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# NARROWS UNIT, MISSOURI RIVER BASIN

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### HEARING

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BEFORE THE

### SUBCOMMITTEE ON WATER AND POWER RESOURCES

OF THE

### COMMITTEE ON

### INTERIOR AND INSULAR AFFAIRS

### UNITED STATES SENATE

### NINETY-FIRST CONGRESS

### SECOND SESSION

ON

## S. 3547

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR  
TO CONSTRUCT, OPERATE, AND MAINTAIN THE NARROWS  
UNIT, MISSOURI RIVER BASIN PROJECT, COLORADO,  
AND FOR OTHER PURPOSES

JUNE 10, 1970



Printed for the use of the  
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(II)

# CONTENTS

	Page
S. 3547-----	1
Departmental reports:	
Budget-----	5
Interior-----	2

## STATEMENTS

Allott, Hon. Gordon, a U.S. Senator from the State of Colorado-----	6
Dominick, Peter H., a U.S. Senator from the State of Colorado-----	27
Hamil, Donald W., Sterling, Colo., president, accompanied by Millard Huey, vice president; Eric P. Wendt, secretary-treasurer; D. Monte Pascoe, general counsel; Denzel R. Pyle, president, North Sterling Irrigation District and director; Donald Spillman, director, Lower South Platte Water Conservancy District; and William Venohr, mayor pro tem, city of Sterling, Colo.-----	51
Hamlin, John G., mayor, city of Fort Morgan, Colo.; and Reuben Peif, member, Lower South Platte Water Conservancy District-----	47
Miller, David, counsel; C. H. Starks, president; Merl Dunham, director; Al Hattendorf, director; and James Erger, director, Central Colorado Water Conservancy District-----	64
Smith, James R., Assistant Secretary of the Department of the Interior for Water and Power Development; Morris Droskin, Chief, Division of Project Development, region 7, Bureau of Reclamation; and D. V. McCarthy, Chief, Division of Project Development, Bureau of Reclamation-----	27
Sparks, Felix L., director, Colorado Water Conservation Board-----	42
Thompson, Charles P., executive director, American Landowners Association-----	65
Wendt, Eric P., Brush, Colo., secretary-manager for the Lower South Platte Water Conservancy District-----	55

## COMMUNICATIONS

Wendt, Eric P., secretary-manager for the Lower South Platte Water Conservancy District: Letter to Charles Cook, minority counsel, Senate Committee on Interior and Insular Affairs, dated June 1, 1970-----	54
--	----

## ADDITIONAL INFORMATION

Estimated additional man-years of civilian employment and expenditures for the first 5 years-----	5
Fort Morgan, Colo. city council, resolution of-----	50
S. 3547—Introduction of a bill relating to Narrows Project, Colo., by Senator Allott, from the Congressional Record, March 4, 1970-----	8
Weldon Valley Protective Organization, Colorado Chapter, American Landowners Association, memorandum of-----	66
Exhibit A-----	67
Exhibit B-----	68
Exhibit C-----	68
Exhibit D-----	69
Exhibit E-----	70

## APPENDIX

(Statements or letters were received from)

	Page
Epperson, George H., attorney, Fort Morgan, Colo: Letter to Senator Allott, dated June 2, 1970-----	74
Statement of-----	74
Etchinson, Marvin, secretary, Weldon Valley Ditch Co-----	73
McClary, Donald F., attorney, Fort Morgan, Colo-----	85
North Kiowa Bijou Management District-----	86
Osborne, Cecil J., general civil engineer, Fort Morgan, Colo-----	80
Richardson, Donald C., president, North Kiowa Bijou Management District-----	85
Sedgwick County, Colo., resolution of-----	88
Weingardt, Richard, P.E., consulting engineer-----	88
Weldon Valley Protective Organization, American Landowners Association: Telegram to Senator Allott, dated June 6, 1970-----	73

# NARROWS UNIT, MISSOURI RIVER BASIN PROJECT, COLORADO

WEDNESDAY, JUNE 10, 1970

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

The subcommittee met at 10 a.m., pursuant to notice, in room 3110, New Senate Office Building, Hon. Clinton P. Anderson (chairman of the subcommittee) presiding.

Present: Senators Anderson, Allott, and Jordan.

Staff members present: Charles F. Cook, Jr., minority counsel; and Daniel A. Dreyfus, professional staff member.

Senator ANDERSON. The purpose of this hearing before the Water and Power Resources Subcommittee this morning is to take testimony on S. 3547, introduced by the Senators from Colorado, to authorize construction, operation, and maintenance of the Narrows unit of the Missouri River Basin project.

The Narrows unit would be located on the South Platte River in northwestern Colorado. The unit would supply supplemental irrigation water to about 166,000 acres and would provide flood control, fish and wildlife conservation, and public recreation benefits. The Secretary of the Interior has found the unit to have engineering, economic, and financial feasibility.

The text of S. 3547 and the legislative reports of the Department of the Interior and the Bureau of the Budget will be included in the record at this point.

(The documents referred to follow:)

[S. 3547, 91st Cong., second sess.]

A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the Narrows unit, Missouri River Basin project, Colorado, and for other purposes

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Narrows unit, heretofore authorized as an integral part of the Missouri River Basin project by section 9 of the Flood Control Act of December 22, 1944, as amended and supplemented, is hereby reauthorized as a unit of that project for the purposes of providing irrigation water for one hundred and sixty-six thousand acres of land, flood control, fish and wildlife conservation and development, public outdoor recreation, potential future municipal and industrial supplies, and for other purposes. The construction, operation, and maintenance of the Narrows unit shall be subject to the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto). The principal features of the Narrows unit shall include the Narrows Dam and Reservoir, fish hatchery and rearing ponds, acquisition and development of the existing Jackson Lake Reservoir, including some rehabilitation*

of Jackson Lake Dam, for public outdoor recreation and fish and wildlife enhancement, and other necessary works and facilities to effect its purpose.

SEC. 2. The conservation and development of the fish and wildlife resources and the enhancement of recreation opportunities in connection with the Narrows unit shall be in accordance with provisions of the Federal Water Project Recreation Act (79 Stat. 213).

SEC. 3. The Narrows unit shall be integrated physically and financially with the other Federal works constructed under the comprehensive plan approved by section 9 of the Flood Control Act of December 22, 1944, as amended and supplemented.

SEC. 4. For a period of ten years from the date of enactment of this Act, no water from the unit authorized by this Act shall be delivered to any water user for the production on newly irrigated lands of any basic agricultural commodity, as defined in the Agricultural Act of 1949, or any amendment thereof, if the total supply of such commodity for the marketing year in which the bulk of the crop would normally be marketed is in excess of the normal supply as defined in section 301(b)(10) of the Agricultural Adjustment Act of 1938, as amended, unless the Secretary of Agriculture calls for an increase in production of such commodity in the interest of national security.

SEC. 5. To the extent that project water constitutes a supplemental irrigation supply, the provisions of the Act of June 16, 1938, relating to the Colorado-Big Thompson project in Colorado are hereby made equally applicable to the Narrows unit.

SEC. 6. There is hereby authorized to be appropriated for construction of the Narrows unit as authorized in this Act the sum of \$68,050,000 (based upon January 1969 prices), plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering costs indexes applicable to the types of construction involved herein. There are also authorized to be appropriated such additional sums as may be required for operation and maintenance of the unit and for future costs, if any, incurred under section 2 of this Act.

U.S. DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE SECRETARY,  
Washington, D.C., June 5, 1970.

HON. HENRY M. JACKSON,  
*Chairman, Committee on Interior and Insular Affairs, U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: This responds to your request for the views of this Department on S. 3547, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Narrows unit, Missouri River Basin project, Colorado, and for other purposes."

We recommend that the bill be enacted with the amendments suggested herein. The Narrows unit was authorized by the Flood Control Acts of 1944 (58 Stat. 887), 1946 (60 Stat. 641), and 1950 (64 Stat. 170). The general comprehensive plan for the Missouri River Basin project was presented in S. Doc. No. 191 and H. Doc. No. 475 as revised and coordinated by S. Doc. No. 247 (78th Cong., 2d Sess. (1944)). The Secretary's subsequent feasibility report on the unit was prepared pursuant to the provisions of the Act of August 14, 1964 (78 Stat. 446), which required reauthorization by the Congress of any units of the Missouri River Basin project which were not already under construction. The Act of September 7, 1966 (80 Stat. 707), provided authority to engage in the feasibility investigation of the Narrows unit. The Secretary's report was transmitted to the Congress on May 27, 1968 (H. Doc. 320, 90th Cong.). A reevaluation statement dated May 1969, revised November 1969, updates the plan of development presented in H. Doc. 320, the estimated costs, and the economic and financial analyses associated therewith. This reevaluation statement (copy enclosed) supplements and modifies the Secretary's report previously submitted to the Congress and by this reference is made a part of our report.

The proposed Narrows unit is located in the lower South Platte River Basin in northeastern Colorado. During the severe drought of the 1930's, water shortages became widespread throughout the basin and although ground-water development in the area expanded rapidly, it became apparent that additional surface water supply for irrigation was needed. A practicable solution of the problem appeared to be transmountain importation of water from sources on the western slope of the Continental Divide. Studies led to the authorization of the Colorado-Big Thompson project (Interior Department Appropriation Act of 1938; 50 Stat. 595), in accordance with the Department's plan of development

(S. Doc. No. 80, 75th Cong.). The Northern Colorado Water Conservancy District was organized in 1937 to include those areas in the South Platte River Basin to be benefited from this supplemental water supply and has contracted with the United States for the repayment of project construction costs. Water imported by the Colorado-Big Thompson project has been used initially in the upper basin above the proposed Narrows unit. The lower basin has benefited from the use of irrigation return flows, largely through ground-water withdrawals, but river flows have remained generally unchanged from pre-Colorado-Big Thompson project conditions. Therefore, a need for an additional supplemental water supply for irrigation has continued to prevail in the lower basin.

The proposed Narrows unit would be superimposed on lands included in the existing Northern Colorado Water Conservancy District. The irrigation service area is also included in the Lower South Platte Water Conservancy District, which was organized in 1964. The proposed unit will serve the purposes of irrigation, flood control, recreation, and fish and wildlife enhancement on Northern Colorado Water Conservancy District lands in the central and lower South Platte Basin. The Narrows Dam and Reservoir on the South Platte River near Fort Morgan, Colorado, will be the principal feature of the proposed development. The nearby existing Jackson Lake Reservoir, now privately owned, will be acquired and developed as part of the Federal project. Both the construction of the Narrows Dam and Reservoir and the rehabilitation of the Jackson Lake Dam will provide recreation and fish and wildlife benefits. A fish hatchery will be constructed immediately downstream from Narrows Dam as an integral part of the fish and wildlife plan of development. No Federal construction of irrigation distribution facilities will be required, since existing systems will convey the water developed by the unit.

Water supply for the Narrows unit will be derived from regulation of surplus streamflow and from direct flow water rights associated with irrigated lands to be acquired for the proposed Narrows Dam and Reservoir. Existing irrigation storage capacity in the offstream Jackson Lake Reservoir will be transferred to the proposed Narrows Reservoir.

Twenty-three of the ditches which serve 98.4 percent of the irrigable land in the Lower South Platte Water Conservancy District experienced an average annual diversion shortage of 178,000 acre-feet over the 1947-1961 period. The Narrows unit will yield an average total supplemental supply of 140,700 acre-feet annually. Of this amount 119,400 acre-feet will originate as releases from Narrows Reservoir and 21,300 acre-feet are divertible return flows to the South Platte from project deliveries. The difference, 37,300 acre-feet, represents the average annual diversion shortage which would have occurred with the project in operation during the 15-year period considered in the water supply study.

The total construction cost of the Narrows unit is estimated to be \$68,050,000 (January 1969 prices) while annual operation, maintenance, and replacement costs are estimated to total \$313,400. The annual equivalent cost for economic analysis is computed to be \$2,748,700.

The evaluated annual benefits attributable to the project functions are as follows:

	<i>Annual benefits</i>
Functions:	
Irrigation:	
Direct:	
Water supply.....	\$1, 394, 000
Savings in O.M. & R.....	16, 000
	<hr/>
	1, 410, 000
Indirect.....	205, 300
Public.....	16, 200
	<hr/>
Total.....	1, 631, 500
Flood control.....	1, 599, 000
	<hr/> <hr/>
Fish and wildlife enhancement:	
National.....	51, 000
Local.....	501, 200
	<hr/>
Total.....	552, 200
Recreation (adjusted for time and rate of development).....	1, 410, 600
	<hr/> <hr/>
Total net benefits.....	5, 193, 300
Direct net benefits.....	4, 971, 800

Based on the foregoing data, the economic justification for the Narrows unit is demonstrated by a comparative ratio of total evaluated annual benefits to total annual costs (for a 100-year period of analysis at 3½ percent interest) of 1.89 to 1. The benefit-cost ratio for direct benefits only is 1.81 to 1.

