project includes the reclaiming of 552,500 acres of land in Southern and Western Idaho. Estimated cost is given as \$710 million.

Provision is made in the legislation to use surplus power revenues from the entire Bonneville Power System for irrigation costs which are beyond the repayment ability of irrigators. Such reimbursements are to be made from power revenues into the reclamation fund. In effect, this adopts the principle of a basin account without specific basin account legislation.

The bill also establishes a method to determine the rate of interest to be paid on all interest bearing portions of the project. The interest rate will be established by the Secretary of the Treasury based on the outstanding marketable public obligations not due or callable within 15 years from date of issue which are outstanding at the beginning of the fiscal year in which construction is commenced on any reimbursable power portion of the project.

The view of the Congressional delegation from Idaho is that their State is entitled to irrigation assistance from Federal power revenues because some of the water which generates power in the downstream Federal dams on the Snake and Columbia Rivers originates in Idaho. They also state that authorization of this reclamation project in Idaho will diminish the possibility of the water hungry States to the South diverting water out of the middle or upper Snake River region.

While it might be a proper view that Idaho, being located and being a participant in the Columbia River Basin power system, is entitled to power revenue support for this project, there are other factors in the State of Idaho which should first be clarified in fairness to the residents of the States of Oregon and Washington and Western Montana. These residents use the bulk of Federal power from the Federal dams in the Pacific Northwest and will be providing most of the revenues used to subsidize this Idaho project.

In order that the Congressional delegation from the State of Washington be advised of this problem, the following statement of policy on irrigation assistance from power revenues is submitted for Board consideration and approval. Upon adoption, copies will be sent the Washington Congressional delegation and other interested persons.

1. *Congress should adopt a limit on the percentage of any reclamation project which is to be paid for out of power revenues.*

It is illogical that a project developed for the purpose of water conservation and use be subsidized by power revenues to the extent of 70, 80, or even 90 percent as is the case in some projects now being proposed throughout the Pacific Northwest.

While land reclamation and water conservation are essential to the development of the western States, a greater portion of such development costs might be rightfully borne by the land owner whose land increases very greatly in value as the result of the development. The electric power customer should not have to pay for exorbitant portions of reclamation projects.

2. *Congress should adopt a more realistic time period requirement on the payback or amortization of power portions of multiple purpose projects.*

This would provide a more equitable balance between the repayment requirements on power users for power facilities as opposed to the requirements for subsidization to reclamation projects. Extending the presently accepted 50-year payback requirement for the power portions of multiple purpose dams to 60 years in the same manner that a 60-year payback requirement is allowed for the reimbursable irrigation portions of reclamation projects would be fair and proper.

Additionally, Congress should direct the Secretary of Interior to administer the payback requirements of the Bonneville Project Act and the Flood Control Act of 1944 in a manner whereby *all* power facilities are included in the presently accepted payback period of 50 years. Currently the Bonneville Power Administration's transmission facilities are on a 40-year payback basis. This unduly increases the annual payback requirements. The Bonneville Project Act and the Flood Control Act of 1944 state that the cost of *all* power facilities are to be amortized over a *reasonable* period of years. There is no distinction made between transmission facilities and generating facilities in this legislation.

Proper application of the present payback requirement period would lessen the pressure on the power customer and permit greater leeway for irrigation assistance to reclamation projects.

3. *Congress should place a ceiling or limitation on the use of Federal power revenues to be used for irrigation assistance.*

This should not exceed any particular area's contribution to power production and/or power revenues. It is not fair that potential storage dam sites or potential Federal power dam sites be "locked up" in a "Wild River" bill, or destroyed by under-development of private power companies, as has been the case and is still being proposed for the State of Idaho, and then expect

power revenues coming from Federal dams and power customers residing in Oregon, Washington and Western Montana to provide an unlimited level of irrigation assistance to a reclamation project in Idaho.

4. *Congress should authorize construction of a Federal transmission line to Southern Idaho.*

If the Idaho Power Company is allowed to maintain its monopoly position, then any costs encumbered by using wheeling arrangements over the privately owned lines which are in excess to costs of transmitting such power on a Federal transmission line, should be deducted from any grants from power revenues for irrigation assistance to Idaho reclamation projects.

5. *Congress should adopt a policy which postpones repayment of reimbursable costs of reclamation projects coming from power revenues until the power system repayment obligation to Congress has been fully met.*

Placing new requirements for irrigation assistance reclamation subsidy against the currently built Federal power projects arbitrarily changes the obligation of the power user in his payback requirements. In effect, pushing reclamation repayments ahead of power facility repayments results in the power users paying interest on reclamation grants which are supposedly to be interest free. Such irrigation and reclamation subsidies should not fall due before the current Federal power projects have been amortized by repayment.

Conclusion: It is our desire to be constructive and assist the State of Idaho in securing its reclamation project, but consideration cannot be a one-way street in the proper maximum and comprehensive development of the entire river basin area and the providing of Federal power revenues for irrigation assistance for reclamation subsidy.



power, the new commission Federal Power and Public Utilities Commission in 1935. Washington would be required to provide the necessary staff of personnel to carry out the reconstruction project in 1935.

It is believed that the reconstruction project is a very important one for the Federal Government.

If the project is approved, it will be necessary to provide the necessary staff of personnel to carry out the reconstruction project in 1935. It is believed that the reconstruction project is a very important one for the Federal Government.

The reconstruction project is a very important one for the Federal Government. It is believed that the reconstruction project is a very important one for the Federal Government.

The reconstruction project is a very important one for the Federal Government. It is believed that the reconstruction project is a very important one for the Federal Government. The reconstruction project is a very important one for the Federal Government.

The reconstruction project is a very important one for the Federal Government. It is believed that the reconstruction project is a very important one for the Federal Government. The reconstruction project is a very important one for the Federal Government.