The estimated costs of the Narrows Unit have been allocated as follows:

Function	Construction cost	Interest during construction	Total
Irrigation.....	\$21,121,400	\$1,932,700	\$23,054,100
Flood control.....	24,350,100	2,231,900	26,582,000
Highway improvement.....	135,000	12,400	147,400
Recreation.....	15,815,500	1,271,300	17,086,800
Fish and wildlife.....	6,628,000	545,600	7,173,600
National.....	(915,600)	(68,900)	(984,500)
Local.....	(5,712,400)	(476,700)	(6,189,100)
Total.....	68,050,000	5,993,900	74,043,900

The total construction cost allocated to irrigation (\$21,121,400) would be reimbursable without interest within 40 years following the completion of construction of the unit's facilities. Annual operation, maintenance, and replacement expenses allocated to irrigation are \$17,100. All of these costs would be repaid from annual ad valorem tax revenues (estimated at \$17,000), annual service charges from Jackson Lake Reservoir interests (\$10,000), and a fixed annual obligation (\$518,100) to return the irrigation costs within 40 years. The Lower South Platte Water Conservancy District, established May 6, 1964, would contract for repayment of the irrigation costs.

The State of Colorado has indicated its intent to agree to administer the land and water areas of the unit for recreation and fish and wildlife enhancement and to bear one-half of the separable costs of the unit allocated to those two functions plus interest during construction (\$2,505,400) and all annual costs of operation, maintenance, and replacement (\$264,400) incurred therefor, as provided by the Federal Water Project Recreation Act.

The remaining construction costs allocable to fish and wildlife enhancement (\$5,687,500), recreation (\$14,363,000), flood control (\$24,350,100), and the Federal share of road relocation costs for highway improvement (\$135,000) total \$44,535,600 and together with the remaining operation, maintenance, and replacement costs of \$31,900, would be nonreimbursable as provided by law.

Water quality problems in the South Platte River were the subject of an enforcement conference called in 1963 and reconvened in 1966, under the Federal Water Pollution Control Act. On the basis of the second conference session, the Secretary recommended to the State of Colorado a high degree of waste treatment and streamflow regulation for water quality control, among other measures. The recommendations with regard to waste treatment are being implemented. Pursuant to section 3(b) of the Federal Water Pollution Control Act, the Secretary's feasibility report on the Narrows unit considered whether flow regulation could contribute to water quality standards compliance on the South Platte River. It was found that direct benefits did not justify the cost of providing streamflow regulation for the Narrows. However, should water quality problems develop which would interfere with present and future beneficial uses of the waters of the South Platte River after the project is placed into operation, it is the intention of the Department to operate the Narrows unit in such a manner as to insure maximum water quality for all beneficial uses, insofar as is consistent with the authorized project purposes.

The Bijou Creek drainage area is located in close proximity to the Narrows unit, Bijou Creek enters the South Platte River valley and flows into the South Platte River immediately downstream from the proposed Narrows Dam and Reservoir site. Floodflows that occur on Bijou Creek and its tributaries also contribute to flooding in the lower South Platte River valley. The possibility of diverting Bijou Creek into Narrows Reservoir for flood control as a function of the Narrows unit was recognized in the feasibility report (H. Doc. 320, 90th Congress). Such a diversion would not provide flood protection within the Bijou Creek watershed as is desired by the residents of the watershed area. Consequently, the Corps of Engineers is currently studying alternative upstream flood control measures to achieve this objective. In the event a feasible proposal for upstream

flood protection is not formulated, further consideration should be given to coordinating a flood control plan for Bijou Creek with the plan of development for the Narrows unit.

In order to conform the bill to the excess land provisions of Federal reclamation law, we recommend that the provisions of section 5 be deleted.

We recommend the following new section 5:

"SEC. 5. The interest rate used for purposes of computing interest during construction and interest on the unpaid balance of the capital costs allocated to interest-bearing features of the project shall be determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which construction is initiated, on the basis of the computed average interest rate payable by the Treasury upon its outstanding marketable public obligations, which are neither due nor callable for redemption for fifteen years from date of issue."

We recommend that section 6 be amended on page 3, lines 22 and 23, to insert a period after the word "unit" and to delete the language "and for future costs, if any, incurred in section 2 of this Act."

Enclosed is a statement concerning the estimated employment and expenditures required by 5 U.S.C. 2953 (1966), formerly Public Law 84-801 (5 U.S.C. 642).

The Bureau of the Budget has advised that, subject to the views expressed in the letter of April 8, 1970, from the Bureau of the Budget to your Committee, there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely yours,

WALTER J. HICKEL,  
Secretary of the Interior.

NARROWS UNIT—ESTIMATED ADDITIONAL MAN-YEARS OF CIVILIAN EMPLOYMENT AND EXPENDITURES FOR THE 1ST 5 YEARS (AS REQUIRED BY 5 U.S.C. 2953 (1966))

	1st year	2d year	3d year	4th year	5th year
Estimated additional man-years of civilian employment:					
Executive direction.....					
Administrative services and support:					
Clerical.....	3	5	6	6	6
Personnel.....	1	1	1	1	1
Total, administrative services and support.....	4	6	7	7	7
Substantive (program):					
Engineers.....	6	10	19	34	42
Engineering aids.....	21	39	43	55	64
Geologists.....	2	2	2	2	2
Agriculturists.....					
Economists.....	1	1			
Land appraisers and negotiators.....	4	8	8	8	8
Total, substantive.....	34	60	72	99	116
Total, estimated additional man-years of civilian employment.....	38	67	80	107	124
Estimated additional expenditures:					
Personal services.....	\$400,000	\$680,000	\$810,000	\$1,100,000	\$1,260,000
All Other.....	100,000	120,000	5,090,000	10,100,000	11,790,000
Total estimated additional expenditures.....	500,000	800,000	5,900,000	11,200,000	13,050,000

EXECUTIVE OFFICE OF THE PRESIDENT,  
BUREAU OF THE BUDGET,  
Washington, D.C., April 8, 1970.

HON. HENRY M. JACKSON,  
Chairman, Committee on Interior and Insular Affairs,  
U.S. Senate,  
New Senate Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your request of March 9, 1970, asking for the views of the Bureau of the Budget on S. 3547, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Narrows unit, Missouri River Basin project, Colorado, and for other purposes."

The purpose of this legislation is stated in its title. While we have no objection to the authorization of the Narrows unit, S. 3547 presents two matters which we wish to bring to your attention.

First, the measure would authorize as a feature for Federal works a fish hatchery and rearing ponds for fishery enhancement purposes. While fish and wildlife enhancement is a legitimate function of Federal multiple-purpose water resource projects, it has been the practice in the past to consider the construction of a hatchery for enhancement to be the responsibility of State or local government. Since the authorization of a fish hatchery for enhancement would be precedent-setting, we have recently suggested to the Department of the Interior that before enacting legislation is supported, it would be appropriate for the Department to develop guidelines for determining what, if any, circumstances would warrant Federal participation in enhancement hatcheries.

Second, section 5 of S. 3547 would exempt the Narrows unit from the 160-acre limitation of the Federal Reclamation law, to the extent that project water constitutes a supplemental irrigation supply. Economic studies prepared by the Department of the Interior indicate that the irrigators can repay the costs allocated to them without exemption from the 160-acre limitation and without assistance from other sources, except for a minor amount of revenue from ad valorem taxes. Consequently, we see no reason for relief from the acreage limitation, which is designed to preserve the family farm concept. We, therefore, strongly recommend that section 5 of S. 3547 be deleted.

Subject to the above recommendation, the Bureau of the Budget would have no objection to enactment of this legislation.

Sincerely,

WILFRED H. ROMMEL,  
*Assistant Director for Legislative Reference.*

Senator ANDERSON. I think before we go any farther we will ask Senator Allott if he has a statement to make.

#### STATEMENT OF HON. GORDON ALLOTT, A U.S. SENATOR FROM THE STATE OF COLORADO

Senator ALLOTT. Mr. Chairman, I wish to express my appreciation to you for scheduling this hearing on S. 3547, a bill to authorize the construction of the Narrows unit of the Missouri River Basin project.

I also wish to express my thanks to Gov. John Love, the Colorado Water Conservation Board, the Lower South Platte Water Conservancy District, the Bureau of Reclamation, the U.S. Army Corps of Engineers, and the many other interested officials and individuals without whose support and assistance this legislation would not be before us today. Many of the supporters of this project from Colorado are in the audience, and some will present testimony in support of this legislation. I am delighted to welcome them to these hearings.

As members of this committee well know, one of the basic principles of the reclamation program is the detention and storage of surplus or flood flows of water for release and use at times when water is in short supply, thereby putting what would otherwise be waste water to a beneficial use. The project to be authorized by S. 3547 is the exemplification of that principle.

The Narrows unit was originally authorized by the Flood Control Act of 1944, as part of the comprehensive plan for the Missouri River Basin project. However, Public Law 88-442 in authorizing appropriations for the continued prosecution of projects authorized under the comprehensive plan, reauthorized projects not already started with the following language:

No part of the funds hereby authorized to be appropriated shall be available to initiate construction of any unit of the Missouri River Basin project, whether included in said comprehensive plan or not, which is not hereafter authorized by Act of Congress.

Consequently, a new feasibility study had to be conducted. Public Law 89-561 authorized the Secretary " \* \* \* to complete his analysis and studies and to process reports \* \* \*" on proposals which he anticipated would be substantially complete by June 30, 1966.

The Narrows unit will provide an average total supplemented supply of 140,700 acre-feet of water annually to the project service area. While this additional supply will not completely fill the average annual shortage of 178,000 acre-feet experienced in the Lower South Platte Water Conservancy District, it will move the area very close to a state of water solvency.

It should be noted that no distribution system is being authorized by this legislation. The distribution system already exists and was constructed by the users. This existing distribution system will be used to deliver the water made available by this project.

The physical features of this project include the Narrows Dam and Reservoir and a fish hatchery. The fish hatchery will take advantage of the unique opportunity afforded by the construction of this dam and reservoir to enhance the recreation, fish, and wildlife enjoyment potential. There is a distinct shortage of recreational opportunities of the type afforded by large bodies of water in the area, as is characteristic of the high plains area of the Nation.

I am informed that the State of Colorado has indicated its intent to agree to administer the areas of the unit for recreation and fish and wildlife benefits, and will bear one-half of the separable costs attributable to those functional benefits, plus interest during construction. The State would also provide for the annual costs of operation, maintenance, and replacement in accordance with the provisions of the Federal Water Project Recreation Act.

Periodic floods have caused major damage in the Lower South Platte Valley. The last and perhaps the most serious floods in the history of the State occurred in June of 1965. Many lives were lost, and property damage, both public and private, exceeded the half-billion dollar mark, statewide. As the chairman knows, I first introduced legislation to reauthorize the Narrows unit early in the 90th Congress, but due to the fact that there was considerable reconsideration of how best to control the great floodflows that have originated in the Bijou Creek Basin, action on that measure was deferred. The Narrows Dam and Reservoir is on the main stem of the South Platte River, but it is upstream from the confluence of the Bijou Creek and the South Platte River about 3 or 4 miles, and therefore provides no control of the Bijou Creek Basin. However, the main stem of the South Platte River poses a serious threat of flood damage due to its very large drainage area. The Narrows Dam will provide substantial protection from this threat.

One of the early tentative proposals for control of the Bijou was the construction of a large channel from the natural course of the Bijou into the reservoir area behind the Narrows Dam.

However, economic analysis of that proposal revealed its infeasibility. This, however, was prior to the devastating 1965 flood. Subsequent to the flood, there was a rekindling of interest in the diversion channel. The Corps of Engineers restudied the proposal and found economic justification based upon updated data. But, as time passed, interest in upstream control reservoirs in the Bijou Creek Basin supplanted interest in the diversion channel; and, ultimately, there was little or no support for the diversion channel proposal.

Mr. Chairman, I ask that my introductory statement for S. 3547 be made a part of the hearing record, because it provides a documented chronology of events for flood control of the Bijou Creek Basin.

(The statement referred to follows:)

[From the Congressional Record, March 4, 1970.]

S. 3547—INTRODUCTION OF A BILL RELATING TO NARROWS PROJECT, COLO.

Mr. ALLOTT. Mr. President, on behalf of myself and Senator DOMINICK, I introduce, for appropriate reference, a bill to authorize the construction of the Narrows unit of the Missouri River Basin project in Colorado.

The project report was submitted to the Congress by the Department of the Interior and was printed May 27, 1968, as House Document No. 320, 90th Congress, second session. Senator DOMINICK and I sponsored a similar measure in the 90th Congress, S. 3561, introduced May 28, 1968. That earlier measure provided for a conditional authorization of flood control features pertaining to the control of the nearby Bijou Creek drainage area. The language of section 2 of S. 3561 reads as follows:

"The Secretary shall construct a channel and related works to divert Bijou Creek into Narrows Reservoir for flood control purposes: *Provided*, That the channel and related works shall not be constructed if the Chief of Engineers, Department of the Army, shall certify to the President and to the Congress by July 1, 1970, that he is recommending a more feasible plan to control floods originating on the Bijou Creek drainage: *Provided further*, That before any funds are appropriated for construction of such channel and related works, their feasibility of development shall be affirmed by the Secretary."

In commenting upon the project report of the Bureau of Reclamation, the Colorado Water Conservation Board, which is the official organ of the State of Colorado charged by statute with the responsibility of coordination of water resource planning and development, made the following observations concerning the Bijou Channel:

"The original plan of development for the Narrows Project proposed the channeling of Bijou Creek into the Narrows Reservoir for flood control purposes. The wisdom of this provision was demonstrated by the fact that in June of 1965 a flood of unprecedented magnitude originated on Bijou Creek. The floodwaters originating on this creek, along with waters discharged by other tributaries of the South Platte, caused the most damaging flood in the history of the State of Colorado, both in terms of the loss of human life and the widespread destruction of property. At the present time the U.S. Corps of Engineers is actively pursuing a course of study looking to the control of Bijou Creek. Since these studies are not yet completed it has not been determined at this time whether flood control structures on the Bijou Creek itself or the channelization of the creek into the Narrows Reservoir would be the more feasible. As we view the proposed plans prepared by the Bureau of Reclamation, it is our understanding that Bijou Creek could be channeled into the Narrows Reservoir at some future time if such is found to be the most feasible plan."

Mr. President, I have gone into this background to demonstrate that as originally conceived, the Narrows project tentatively included provisions for the channeling of the Bijou Creek into the Narrows Reservoir.

It now appears that there are no proponents of a diversion channel among the local people in the Bijou Creek area or the South Platte below Bijou Creek, nor does the Colorado Water Conservation Board support a diversion channel from

the Bijou Creek into the Narrows Reservoir. Since this decision has been made by the affected local interests and the two Federal agencies directly involved, there is no longer any reason to continue to maintain this option. Therefore, the Narrows project should now proceed to authorization.

After the disastrous flood of June 1965, great concern was expressed over the control of the Bijou Creek. During that flood, the Bijou, which is normally dry or nearly dry, reached a peak flow of 460,000 cubic feet of water per second. A member of the Corps of Engineers informally advised me that this flow exceeded the flow of the Missouri River.

As a result of this concern, the Corps of Engineers was asked to take a second look at the Bijou and possible methods of control. In addition, the Soil Conservation Service was requested to investigate potential small watershed protection and flood prevention projects—Public Law 566—in the Bijou Creek Basin. With the possibility that a diversion channel might be constructed in conjunction with the construction of the Narrows project, the downstream areas would be protected but the areas upstream in the Bijou Creek Basin would be without any protection.

Proposals for flood control on the Bijou ranged from a larger channel, which would carry the entire flow into the Narrows Reservoir, to a series of small, medium, and large dams on the various stems and tributaries of Bijou Creek, with some proposals contemplating a smaller channel into Narrows Reservoir. However, by February of 1968 it appeared that the proposal for a series of small dams on the upstream tributaries could not be economically justified. This diminished the alternatives to large or medium sized dams separately or in conjunction with a channel into the Narrows Reservoir, or the channel alone. Mr. President I ask unanimous consent that a letter from Mr. F. A. Mark, State Conservationist, dated February 21, 1968, be printed in the RECORD at this point.

(There being no objection, the letter was ordered to be printed in the RECORD, as follows:)

U.S. DEPARTMENT OF AGRICULTURE,  
SOIL CONSERVATION SERVICE,  
Denver, Colo., February 21, 1968.

HON. GORDON ALLOTT,  
U.S. Senator,  
Washington, D.C.

DEAR SENATOR ALLOTT: As promised you earlier, please find attached a copy of the Preliminary Investigation Report of the East Bijou Watershed, Elbert and El Paso Counties, Colorado.

As major structures are being investigated on Bijou Creek by the Corps of Engineers and authority for USDA program development is limited to watersheds of 250,000 acres or less by P.L. 566, this investigation involved only the headwaters area of East Bijou Creek.

As pointed out in the Summary of this report, we have found the proposed project not feasible on a benefit-cost basis as required for P.L. 566 projects. The benefit-cost ratio of the two segments of the investigated program were 0.30 to 1.00 and 0.50 to 1.00, respectively.

The benefit-cost ratios were primarily affected by the low percent of flood plain lands in the watershed (2 percent) and the low frequency of widespread overbank flooding (occurring only in 1935 and 1965).

We have recommended local residents consider a similar program as being carried out on the headwaters of West Bijou Creek through ACP special project funding with SCS technical assistance, and other programs assistance that may be available and applicable.

Very truly yours,

F. A. MARK,  
State Conservationist.

Mr. ALLOTT. Mr. President, the elimination of the small dams proposal gave added probability to the potential construction of the channel as a part of the Narrows project, whether it was to be the large full-flow channel or a smaller channel which depended in part upon larger upstream dams for control of the Bijou Creek.

But, plans for control of the Bijou were still very unsettled. It was for this reason that the bill S. 3561 introduced May 28, 1968, contained the conditional authorization language in section 2, which I previously quoted.

I received two letters which will tend to demonstrate the various approaches being pursued during this period.

Mr. President, I ask unanimous consent that a letter from Maj. Walter P. Tokarz, dated June 18, 1968, and a letter addressed to the Corps of Engineers from Carl H. Kroh, mayor of Deer Trail, dated July 5, 1968, be printed in the RECORD at this point.

(There being no objection, the letters were ordered to be printed in the RECORD, as follows:)

JUNE 18, 1968.

HON. GORDON ALLOTT,  
*U.S. Senate, Washington, D.C.*

DEAR SENATOR ALLOTT: In the absence of Colonel McKenzie I am replying to your letter of 11 June 1968 asking about the current status of our plans for the Bijou Creek basin in Colorado.

Colonel McKenzie's letter of 12 January 1968 mentioned that \$40,000 was allocated in FY 1968 for our South Platte River basin studies. Foundation explorations for the potential West Bijou Creek Dam, the East Bijou Creek Dam, and the Big Muddy Creek Dam were completed in late May. The results of these explorations are being evaluated to determine if there will be any significant problems in the embankment designs for these dams.

Your letter also requested information about our coordination with the Soil Conservation Service. We have been in contact with the Soil Conservationist at Agate. He forwarded us a status report of the Service's current plans for the basin. Since the Service's plans are not firm, an evaluation of the effects of its plan on the potential Corps dams in the basin has not been made.

A member of Colonel McKenzie's staff met in Fort Morgan on 8 February 1968 with the Board of Directors for the Kiowa-Bijou Management District and a small group of land owners from Agate. The Colorado Water Conservation Board was represented by Mr. Stanley A. Miller. The potential 3-dam system was outlined and the status of the studies was explained. Interest was expressed for additional flood control measures upstream from the potential dams. The ground water recharge potentials of the dams were also discussed. The suggestions made at the meeting are being investigated.

On 9 May 1968, members of Colonel McKenzie's staff met with Mayor Kroh and other interested persons at Deer Trail regarding our studies. Concern was expressed at the meeting that the potential dams would not provide flood protection to the town. The group was informed that we would investigate other dam sites upstream from Deer Trail. Mayor Kroh was also informed that the feasibility of a local flood protection project for the town could be investigated under provisions of Section 205 of the 1948 Flood Control Act, as amended. A request from the town is required to initiate such a study. If such a request is received, we will immediately initiate the study.

Your interest in this matter is appreciated, and we will keep you informed of any significant developments in our studies.

If we can be of any further assistance to you, please call on us.

Sincerely yours,

WALTER P. TOKARZ,  
*Major, Corps of Engineers.*

TOWN OF DEER TRAIL, COLO.,  
*July 5, 1968.*

U.S. ARMY CORPS OF ENGINEERS,  
*Omaha District, Omaha, Nebr.*

Attention Mr. McKenzie.

DEAR SIR: During the month of May a group of Three, of the Corps of Engineers, met with a partial group of the Town Council. The Engineers stated that if the Town of Deer Trail wanted Flood Protection from the Bijou Creek, that a possible Levy Construction could take place with a complete Grant of Money from the Corps. This Grant could not be in excess of a Million Dollars, without going through too much Red Tape, provided the Town could furnish an abstract or make provisions to obtain the land on which such a structure could be placed.

The Town Board after much discussion has decided to express their wishes for assistance and advice in a program to give Deer Trail adequate Flood Protection of this type.

It is our understanding that the Corps will take charge of a study of our problem and will be able to meet with the Town Council at your convenience and discuss the problems which might occur in such a program.

Our Sincerest appreciation to you in this matter.

Sincerely,

CARL H. KROH,  
*Mayor.*  
ROBERT W. PUNDT,  
*Clerk.*

Mr. ALLOTT. Mr. President, at a field hearing of the Irrigation and Reclamation Subcommittee of the House Interior Committee held in Fort Morgan, Colo., in November 1968, the president of the North Kiowa Bijou Management District presented views expressing concern over control of the Bijou unless the plan included upstream retention dams. He, also, cast some doubt upon the advisability of the channel to the Narrows Reservoir.

Mr. President, I ask unanimous consent that a letter from Mr. Donald F. McClary, dated November 26, 1968, and the statement of Mr. Don Richardson, president North Kiowa Bijou Management District be printed in the RECORD at this point.

(There being no objection, the letter and statement were ordered to be printed in the RECORD, as follows:)

FORT MORGAN, COLO.,  
*November 26, 1968.*

Hon. GORDON ALLOTT,  
*Senate Office Building, Washington, D.C.*

DEAR GORDON: As you no doubt know, a hearing was held on the Narrows Project in Fort Morgan before the Sub-Committee on Irrigation of the Insular Affairs Committee of the House. At said hearing, Don Richardson of Wiggins, Colorado, as president of the North Kiowa Bijou Management District, appeared and made a statement in connection with said project, a copy of which statement is enclosed for your information.

As you can see from this statement, the Narrows Project leaves unanswered the real basic and prime question, insofar as flood control is concerned as to plans for flood control of Bijou Creek. From my information, it is absolutely correct that the Bijou Creek has been the prime source of any flood damage on the Lower South Platte and yet the Narrows Project does not tend to alleviate this flood threat.

The hearing in Fort Morgan was a Field Hearing before Representatives Johnson, Aspinall, Udall and White and there will be a later hearing in Washington on this project for appropriation. I urge you to familiarize yourself with the position of the Kiowa Bijou Management District and all those living in the vicinity of Bijou Creek as to their request for flood control of Bijou Creek. This is a major item in any proposed flood control of the Lower South Platte and until some concrete plan or project is made in connection with the Bijou Creek, the Narrows Project is only a partial plan and should not really be considered as flood control under the circumstances. The directors of the Kiowa Bijou Management District have only been contacted briefly by the corps of engineers in regard to any proposed flood control of the Bijou and have not really been consulted concerning this important issue, even though they represent everyone affected along the Bijou Creek.

After you have reviewed the enclosed statement, if you have any further questions, please feel free to contact me, and, on behalf of the Board of the North Kiowa Bijou Management District, I urge your support and help in securing for them the much needed flood control on Bijou Creek.

Sincerely yours,

DON.

#### STATEMENT OF NORTH KIOWA BIJOU MANAGEMENT DISTRICT

The North Kiowa Bijou Management District is a quasi municipal tax supported district encompassing ground water in Morgan, Weld, Adams and Arapahoe Counties along the drainage area of the Kiowa and Bijou Creeks from the Black

Forrest area near Colorado Springs to the Confluence of these streams with the Platte River. This district is entirely supported by agriculture and dependent upon some seven or eight hundred irrigation wells, as it has no other source of water or surface rights. One of the prime reasons for forming the management district was for the conservation of the water to supply our irrigation wells in that there has been a constantly declining water table. The water supply of the area is declining at the rate of three times the rate of natural discharge.

The district's board has not taken an official position for or against the Narrows Dam, although we do favor generally any conservation projects in this state. The water users in our area have favored the Hardin Site over the Narrows Site, and one of the reasons therefor is the fear that a dam constructed at the Narrows Site would, as a practical matter, lead to the ignoring of the flood problems on the Bijou Creek. The Bijou Creek joins the Platte River approximately five miles east of the proposed Narrows Dam Site. The planners of the Narrows project have from time to time taken alternate positions in connection with the utilization or effect of the Narrows project as flood control for Bijou Creek. As we informed, the original plans did not in any way include any control of the Bijou Creek. Later, and particularly after the devastating flood of 1965, the planners apparently gave at least some consideration to some type of flood control for Bijou Creek in the Narrows project. Even now the position of the planners of the Narrows Dam is not clearly stated nor is there any guaranty of inclusion of flood control on the Bijou in this project. Until definite and affirmative planning is made in connection with the flood control of the Bijou Creek, our area does not feel that this project answers our problems or accomplishes what was intended.

In order to more clearly define the effect of the Bijou in flood loss to the entire Northeastern Colorado area, may we turn the clock back approximately three years and six months. In a newspaper article appearing in the "Tri County Tribune", published in Deertrail, Colorado, on June 24, 1965, the following headlines appear "Flood in Bijou Creek on Rampage." The entire business district was wiped out and the article proceeded to explain the evacuation of the area and the damage caused. In the area of Agate, over two thousand sheep were lost as well as several hundred head of cattle. A week later, another issue explained the cleanup operations and the attempted rehabilitation of the area. This area was a true disaster area and one cannot evaluate the tragedy in terms of merely stock, crop and business loss, but we must consider the human misery. In this flood, we were fortunate in only losing one life; however, I am sure the parents of the baby who was lost in the disaster area count this loss in great proportion.

Again, if we turn the clock back about thirty years, we find other headlines in the newspapers of the area relating to the flood disaster of 1935, striking Wiggins, Elbert and Elizabeth, where these towns were inundated by Kiowa Creek and further describing the damage caused by Bijou Creek. The Narrows project was originally planned as a flood control project and yet the only two major floods in the area, in 1935 and 1965, would not in any way have been avoided by construction of this project along its original present plans. In 1965 the major flood damage in Fort Morgan and the South Platte Valley east of Fort Morgan was due almost entirely to flood water coming from Bijou Creek. This water was estimated at approximately five hundred thousand second feet at the crest. The Denver Flood had very little influence on the flooding in Morgan County. The South Platte was flowing at the rate of approximately 3,000 second feet when the Bijou flood hit. Most everyone in the area having knowledge of these floods is in agreement that the real damage was due to the Bijou Flood and not to the Platte coming into the area.

The Fort Morgan Times of June 16, 1965, carried many stories concerning the Bijou Flood and head lines such as "Bijou South Platte Lowlands Flooded" and "Dodd Bridge To Go" and "Park Threatened". On June 18, 1965, this paper carried headlines "Flood Reeks Havoc in Morgan County" and "Fort Morgan Cut Off on Three Sides". As you can see, two major floods are being described occurring over a period of three days. These floods were caused solely from water from the Bijou Creek. In "The Fort Morgan Times" on June 21, 1965, it described the request of \$675,030.00 of disaster funds by ditch companies in Morgan County. On June 22, 1965, this paper refers to the request of the Lower South Platte Conservancy District of \$1,500,000.00 disaster funds to repair irrigation structures. In "The Fort Morgan Times" on June 30, 1965, the flood damage in Morgan

County only was estimated at \$2,000,000.00, not including \$800,000.00 needed to repair county roads and bridges, and an unspecified amount for the repair of Burlington Railroad fill and bridge. Added to these sums, we must consider the loss of the State Highway bridge on the Interstate Highway near Wiggins and the loss of the highway bridges on Interstate 70 and Highway 36. Of course the flood area covers more than just Morgan County and the entire loss to bridges and other structures along the entire route of the Bijou would be almost unmeasurable. These are just examples in Morgan County, which might be multiplied several times by damages in Adams, Weld and Arapahoe Counties.

The question is, what, if anything, the Narrows project offers in its present plan to alleviate future disasters of this type. It has been suggested, although no definite commitment made, nor final plans prepared that the Bijou be diverted into the Narrows dam. This, of course, does not in any way solve the flood problems of our entire area along the Bijou Creek.

Everyone recognizes that the Bijou Creek carries a great deal of sediment during its flooding stage and, in fact in the past years, ditch companies have paid a man in Hoyt to call them and warn them if the Bijou was flooding so that they could close their headgates, because of the damage the silt laden water would do to their land. We are frankly suspicious of any statement made that the Bijou could, or would be controlled by the Narrows as we can visualize the effect upon the Narrows project, as in the case of the 1965 flood by the unrestricted flow into it of the silt, logs, dead animals and human refuse.

We feel that the present Narrows project, as planned, is objectionable to our area in that it is shortsighted and settles for something less than an adequate and total design for flood control for which it was intended. Until definite planning is included within the project for flood control of the Bijou, we feel that it is improper to classify this project as a real flood control project. The major floods of 1935 and 1965 all originated from waters falling south of Interstate 70 and much of the damage from these floods occurred between Highway 70 and the Narrows Dam site.

We had a graphic example in 1965 of what upstream flood control might achieve. Why did we not see in 1965 a similar story of flooding of Wiggins, Elbert and Elizabeth, as we did in 1935 when a similar potential existed. There was instituted on Kiowa Creek in the period from 1935 to 1961 a program of some 50 to 75 small upstream flood control dams, which were designed to alternately catch and release flood waters occurring in this area. This temporary delay of flood water allowed the Kiowa Creek in 1965 to hold this flood without extensive damage downstream.

Although Bijou Creek is more complex and has a larger stream system than the Kiowa, we feel that a combination of small dams and possibly some intermediate size dams could be designed to give complete control and protection. Any such system of dams should be concentrated on the upper reaches of the Bijou. Such a project, in addition to flood control on the Bijou, would have other benefits in that it would permit the water to move in a more orderly fashion which would reduce the amount of debris carried, as well as silt, and sand, thus improving the quality of the water. This system would also permit the aquifers in the Bijou area to be more adequately recharged and this potential disaster could be changed to a blessing for the people in the area.

The Board of Directors of the North Kiowa Bijou Management District wish to take this means of informing those interested that they feel the Narrows Project, in its present form does not answer the problem of flood control downstream on the Platte River and certainly not on the Bijou Creek itself. That until such time definite and adequate plans are included in this project for flood control in Bijou Creek, the Board of the district is in opposition to this project.

The district desires also to comment upon any proposed adjudication of decreed water rights for this project. We would refer to the policy statement of the Lower South Platte Water Conservancy District recently adopted wherein said district states "The district (Lower South Platte) has never intended that the Narrows priority to be used to shut down wells now being used so long as their manner of use is not materially changed and it now specifically states the Narrows should not and will not be used for this purpose." So long as this policy is carried forward in good faith in any eventual decrees, if any, given to this project, the board has no objection to any such proposed decree. However, any deviation from this policy, or any future proposed decree for the project which would not subordinate itself to existing ground water use would be objectionable to the board.

Mr. ALLOTT. Mr. President, however, it must be remembered that despite the

apparent increase in interest in upstream reservoirs, the official position of the State of Colorado, as expressed in the letter of comment to the Commissioner of Reclamation, remained unchanged.

Mr. President, I ask unanimous consent that the letter of comment from the Colorado Water Conservation Board, dated December 29, 1967, be printed in the RECORD at this point.

(There being no objection, the letter was ordered to be printed in the RECORD, as follows:)

COLORADO WATER CONSERVATION BOARD,  
Denver, Colo., December 29, 1967.

HON. FLOYD E. DOMINY,  
*Commissioner of Reclamation, Department of the Interior, Washington, D.C.*

DEAR MR. COMMISSIONER: Under date of September 26, 1967, you transmitted to the State of Colorado on behalf of the Secretary of the Interior a proposed report on the Narrows Unit, Missouri River Basin Project, Colorado. This report was sent to us for our views and recommendations as provided by Section 1(c) of the Flood Control Act of December 22, 1944. In accordance with your request this letter constitutes the reply of the State of Colorado.

In addition to review by the undersigned as the Governor's designated representative, the report has also been reviewed by the Colorado Department of Game, Fish and Parks and by the Lower South Platte Water Conservancy District, the latter entity being an official political subdivision of the State of Colorado formed for the specific purpose of acting as the contracting and operating agency for the proposed Narrows Project. The views of both the Colorado Department of Game, Fish and Parks and the Lower South Platte Water Conservancy District are in accord with the views expressed herein.

Long-time records on the South Platte River indicate that the average annual discharge of the river at the Colorado-Nebraska state line is approximately 340,000 acre-feet of water. About 100,000 acre-feet of water annually is required to pass the state line in order to comply with the terms of the South Platte River Compact. This means that on the average there is 240,000 acre-feet of water available for use in Colorado which is now being wasted at the state line. It was in recognition of this fact that the United States Congress on July 24, 1946, approved the construction of the Narrows Unit as a part of a comprehensive plan for the Missouri River Basin development. As a result of unfortunate disagreement within the State of Colorado itself, the project was never constructed as contemplated by the authorization of 1946.

In 1958, the Colorado Water Conservation Board requested the Bureau of Reclamation to re-evaluate the Narrows Project and to prepare a new feasibility report thereon. Subsequently, the Board contributed \$125,000 to the Bureau of Reclamation to commence the necessary studies. As a result of the great interest in Colorado for the construction of the project, the State has now expended approximately \$250,000 in an attempt to get the project constructed.

Since 1958 the members of our staff have worked closely with representatives of the Bureau of Reclamation as the new feasibility study progressed. We are therefore intimately acquainted with the scope of the study and with the basis for the findings and recommendations contained in the proposed report. We commend the diligent effort which has been made by Region 7 of the Bureau of Reclamation and we concur in the findings and recommendations contained in the proposed report.

In the letter of transmittal from the Bureau of Reclamation to the Secretary of the Interior under date of September 12, 1967, an alternative plan of development is presented which is not covered in the basic reports. The alternative plan is based upon an additional release of water from the proposed Narrows Reservoir for recreation and fish and wildlife enhancement. The alternative plan reduces the benefits of the project, and the proposed operation would violate the constitution and laws of this state. The alternative plan is therefore entirely unacceptable to the State of Colorado. We therefore urge that the basic plan as set forth in the report be adopted.

The original plan of development for the Narrows Project proposed the channeling of Bijou Creek into the Narrows Reservoir for flood control purposes. The wisdom of this provision was demonstrated by the fact that in June of 1965 a flood of unprecedented magnitude originated on Bijou Creek. The flood waters originating on this creek, along with waters discharged by other tributaries of the South Platte, caused the most damaging flood in the history of the State of Colorado, both in terms of the loss of human life and the widespread destruction of property.

At the present time the United States Corps of Engineers is actively pursuing a course of study looking to the control of Bijou Creek. Since these studies are not yet completed it has not been determined at this time whether flood control structures on the Bijou Creek itself or the channelization of the creek into the Narrows Reservoir would be the more feasible. As we view the proposed plans prepared by the Bureau of Reclamation, it is our understanding that Bijou Creek could be channeled into the Narrows Reservoir at some future time if such is found to be the most feasible plan.

In accordance with the Fish and Wildlife Coordination Act, our Colorado Department of Game, Fish and Parks has reviewed and approved the included report of the Bureau of Sports, Fisheries and Wildlife. We feel that every attempt should be made to carry out the recommendations contained therein, within the limitations of the available water supply.

Included in the project report in accordance with the Federal Water Project Recreation Act, it is proposed that a non-federal public body would be responsible for the payment with interest of \$691,300, which represents an estimated one-half of the separable costs allocated to fish and wildlife enhancement, together with all of the separable annual operation and maintenance costs, estimated at \$30,100. In addition, such nonfederal public body would be responsible for the repayment of reimbursable costs allocated to recreation to the extent of an estimated \$1,457,300 with an annual operation and maintenance cost estimated at \$204,200. We consider the recreation and fish and wildlife features of the project to be a necessary and integral part of the project. It is therefore the intent of the State of Colorado in connection with these features of the project to administer the project lands and water areas for recreation and fish and wildlife purposes, to bear the entire costs of such operation, maintenance and replacement, and to pay not less than one-half of the separable construction and acquisition costs of the project allocated to recreation, fish and wildlife purposes, as contemplated by the Federal Water Project Recreation Act.

In summary, the State of Colorado is in complete accord with the conclusions and recommendations set forth in Part XI of the proposed report. We respectfully urge that the Secretary of the Interior approve the proposed report in accordance with the recommendations contained in the report and the views expressed herein.

Respectfully submitted.

FELIX L. SPARKS,  
*Director.*

Mr. ALLOTT. Mr. President, it should be noted, however, that during this period controversy existed among the local interest as to the location of the larger dams as proposed by the Corps of Engineers, and, also, as to whether it would be wiser to reconsider a series of small watershed protection and flood prevention projects. By this time, the Corps of Engineers had shifted its emphasis from the Bijou Creek Basin to the Sand Creek Basin in the Denver area. This was due, in part, to the lack of concerted support in the Bijou Creek Basin for the three-dams system being proposed by the Corps of Engineers.

However, in December of 1968, the Colorado Water Conservation Board indicated an interest in an interim report on the Bijou Creek Basin.

Mr. President, I ask unanimous consent that a letter from Col. W. H. McKenzie III, dated February 6, 1969, be printed in the RECORD at this point.

(There being no objection, the letter was ordered to be printed in the RECORD, as follows:)

FEBRUARY 6, 1969.

Hon. GORDON ALLOTT,  
*U.S. Senate,  
Washington, D.C.*

DEAR SENATOR ALLOTT: In view of your expressed interest in the program of the Corps of Engineers within Colorado, I am furnishing the following report relative to study of the Bijou Creek basin.

Subsequent to the June 1965 flood, the Omaha District made an investigation of potential reservoir sites in the Bijou Creek basin. After preliminary screening of these sites, three sites were found which could provide flood control for the lower Bijou Creek basin and for the South Platte River flood plains downstream from Bijou Creek. One site is located on West Bijou Creek about 5 miles upstream from Byers; the second is located at the confluence of Middle and East Bijou Creeks; and the third is located on Big Muddy Creek about 16 miles upstream from Bijou

Creek. The 3-dam system would control nearly 70 percent of the total drainage area of Bijou Creek.

About 75 percent of the benefits attributable to these potential dams would result from the reduction of flood damage potentials along the South Platte River flood plain. Local interests downstream from the potential reservoir sites have indicated an interest in the seasonal use of flood storage for groundwater recharge. Further study of the groundwater recharge capability of the system and potential benefits is required.

Local interests downstream from the potential Bijou Creek reservoir sites generally support the 3-dam system. Local interests in the area of and upstream from the potential reservoir sites have indicated interest in smaller dams in the upstream areas of the Bijou Creek basin. Studies by the Soil Conservation Service and the Omaha District indicate that small reservoirs in the upstream areas of the Bijou Creek basin lack economic feasibility and would have little effect on South Platte River flows.

Most of the support for the smaller reservoirs comes from the Deer Trail area which suffered severe damage in the 1965 flood. The Omaha District is investigating the feasibility of a local flood protection project at Deer Trail under provisions of Section 205 of the 1948 Flood Control Act, as amended. The study is nearing completion and it appears that a local flood protection project at Deer Trail would be economically feasible. Local interests will be contacted in the near future to determine their willingness and ability to provide the necessary local cooperation.

Due to the lack of concerted support in the Bijou Creek basin for the potential 3-dam system, the Omaha District shifted its primary study emphasis to the Sand Creek basin in the Denver area. Potential reservoir sites on Sand and Toll Gate Creeks are in danger of being developed for other uses. Since time is critical, an interim report on the Sand Creek basin has been scheduled for completion by July 1, 1969.

In December, the Colorado Water Conservation Board indicated an interest in an interim report on the Bijou Creek basin. Our studies in the Bijou Creek basin have been separated from our South Platte River investigation and an interim report will be prepared. The interim report on the Bijou Creek basin is tentatively scheduled for completion in December 1969. The review report, which would cover the remainder of the South Platte River basin, is scheduled for completion in March 1972.

If I can be of any further assistance to you in this matter, please call on me.

Sincerely yours,

W. H. MCKENZIE III,  
*Colonel, Corps of Engineers.*

Mr. ALLOTT. Mr. President, it appears that local interest in the corps proposal began to rekindle, and the corps was urged by the North Kiowa Bijou Management District to develop their interim report as soon as possible.

Mr. President, I ask unanimous consent that a letter addressed to Col. W. H. McKenzie III, dated March 6, 1969, together with a letter from Mr. Donald F. McClary, dated March 13, 1969, be printed in the Record at this point.

There being no objection, the letters were ordered to be printed in the Record, as follows:

FORT MORGAN, COLO.,  
March 13, 1969.

HON. GORDON ALLOTT,  
*Senate Office Building,  
Washington, D.C.*

DEAR SENATOR ALLOTT: I thought you might be interested in the enclosed letter to the Corps of Engineers bringing you up to date on developments in regard to flood control of Bijou Creek. The North Kiowa Bijou Management District appreciates your interest in this very important problem, and is hopeful that you can assist them in bringing needed flood control on Bijou Creek under the plans developed by the Corps. of Engineers.

Sincerely yours,

DON.

FORT MORGAN, COLO.,  
March 6, 1969.

Re North Kiowa Bijou Management District, Bijou flood control.

Col. W. H. McKENZIE III,  
District Engineer,  
Omaha, Nebr.

DEAR COLONEL McKENZIE: On behalf of the North Kiowa Bijou Management District, I wish to thank you and John Velehradsky for your cooperation and concern in meeting with the North Kiowa Bijou Management District to discuss and develop mutually acceptable plans for control of Bijou Creek. Mr. John Velehradsky attended the annual meeting of the taxpayers within the management district and gave a good discussion of your tentative plans for control of Bijou Creek by the suggested three dam systems.

At this meeting, representatives of the Soil Conservation Service as well as the Colorado Water Board were in attendance and gave an explanation of their positions and recommendations on control of Bijou Creek. This meeting was well attended by the taxpayers in the district, in that the district gave notice by mail to all taxpayers within the district of this important meeting and there were slightly more than 100 taxpayers in attendance.

After a full discussion by the taxpayers present, the Board of the management district and their engineer, as well as an extensive question period, the motion was duly made, seconded and unanimously carried that the district go on record requesting the Corps of Engineers to proceed as rapidly as possible to develop their studies and reports for flood control of the Bijou Creek at the highest feasible points. That further the district urges the Corps to develop their interim report as soon as possible but not later than December, 1969, to facilitate presentation or authorization in early 1970.

The Board of Directors of the district has also instructed me to advise you that they stand ready, willing and able to cooperate with the Corps of Engineers in any way possible to facilitate the developing of a feasible plan which will develop flood control with consideration of ground water re-charge potential. The possible benefits of ground water re-charge cannot be over emphasized in connection with the developing of a feasible plan in that the area of potential benefits is one in which re-charge is sorely needed as they are depleting the ground water at the rate in excess of 55,000 acre feet per year, or over the normal rate of re-charge in the area.

If there is any information you or your staff desire, or if you have any suggestions as to what we may do to facilitate the development of this plan, please contact me.

Yours very truly,

Mr. ALLOTT. Mr. President, additional expressions of interest in the proposal of the Corps of Engineers followed.

Mr. President, I ask unanimous consent that a letter from Mr. Thomas H. Bradbury, dated March 26, 1969, a letter from Mr. Marvin W. Etchison, dated June 12, 1969, together with a resolution adopted by the Weldon Valley Ditch Co., May 5, 1969, a letter from Mr. Ralph E. Varner, dated April 30, 1969, together with a resolution adopted by the City Council of Fort Morgan, April 1, 1969, and a letter from Mr. Harold E. Taylor, dated April 10, 1969, be printed in the RECORD at this point.

(There being no objection, the matter was ordered to be printed in the RECORD, as follows:)

BRADBURY LAND & CATTLE CO.,  
Byers, Colo., March 26, 1969.

Hon. GORDON ALLOTT,  
U.S. Senator, U.S. Senate, Washington, D.C.

DEAR SIR: I am very much in favor of the dam which has been recommended to be built by the Corps of Engineers on the West Bijou, south of Byers, Colorado.

In the flood of 1965, we lost over 120 head of cattle and 1,500 acres of land. This land is now useless sand bars, gulleys, and plain old blowsand. If this could be eliminated, it would be a great tax and economical boost to the state. This was top bottom-land, producing quality grass and crops. Now it is classified No. 5 for production and tax purposes.

Everyone I have talked to from east of Colorado Springs, where the Bijou Basin begins, clear to Wiggins, where it dumps into the Platte River, have been in favor of damming the West Bijou. Everyone seems highly favorable of such a project, knowing the protection it would offer their families, properties, and communities.

If you are interested in seeing this project carried out, I'd be more than willing to circulate a petition among the landowners and renters to show their opinions on this matter. If the statistical results of this survey would be beneficial to you, I'll get the job done and furnish you with the results.

I am looking forward to your comments on this project.

Sincerely yours,

THOMAS H. BRADBURY.

WELDONA, COLO.,  
June 12, 1969.

HON. GORDON ALLOTT,  
New Senate Building,  
Washington, D.C.

DEAR SENATOR ALLOTT: Enclosed is a resolution passed by the Board of Directors of the Weldon Valley Ditch Company of Weldon, Colorado.

Please give this resolution sincere consideration. Thank you.

Sincerely,

MARVIN W. ETCHISON,  
Secretary.

#### RESOLUTION

(The following is a Resolution passed by the Board of Directors of the Weldon Valley Ditch Company of the 5th day of May, A.D., 1969, after a long discussion of storage on the South Platte and flood control on the Bijou.)

"Be it resolved by the Board of Directors of the Weldon Valley Ditch Company, that the Weldon Valley Ditch Company record its desires and support of the Corps of Army Engineers in building flood control dams or multiple purpose dams on Bijou Creek in order to control and stop the damaging floods that have occurred on the South Platte River as a result of the uncontrolled flow of Bijou Creek.

"It is the opinion of this Board that the Army Corps of Engineers is the proper and logical body to take over the construction of dams on Bijou Creek; that the plan of the Army Corps of Engineers is feasible and that funds probably are available for this purpose.

"Be it further resolved that a copy of this resolution be sent to the Congressional Delegation from Colorado.

In witness whereof, the Board of Directors of the Weldon Valley Ditch Company have placed their signatures this 5th day of May, A.D., 1969.

MAURICE JONES.  
DONALD E. CHRISTENSEN.  
MARVIN W. ETCHISON.  
JOHN PARACHINI.  
THEODORE JACOBSON.

I hereby certify that the above and foregoing is a true copy of the Resolution passed by the Board of Directors of the Weldon Valley Ditch Company on the 5th day of May, A.D., 1969.

MARVIN W. ETCHISON,  
Secretary.

CITY OF FORT MORGAN, COLO.,  
April 30, 1969.

HON. GORDON ALLOTT,  
Senior Senator from Colorado,  
Senate Office Building,  
Washington, D.C.

DEAR SENATOR ALLOTT: Attached please find a resolution by the Mayor and Council of the City of Fort Morgan endorsing flood control in the Bijou Creek drainage area south and west of Fort Morgan.

This resolution was unanimously approved by Mayor John G. Hamlin, and Alderman L. L. Canfield, Reuben Peif, Robert Hall, Francis S. Jolliffe, Lenhard Johnson, Elmer Tieman.

Sincerely yours,

RALPH E. VARNER,  
*City Superintendent.*

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RESOLUTION

Be it resolved by the City Council of the City of Fort Morgan, Colorado that the City Council and its individual members, on behalf of the City of Fort Morgan, Colorado does hereby support and endorse the Construction of Flood Control dams and works on the upper water-shed of Bijou Creek.

The Bijou Creek at flood has in the past, and can in the future seriously damage vital and expensive properties and facilities in Fort Morgan.

To control Bijou Creek to prevent flooding would be to secure the City and its citizens from such loss of property and facilities and perhaps secure even the lives of some of them.

Further, we believe such dams would improve the underground water level and help stabilize the irrigation potential of the farming community along the water way.

We, therefore, request that the Congress look with favor upon forthcoming requests by the Corps of Engineers of the United States for appropriations to harness the flood potential of "The Bijou".

Passed, approved and adopted this 1st day of April, 1969.

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WELDON VALLEY PROTECTIVE ORGANIZATION,  
*Weldona, Colo., April 10, 1969.*

Hon. GORDON ALLOTT,  
*Senate Office Building,  
Washington, DC.*

SIR: At a regular meeting of the steering committee of the Weldon Valley Protective Organization held Wednesday evening, April 9, 1969, the following resolution was unanimously adopted.

The Weldon Valley Protective Organization Whole-heartedly supports the Corps of Army Engineers plan to build a series of flood control dams on the upper portion of Bijou Creek in Eastern Colorado.

Respectfully submitted.

HAROLD E. TAYLOR,  
*Secretary.*

Mr. ALLOTT. Mr. President, almost contemporaneously with the resurgence of interest in the three-dam proposal of the Corps of Engineers, as expressed in the letters and resolutions I just referred to, I received a letter from Mr. F. A. Mark, of the Soil Conservation Service, summarizing the efforts of the Service to assist in developing a plan of works to control flood in the Bijou Creek basin. Consideration was given not only to small watershed protection and flood prevention projects under Public Law 566 but also to an ACP special project. His letter is self-explanatory, and I ask unanimous consent that the letter referred to, dated April 9, 1969, be printed in the RECORD at this point.

(There being no objection, the letter was ordered to be printed in the RECORD, as follows:)

U.S. DEPARTMENT OF AGRICULTURE,  
SOIL CONSERVATION SERVICE,  
*Denver, Colo., April 9, 1969.*

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Hon. GORDON ALLOTT,  
*U.S. Senator,  
U.S. Senate, Washington, D.C.*

DEAR SENATOR ALLOTT: This letter is in response to a request for additional information on flood control problems on Bijou Creek, Colorado, as requested by Mr. Blake last week.

Following a field examination on November 2, 1965, which was one of many requested following the 1965 flood, we published a Preliminary Investigation

Report on the East Bijou Watershed in February 1968, a copy of which is attached. On the back side of page 1 of this report is noted two alternative flood prevention programs which were studied. The first indicated a benefit-cost ratio of 0.30 to 1.00; the second, 0.50 to 1.00, neither of which justifies a project proposal.

In the meantime, the soil conservation districts in Elbert County (Agate and Big Sandy) in cooperation with the Elbert County Agricultural Stabilization and Conservation Committee (ASCS) proposed an ACP Special Project to interest a local group of farmers and ranchers to join in constructing through ACP cost shares a number of prevention dams in the East Bijou Creek tributaries.

A project was approved and ACP funds were earmarked for the project. SCS field personnel designed and staked out dams at feasible sites.

Several farmers interested in the project later withdrew due to some financial reverses in a re-used equipment sale following the accidental death of the promoter of the plan. This led to less dams being constructed than originally planned.

The locations of planned and completed structures are shown on the attached map and Table 1 and Table 2.

TABLE 1.—DAMS CONSTRUCTED OR UNDER CONSTRUCTION

Name	Location <sup>1</sup>	Year constructed	Total storage (acre feet)	Drainage area (square miles)
△ Special projects ACP:				
1. Walter Burns detention dam No. 1	NE <sup>2</sup> 11-8-61	1967	92.8	2.0
2. Joel Fletcher	E <sup>2</sup> 27-7-61	1967	( <sup>3</sup> )	.2
3. Del Carter	SW <sup>2</sup> 33-9-60	1968	( <sup>3</sup> )	1.2
4. Lambert and Carneal	SW <sup>2</sup> 30-7-60	1968	( <sup>3</sup> )	1.2
5. Lambert and Carneal	NE <sup>2</sup> 22-7-60	1968	( <sup>3</sup> )	.5
6. Dave Nagel	E <sup>2</sup> 12-7-60	1968	( <sup>3</sup> )	.5
7. Frank Ehmann detention dam No. 1	SW <sup>2</sup> 14-7-61	<sup>2</sup> 1969	34.7	.4
○ Great Plains conservation program:				
1. Joseph Sproch detention dam No. 1	NE <sup>2</sup> 14-7-61	<sup>2</sup> 1969	146	3.1

<sup>1</sup> All structures are in Elbert County, Colo.

<sup>2</sup> Under construction.

<sup>3</sup> Storage capacity is less than 10 acre-feet.

<sup>4</sup> Combination stock water and detention storage dam. Storage data not available.

TABLE 2.—PROPOSED DAMS

Name	Location	Total acre feet storage	Drainage area square miles
Special projects ACP:			
1. Frank Ehmann detention dam No. 2	NE <sup>1</sup> 17-7-60		2.0
2. Pearl Shirkey detention dam No. 1	NW <sup>1</sup> 19-7-60	56.1	1.3
3. Harold Benjamin	SW <sup>1</sup> 35-8-60		1.0
4. Oleyjar-Madigan	SW <sup>1</sup> 23-10-62		7.0
5. Ed Hertnecky No. 7	SE <sup>1</sup> 15-10-62		2.0
6. Ed Hertnecky No. 8	E <sup>2</sup> 7-10-61		4.2
Public Law 566—East Bijou creek watershed (preliminary investigation):			
EB-1	7-10-61	1,775	20.8
EB-2	7-10-61	512	6.0
EB-4	5-10-61	367	4.3
EB-5	33-9-61	546	6.4
EB-6	25-9-61	452	5.3
EB-7	21-9-60	2,048	24.0

<sup>1</sup> Under construction.

<sup>2</sup> Storage capacity is less than 10 acre-feet.

You will note the first structures we installed in 1967. Also note in Table 1, the Joseph Sproch dam (146 acre feet), the largest dam is being constructed under Mr. Sproch's Great Plains Conservation Program contract.

In addition to ACP cost-share funds, the Elbert County Commissioners donated cost of outlet tubes as requested by the Colorado State Engineer to permit the detained storage to pass through in a specified number of hours to comply with downstream water right requirements. As I recall county funds were provided in the amount of about \$2,000. Unfortunately, many farmers and ranchers do

not have sufficient funds available to provide their share of costs in either the ACP or Great Plains Conservation Program, and are frequently those most needing help.

#### SEDIMENT DAMAGES—BIJOU CREEK

The 9 small flood water retarding dams (Structures Triangle-1 & -7, Hexagon-1, and, Square-1, -2, -3, -4, -5, and -6) shown on the attached map, either built or proposed on the upper reaches of East Bijou Creek and Middle Bijou will control sediment from about 23 square miles lying above them. They will hold back about 150 acre-feet of sediment over a 25-year period. About 20 percent of this sediment will be derived from gully and stream-bank erosion; the remainder will be derived from sheet erosion. The average annual amount of sediment held behind these dams is estimated to be about 2 percent of the total sediment passing the lower end of the Bijou Creek drainage each year.

If the 7 floodwater-retarding structures proposed as a part of a Watershed Protection Project on the upper part of East Bijou Creek were built, they would reduce sediment passing the lower end of Bijou Creek by about 5 percent.

#### CONCLUSION

Preliminary Investigations for the East Bijou Creek Watershed made by the Watershed Planning Party indicates that the benefit to cost ratio for the PL-566 floodwater retarding dam sites EB-1, EB-2, EB-4, EB-5, EB-6, and EB-7 is 0.3 to 1.0 and that the program is not feasible. Hence, there is little likelihood of their being built.

The total drainage area of the 8 small floodwater retarding dams that have been constructed or are being constructed on the headwaters of Bijou Creek is 9.1 square miles. These dams are cost-shared under the Great Plains Conservation Program or the Special Projects Agricultural Conservation Program. The drainage area of the 6 dams presently proposed for construction under the Special Projects Agricultural Conservation Program is 17.5 square miles. Some of these may not be built because of site or financial limitations.

These small floodwater retarding dams are being justified on the basis of damages that would otherwise occur near the sites. It is obvious that their effect on flood flows, erosion damage and sediment damage in the lower portion of the Bijou Creek drainage is almost negligible because of the small percentage of drainage area with dams constructed or under construction to date—0.7%.

Structures currently planned would increase the total percentage with dams to 2.0% and this would still be insignificant. The drainage area of Bijou Creek at U.S. Highways 6 and 34 near Wiggins, Colorado is 1,314 square miles. The reported June 1965 flood flow was 466,000 cubic feet per second.

Many stockwater ponds and many miles of terraces and diversions have also been built in Elbert County under the 1967 and 1968 Special Projects ACP, together with similar practices on many farms and ranches as part of an overall needed conservation program carried out by 3-10 year Great Plains Conservation Program contracts. Their justification and effect is also largely local in nature. They would have little effect on downstream damage from a major storm.

Following the 1965 flood we encouraged interested local residents of Bijou Creek, through their soil conservation districts, to explore possibilities of assistance from the Corps of Engineer's district engineer at Omaha. The Corps compiled with subsequent requests and made a substantial study. As the USDA Small Watershed Program (PL 566) is limited to watersheds under 250,000 acres, and the potential volume of water (as 1965 proved) was so great even in the upper reaches of the Bijou three main tributaries, it was obvious to us, SCS or ACP assistance would be necessarily limited to small tributaries of the three main forks of the Bijou system.

Attached are copies of our initial contact with the Corps Omaha District on October 18, 1967, and the District Engineer's reply on October 30, 1967. We supplied the Corps with copies of our Preliminary Investigation in February 1968.

Mr. Stanley Miller, formerly a career employee of the Corps and for several years an engineer with the Colorado Water Conservation Board, provided excellent liaison between the Corps, SCS, and local interests. Mr. Miller and others of the Water Board provides SCS appreciable assistance on many PL 566 watershed projects.

When the Narrows Dam again became active, Mr. Miller followed closely the interrelated aspects of the Bureau of Reclamation and Corps of Engineers studies along with potentials of USDA activities in the small Bijou tributaries.

On February 27, 1969, the North Kiowa-Bijou Ground Water Management District held a local meeting concerning its interests in the Corps Bijou dam proposals. Mr. Stanley Miller took an active part together with my assistant who explained the limitations of aid on the Bijou through PL 566 and other USDA programs. Mr. John Velehradsky, represented the Omaha District of the Corps.

The Soil Conservation Service will continue to cooperate through its authorized programs with local people, with ASCS and others in aiding in the alleviation of local damages in the upper tributaries of the Bijou, but as previously indicated, feasible measures will have little effect on the major damage potential from floods and sediment of the Bijou.

If I can be of further assistance on this matter I shall be happy to comply.

Sincerely yours,

F. A. MARK,  
*State Conservationist.*

Mr. ALLOTT. Mr. President, on December 10, 1969, the Corps of Engineers held public hearings in the towns of Wiggins and Deer Trail to explain a potential plan of improvements in the Bijou Creek basin. According to a letter I received from the district engineer, Col. B. P. Pendergrass, testimony was overwhelmingly in favor of the potential plan. Colonel Pendergrass advises that he is in receipt of resolutions supporting the potential plan from 16 organizations and political subdivisions of the State. He also advises:

"Opposition appeared to be centered against specific reservoir sites in favor of alternative sites and upstream storage."

Mr. President, I ask unanimous consent that a letter from Col. B. P. Pendergrass, dated December 16, 1969, be printed in the RECORD at this point.

(There being no objection, the letter was ordered to be printed in the RECORD, as follows:)

DECEMBER 16, 1969.

Hon. GORDON L. ALLOTT,  
*U.S. Senate, Washington, D.C.*

DEAR SENATOR ALLOTT: On 10 December 1969, I held public hearings in Wiggins and Deer Trail concerning my studies in the Bijou Creek basin.

I opened the Wiggins hearing by describing the potential plan of improvements in the Bijou Creek basin. After my opening statement, the meeting was opened for statements. A total of about 120 persons were in attendance. Of those present, 14 persons made statements. The testimony was overwhelmingly in favor of the potential plan of improvement. One individual asked for further study of potential alternative reservoir sites on East and West Bijou Creeks. Resolutions supporting the potential plan of improvement were presented by the following organizations:

- Lower South Platte Conservancy District.
- Board of Commissioners, Logan County.
- Logan Irrigation District.
- Hiff Irrigation District.
- North Sterling Irrigation District.
- Sterling Chamber of Commerce.
- Sterling Production Credit Association.
- Dueul and Snyder Improvement Company.
- City of Brush.
- Brush Chamber of Commerce.
- Julesburg Irrigation District.
- Fort Morgan Chamber of Commerce.
- Weldon Valley Ditch Company.
- North Kiowa-Bijou Management District.
- Weldon Valley Protective Association.
- City Council, Fort Morgan.

About 133 persons attended the hearing in Deer Trail. Of those present, 13 made statements concerning the potential plan of improvement. Representatives of local soil conservation districts indicated that they favored upstream storage and land treatment measures. Speakers from the Byers area were in favor of the potential dam on West Bijou Creek. A petition, containing the names of 125 persons from the Byers and Deer Trail areas who support the potential plan of improvements, was presented at the hearing.

In general, the potential plan of improvement was supported at both hearings. Opposition appeared to be centered against specific reservoir sites in favor of alternative sites and upstreams storage. Suggestions made by local interests will

be investigated. If they are found to be feasible, the plan of improvement will be altered to include them.

If I can be of any further assistance to you in this matter, please call on me.

Sincerely yours,

B. P. PENDERGRASS,

*Colonel, Corps of Engineers District Engineer.*

Mr. ALLOTT. On January 14, 1970, the Colorado Water Conservation Board, at its regular meeting, adopted a resolution supporting the potential plan of the Corps of Engineers as presented during the public hearings held on December 10, 1969.

Mr. President, I ask unanimous consent that the January 14, 1970, resolution of the Colorado Water Conservation Board be printed in the RECORD at this point.

(There being no objection, the resolution was ordered to be printed in the Record, as follows:)

#### RESOLUTION

Whereas, in past years numerous floods have originated in the Bijou Creek Basin, Colorado, resulting in the loss of human lives and property damages in excess of \$100 million; and

Whereas, in the year 1965 a major flood originated in the Bijou Creek Basin resulting in the loss of two human lives and the loss of real and personal property in excess of \$45 million, including severe damages to the communities of Byers, Agate and Deer Trail, together with the loss of portions of Interstate Highways 70 and 80S; and

Whereas, the Corps of Engineers, United States Army, is now proposing a program of flood control in the Bijou Creek Basin which would virtually eliminate the destruction which might be caused by similar future floods in the Bijou Creek Basin; and

Whereas, it appears that the residents of the area affected by Bijou Creek floods are overwhelmingly in support of the project plan presented by the Corps of Engineers; and

Whereas, the Boards of County Commissioners of Morgan and Logan Counties, the Lower South Platte Water Conservancy District, the Logan Irrigation District, the Iliff Irrigation District, the North Sterling Irrigation District, the Sterling Chamber of Commerce, the Sterling Production Credit Association, the Duel and Snyder Improvement Company, the City of Brush, the Brush Chamber of Commerce, the Julesburg Irrigation District, the Fort Morgan Chamber of Commerce, the Weldon Valley Ditch Association, the North Kiowa-Bijou Management District, the Weldon Valley Protective Association and the City of Fort Morgan have by resolution expressed their support of the flood control plan proposed by the Corps of Engineers;

Now, therefore, be it resolved by the Colorado Water Conservation Board in regular session assembled this 14th day of January, 1970, in Denver, Colorado, that it commends and supports the Bijou Creek Flood Control Plan prepared by the Corps of Engineers, United States Army; and

Be it further resolved that the State of Colorado through the Colorado Water Conservation Board shall lend its efforts to cooperate in every way to secure the authorization and subsequent construction and operation of the Bijou Creek Flood Control Project; and

Be it further resolved that the Congress of the United States be urged to authorize the construction of the Bijou Creek Flood Control Project at the earliest possible date; and

Be it further resolved that the Secretary of the Colorado Water Conservation Board is hereby directed to send certified copies of this resolution to each member of Colorado's congressional delegation; to the Governor of the State of Colorado; to the Chief of Engineers, United States Army, and to the District Engineer, United States Army Corps of Engineers, Omaha District.

#### CERTIFICATE

I certify that the foregoing is a true and correct copy of a resolution adopted by a majority vote of the members of the Colorado Water Conservation Board in regular session assembled at Denver, Colorado, on the 14th day of January, 1970.

FELIX L. SPARKS,

*Secretary.*

Mr. ALLOTT. From all of this, it would appear that the potential plan of the Corps of Engineers has both the support of the local people in the affected area and the support of the official organ of the State of Colorado responsible for such matters.

The only question remaining is whether the diversion channel into the Narrows Reservoir, in either its larger or smaller configuration, which would logically be a part of the Narrows project and should be authorized as such, is still included in the potential plan. It should be noted that three-fourths of the benefits attributable to the potential plan would result from the reduction of flood damage potentials along the South Platte River flood plain. This was pointed out in Colonel McKenzie's letter of February 6, 1969, which was inserted in the RECORD earlier. It should also be noted that according to the map included in the brochure prepared by the corps for the December 10, 1969, public hearings, the dams proposed for the Bijou Creek Basin are many miles above the confluence of the Bijou Creek with the South Platte River. The area below the proposed dams remain uncontrolled. I recall that during the same June 1965 flood, my own hometown of Lamar received severe flood damage despite the fact that it is only a few miles downstream from a major reservoir on the main stem of the Arkansas River. The damaging waters came from tributary creeks whose drainage area is only a small fraction of the drainage area of the Bijou Creek.

With this in mind, I inquired of the Corps of Engineers as to status of the diversion channel into the Narrows Reservoir. I was informed that while the diversion channel was feasible, it was not acceptable to local interests. Colonel Pendergrass stated that among the people in the Bijou Creek area, the South Platte below Bijou Creek, the Colorado Water Conservation Board and the Denver office of the U.S. Bureau of Reclamation, there are no proponents for the diversion channel.

Mr. President, I ask unanimous consent that my letter to Colonel Pendergrass, dated February 10, 1970, together with the reply, dated February 25, 1970, be printed in the Record at this point.

(There being no objection, the letters were ordered to be printed in the RECORD, as follows:)

U.S. SENATE,  
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,  
*Washington, D.C., February 10, 1970.*

Col. B. P. PENDERGRASS,  
*District Engineer, Omaha District, Corps of Engineers,  
Omaha, Nebr.*

DEAR COLONEL PENDERGRASS: The report on the Narrows Unit of the Missouri River Basin Project, Colorado, together with comments of the various State agencies and Federal agencies concerned, was printed as House Document 320, 90th Congress, 2nd Session. Quoting from the comments of the Colorado Water Conservation Board as found on page 145 of that Document, the following statement is made:

"The original plan of development for the Narrows Project proposed the channeling of Bijou Creek into the Narrows Reservoir for flood control purposes. The wisdom of this provision was demonstrated by the fact that in June of 1965 a flood of unprecedented magnitude originated on Bijou Creek. The floodwaters originating on this creek, along with waters discharged by other tributaries of the South Platte, caused the most damaging flood in the history of the State of Colorado, both in terms of the loss of human life and the widespread destruction of property. At the present time the U.S. Corps of Engineers is actively pursuing a course of study looking to the control of Bijou Creek. Since these studies are not yet completed it has not been determined at this time whether flood control structures on the Bijou Creek itself or the channelization of the creek into the Narrows Reservoir would be the most feasible. As we view the proposed plans prepared by the Bureau of Reclamation, it is our understanding that Bijou Creek could be channeled into the Narrows Reservoir at some future time if such is found to be the most feasible plan."

I am also in receipt of a brochure prepared by the Omaha District Office of the Corps of Engineers entitled "Information on Potential Plan of Improvement of Bijou Creek Basin, Colorado". I have been informed that public hearings have been held at both Wiggins and Deer Trail, Colorado, on Wednesday, December 10, 1969 on this "Potential Plan of Improvement". From my review of the aforementioned "Potential Plan", I am unable to discover any mention of channelization of Bijou Creek into the Narrows Reservoir. For my information, I would

appreciate being advised as to the status of the earlier channelization proposal with regard to present Corps of Engineers plans relating to the control of the Bijou Creek Basin.

Your early attention will be appreciated. Best regards.

Sincerely yours,

GORDON ALLOTT,  
*U.S. Senator.*

FEBRUARY 25, 1970.

HON. GORDON ALLOTT,  
*U.S. Senate,*  
*Washington, D.C.*

DEAR SENATOR ALLOTT: This is in reply to your letter of 10 February 1970 concerning the relationship between the potential system dams in the Bijou Creek basin and the potential diversion Bijou Creek into the proposed Narrows Reservoir.

During my studies of the Bijou Creek basin a diversion channel to carry Bijou Creek into the Narrows Reservoir was investigated and found to be feasible but not acceptable to local interests. We have had extensive contacts with the local people in the Bijou Creek area and along the South Platte below Bijou Creek, and with the Colorado Water Conservation Board and the Denver office of the U.S. Bureau of Reclamation. There are no proponents for the diversion channel.

In contrast the potential reservoir system for Bijou Creek, which is also feasible, has apparent unanimous support including the support of the Colorado Water Conservation Board and Region 7 of the U.S. Bureau of Reclamation.

There are several reasons why the reservoirs received support and the diversion did not. First, the potential Bijou Creek dams would provide flood protection for about 156,000 acres within the Bijou Creek basin, including the protection of the towns of Deer Trail and Byers, as well as furnishing protection for the South Platte River downstream from Bijou Creek. Second, the regulated outflow from the reservoirs would provide opportunities to recharge the groundwater aquifer through channel infiltration or through downstream infiltration ponds. Third, the high sediment yield from Bijou Creek would be held in the Bijou Creek reservoirs rather than being discharged into the Narrows Reservoir.

It is estimated that about 100,000 acrefeet of sediment would enter the Narrows Reservoir if the diversion channel were built, with about 75,000 acre-feet of the depletion occurring in the conservation storage zone of the reservoir, reducing the irrigation benefits. The resultant delta formation at the outlet of the diversion channel into Narrows Reservoir could produce adverse effects on the general recreation and fish and wildlife recreation benefits for the Narrows Reservoir and make it less attractive environmentally.

During the hearings on 10 December 1969, the potential diversion was referred to only once in the testimony. The reference was unfavorable to the diversion. Local interests along the South Platte River and in the Bijou Creek basin expressed unanimous support for dams in the Bijou Creek basin at the public hearings. The Colorado Water Conservation Board staff indicated in informal discussions a preference for dams in the Bijou Creek basin. On 14 January 1970, the Colorado Water Conservation Board adopted a resolution supporting the potential dams in the Bijou Creek basin.

Based on the public hearings and the local contacts by my staff and me, I am convinced that the people in the basin overwhelmingly support dams instead of the diversion.

If I can be of any further assistance to you in this matter, please call on me.

Sincerely yours,

B. P. PENDERGRASS,  
*Colonel, Corps of Engineers, District Engineer.*

Mr. ALLOTT. Inasmuch as there is no local nor State support for any diversion channel, and since the plan of the Corps of Engineers will require separate legislative authorization and will be considered by the Public Works Committee, there is no reason to delay action upon the authorization of the Narrows project. The option of incorporating some sort of channel diversion was maintained open to the planners and local people for a time sufficient for them to come to a decision. While the plan of the corps has not been reviewed and approved, and has not been released for detailed scrutiny by me or the public, the sentiment of the local people, the State, the Bureau of Reclamation, and the Corps of Engineers appears to be overwhelmingly against any thought of a diversion channel.

The Narrows project is a very good reclamation project. It has a high benefit-to-cost ratio, 1.89 to 1, will provide badly needed supplemental water to the central and lower South Platte River Basin. The project will provide additional water through river regulation. It is estimated that the reservoir will conserve up to an average of 240,000 acre-feet of water annually now being wasted.

As a multipurpose project, it will not only conserve water, but also will provide some flood protection. Fish and wildlife enhancement benefits are quite good, and the reservoir will provide recreational benefits in an area which is very limited in such opportunities.

Mr. President, the Narrows project has my wholehearted support, and I shall urge the scheduling of early hearings on this worthwhile project.

The PRESIDING OFFICER. The bill will be received and appropriately referred.

The bill (S. 3547) to authorize the Secretary of the Interior to construct, operate, and maintain the Narrows unit, Missouri River Basin project, Colorado, and for other purposes, introduced by Mr. ALLOTT (for himself and Mr. DOMINICK), was received, read twice by its title, and referred to the Committee on Interior and Insular Affairs.

Senator ALLOTT. There are those in the area who have expressed deep concern for the early construction of works to control the Bijou Creek Basin. I share their concern. However, such flood control works as are now tentatively proposed and which have almost universal local support, would be constructed not by the Bureau of Reclamation but by the Army Corps of Engineers; and, would not be considered by the Interior Committees of both Houses but would be considered by the Public Works Committees. As such, the Bijou Creek flood control project is separate and distinct from the Narrows unit, now that the diversion channel has been eliminated from the consideration.

Mr. Chairman, the Narrows unit will provide supplemental irrigation water for 166,370 acres of fertile farmland in northeastern Colorado. But, more than this, by insuring a more stable adequate supply of water, it will help to stabilize the economy of the area. As the members of this committee know, investments in stabilizing the economies of the towns and small cities of our Nation yield not only economic benefits but many social benefits. A stable economic base is a natural antecedent to a better quality of life for the residents of a given area. In this sense the Narrows unit is an investment, and I believe it to be a very good investment in the future of not only northeastern Colorado and its people but the Nation as well.

By standards generally applied to such multipurpose reclamation projects, the Narrows unit enjoys a good benefit-cost ratio—1.89 to 1 for total benefits, and 1.8 to 1 for direct benefits. However, if one considers the benefits in human terms, its benefit-cost ratio is even more favorable. Benefits such as greater economic stability, greatly increased recreational opportunities, enhancement of fish and wildlife, and greater security from the hazards of devastating floods cannot be adequately measured in dollars and cents. While no one has yet devised a method for measuring such benefits they should not be overlooked in our consideration of such projects.

Mr. Chairman, I heartily recommend the Narrows unit of the Missouri Basin project to the committee for early favorable action, and I look forward to hearing the testimony of many of my good friends from Colorado this morning.

I would ask that, immediately following, a statement by Senator Dominick in support of the project be placed in the record.

Senator ANDERSON. With no objection, that will be done, also.

(The statement referred to follows:)

STATEMENT OF HON. PETER H. DOMINICK, A U.S. SENATOR FROM THE STATE OF COLORADO

Mr. Chairman: I am pleased that hearings are commencing on S. 3547 at last. As you know, the major feature of the multi-purpose project authorized by this bill, the Narrows Unit, is a dam and reservoir on the South Platte River in north central Colorado.

The need for this project was recognized long ago. Congress first authorized the Narrows Unit in 1944 as part of the Missouri River Basin flood control project. The project has been studied intensively during the twenty-six years since; but construction has not yet started, and the need has not diminished. I hope the delay is almost at an end.

By controlling the flow of the South Platte River, this project will at once alleviate two problems which have plagued the lower South Platte valley—periodic floods and water shortages. The project will furnish an estimated 140,700 acre feet of supplemental irrigation water annually to 166,370 acres of farmland. The benefits accruing from the irrigation, flood control, fish and wildlife development, and recreational aspects of this project add up to a substantial enhancement of the quality of life in the area affected. The importance to Colorado and the Nation at large of this, and similar projects which are designed to make the maximum use of water resources, is underlined at a time when increasing demands are being made on the Nation's limited water supply by rapidly expanding population.

In urging favorable action on this bill, I concur with the statement of the House Committee on Interior and Insular Affairs which reported favorably on an almost identical bill, that the Narrows Unit is a "well-planned, carefully documented proposal having a high degree of economic justification and financial feasibility."

Senator ALLOTT. Thank you, Mr. Chairman.

Senator ANDERSON. The next witness is the Honorable James R. Smith, Assistant Secretary of the Department of the Interior for Water and Power Development.

STATEMENT OF HON. JAMES R. SMITH, ASSISTANT SECRETARY OF THE DEPARTMENT OF THE INTERIOR FOR WATER AND POWER DEVELOPMENT; MORRIS DROSKIN, CHIEF, DIVISION OF PROJECT DEVELOPMENT, REGION 7, BUREAU OF RECLAMATION; AND D. V. McCARTHY, CHIEF, DIVISION OF PROJECT DEVELOPMENT, BUREAU OF RECLAMATION

Mr. SMITH. Mr. Chairman, and members of the Subcommittee on Water and Power Resources: As usual it is a privilege to appear before you gentlemen and testify today, particularly on the legislation to authorize the construction of the proposed Narrows unit of the Missouri River Basin project in Colorado. The Secretary's feasibility report on the unit was submitted to the Congress on May 27, 1968, and was printed as House Document No. 320, 90th Congress.

The views of the Department of the Interior on the bill S. 3547 were presented in our letter of June 5, 1970, to the chairman of the committee. Three amendments to the bill are recommended. These include conforming the bill to excess land provisions of Federal reclamation law; establishing the formula used to determine the interest rates for costs allocated to interest-bearing features; and deleting an incorrect reference from section 6 of the bill.

Originally, the Narrows unit was authorized for development as part of the Missouri River Basin project by the Flood Control Act of 1944. However, the provisions of Public Law 442, 88th Congress,

require reauthorization by the Congress of any units of the Missouri River Basin project on which construction was not underway as of August 14, 1964.

The proposed unit, a multiple-purpose water and related land resources development, would serve the functions of irrigation, flood control, recreation, and fish and wildlife enhancement, as well as potential future municipal and industrial water supplies.

The proposed development is described in the previously mentioned Secretary's feasibility report which has been supplemented and modified by a reevaluation statement that accompanied and was made a part of the Department's report on S. 3547.

The principal modifications resulting from the reevaluation are:

(1) Use of construction and annual operating costs based on January 1969, price levels.

(2) Economic reanalysis using a  $3\frac{1}{4}$  percent discount rate, the rate in effect at the close of the 90th Congress. The Secretary's feasibility report was transmitted to the Congress prior to December 24, 1968, when the Water Resources Council, with the approval of the President, promulgated a new formula for determining the interest rate to be used for economic evaluation of Federal water resources projects administratively approved and submitted to the Congress subsequent to that date.

(3) Revision of the flood control benefits computed by the Corps of Engineers.

(4) Addition of an enhancement fish hatchery and rearing ponds as recommended by the State of Colorado and by the Bureau of Sport Fisheries and Wildlife, and consequently a revision of the evaluated fish and wildlife costs and benefits.

(5) Revision of benefits, costs, and construction schedule for recreation development furnished by the National Park Service based on updated criteria for costs, population, and vehicular traffic.

The display map shows the general plan and location of the Narrows Unit in northeastern Colorado along the South Platte River. The major feature would be Narrows Dam and Reservoir shown on the map in red, to be constructed on the South Platte River near Fort Morgan. The Narrows Dam would be an earthfill structure about 146 feet high with a crest length of 22,100 feet. Three dikes having a combined length of about 12,700 feet also would be necessary. The Narrows Reservoir would have a total controlled capacity of 973,000 acre-feet at the top of the flood control pool.

Rights-of-way adequate for construction and operation and maintenance of the dam and reservoir, associated relocations, and for recreation and fish and wildlife developments would require the acquisition of approximately 36,250 acres of land. Relocation of the Union Pacific Railroad and State Highway 144 would be required. That is being pointed out.

The construction of the fish hatchery and rearing ponds and the acquisition and development of the existing Jackson Lake Reservoir, now privately owned, just north of the proposed reservoir, are proposed for outdoor recreation and fish and wildlife enhancement. A wildlife management area and four public-use recreation areas are also proposed for development.

The lands of the Lower South Platte Water Conservancy District that would receive supplemental irrigation water supplies are located along the South Platte River in Morgan, Logan, Washington, and Sedgwick Counties. Federal construction of irrigation distribution facilities is not required since the water developed by the Unit would be conveyed by existing systems.

During the severe drought of the 1930's, water shortages became widespread and ground-water development in the South Platte River Basin expanded rapidly. Reclamation's Colorado-Big Thompson Project was authorized and constructed to alleviate this critical situation by transmountain transportation of water from sources on the western slope of the Continental Divide. Colorado-Big Thompson Project importations have been used in the upper basin above the Narrows Unit area. The lower basin has benefited from the use of return flows mostly by means of ground-water withdrawals, leaving surface flows in the river essentially the same as before the Colorado-Big Thompson Project was constructed. Therefore, a need for an additional supplemental water supply for irrigation has continued to prevail in the lower basin.

Because of inadequate water supplies, the areas irrigated within the lower South Platte River Basin, including the Narrows Unit service area, have been limited, and the full irrigation potential has failed to materialize. The frequent lack of sufficient surface water supplies has caused many irrigators to construct wells for pumping ground water for supplemental irrigation. Water supply shortages have been further intensified by severe droughts, which cause serious depletions of the surface water supply and result in a greater demand on the wells.

In the Narrows Unit service area there are 33 irrigation systems. Four offstream reservoirs serve 10 to 12 of the ditch systems. However, none of these reservoirs is large enough to store adequate supplies for their associated ditch systems. The lack of storage facilities is a major factor contributing toward the annual shortages of water. Twenty-three of the ditches which serve 98.4 percent of the irrigable lands in the Lower South Platte Water Conservancy District experienced an average annual diversion shortage of 178,000 acre-feet over the 1947-61 period.

The water supply for the unit would average 140,700 acre-feet annually, of which 119,400 acre-feet would be obtained from regulation of surplus streamflow and from direct-flow water rights associated with irrigated lands to be acquired for the Narrows Dam and Reservoir and 21,300 acre-feet from divertible return flows. Irrigation storage capacity in Jackson Lake Reservoir would be transferred to the Narrows Reservoir.

Storage water would be released as necessary from the Narrows Reservoir to supplement irrigation within the service area, totaling 166,370 acres of irrigated land in the conservancy district. Supplemental releases would be conveyed downstream in the river channel to the diversion works of existing irrigation systems. The Narrows Unit has been formulated and will be operated in conformance with the provisions of the South Platte River compact between the States of Colorado and Nebraska.

The supplemental water supply for unit lands, analyzed on the basis of a 100-year period and an interest rate of  $3\frac{1}{4}$  percent, would yield \$1,410,000 direct benefits and \$222,000 indirect and public benefits, for total irrigation benefits of \$1,632,000 annually.

The South Platte River Basin is subjected to deluge type rainstorms that are erratic and have been and certainly are incredibly violent. During the period 1844 to 1965, nine such storms occurred, resulting in major floods. Numerous smaller, though severe, floods also have occurred. The impact on the area is substantial, causing major losses to property, transportation facilities, irrigation systems, crops, and livestock, with devastating effects on the economy. Operation of the Narrows Dam and Reservoir will afford downstream flood protection. The Corps of Engineers estimates flood control benefits will amount to \$1,600,000 annually.

Public outdoor recreation opportunities and fish and wildlife enhancement associated with large bodies of water are very limited in the area. The Narrows Unit would provide a much-needed water-oriented recreation resource not only to the residents of the immediate area, but to those of the Denver metropolitan area as well as tourists, since Interstate Highway 80-S passes within a few miles of the proposed dam and reservoir.

Both the construction of Narrows Dam and Reservoir and the rehabilitation of Jackson Lake Reservoir would provide recreation and fish and wildlife benefits. In addition, specific lands and facilities would be required for recreation and fish and wildlife purposes. Recommended minimum downstream flows for fish requirements would be met most of the time by reservoir seepage and normal project operations.

Four recreation public-use areas are recommended by the National Park Service. Two would be located adjacent to the proposed Narrows Reservoir shoreline, one would be located below the dam and reservoir, and the fourth would be at Jackson Lake Reservoir, as rehabilitated. Outdoor recreation activities will include picnicking, sight-seeing, boating, water skiing, swimming, hiking, and camping. The National Park Service estimates that use will increase from 930,000 visitor days initially to almost  $1\frac{1}{4}$  million visitor days about 25 years after initial development. The recreation benefits have been evaluated at \$1,410,000 annually.

The proposed fish and wildlife measures will jointly serve the purposes of mitigation and local and national enhancement of those resources. Recommendations of the Bureau of Sport Fisheries and Wildlife call for maintenance of minimum flows in and public access to 5.5 miles of the South Platte River immediately below Narrows Dam, rehabilitation and stabilized operation of the existing Jackson Lake Reservoir, development of a wildlife management area, a zoning plan for Narrows Reservoir, and the construction of a fish hatchery and rearing ponds. Total evaluated fish and wildlife benefits associated with the fishery, hunting, waterfowl use, and wildlife-oriented recreation are estimated to be \$552,000 annually.

Our May 1969 reevaluation statement proposes the addition of a fish hatchery and rearing ponds as an integral part of the recommended plan of development for the Unit and the reevaluation statement

provides justification therefor. This proposed addition is incorporated in the provisions of S. 3547, the bill now under consideration.

By letter of April 8, 1970, the Bureau of the Budget advised the chairman of the committee that since authorization of a fish hatchery for enhancement would be precedent setting it suggests that the Department develop guidelines for determining what, if any, circumstances would warrant Federal participation in enhancement hatcheries under the Federal Water Project Recreation Act.

We have carefully considered this matter and we believe that the same criteria and guidelines used to determine the need and justification for upland-game and big-game management areas, boat launching ramps, access areas, and all other features for the enhancement of public use and enjoyment of the fish and wildlife and outdoor recreation resources associated with Federal water resource developments are equally applicable to enhancement of fish hatcheries.

If there is a public need for such facilities to provide wide public use, if the benefits fully justify the Federal and non-Federal costs and non-Federal interests indicate an intent to assume the cost-sharing requirements of Public Law 89-72, and if the enhancement potential is the direct result of a Federal multiple-purpose water project, we believe that hatcheries should be included as enhancement elements of the project.

Authorization of the Oahe unit in South Dakota and the midstate division in Nebraska, both of which are parts of the Missouri River Basin project, involve State-managed areas for the enhancement of fishing and upland-game and big-game hunting. We believe these give ample precedent for this approach. The addition of a fish hatchery and rearing ponds to the recommended plan of development for the Narrows unit conforms fully with these criteria.

The adjusted annual equivalent benefits anticipated from development of the Narrows unit total \$5.2 million of which about \$5 million are direct benefits.

The estimated construction cost of the unit, based on January 1969 prices, is \$68 million. Annual operation, maintenance, and replacement costs are estimated to be \$313,000. Annual equivalent Federal costs for a 100-year period of analysis at 3¼ percent interest are computed to be \$2¼ million.

The ratio of total annual benefits to annual equivalent costs is about 1.9 to 1. The ratio of direct benefits to costs is 1.8 to 1.

We have also considered the project costs and benefits, using a 4⅞-percent interest rate, the new one which the Water Resources Council is now requiring on new projects. The ratio of benefits to costs would be 1.2 to 1 for total and for direct benefits. Financial feasibility can also be demonstrated as all reimbursable costs could be met from Narrows unit revenues.

The total construction costs have been allocated to the functions of the unit as follows: Irrigation, \$21.1 million; flood control, \$24.4 million; recreation, \$15.8 million; fish and wildlife enhancement, \$6.6 million; and road relocation, \$135,000.

The construction costs allocated to irrigation would be fully reimbursed by the water users without interest within 40 years without assistance from Missouri River Basin project power revenues. These

costs and the \$17,000 annual O.M. & R. allocated to irrigation would be repaid from net proceeds of annual ad valorem tax revenues estimated to be \$17,000 proposed annual service charges of \$10,000 to Jackson Lake Reservoir interests, and an annual return averaging \$518,000 from the sale of water. The Lower South Platte Water Conservancy District would be the contracting entity for payment of these costs.

The Federal Water Project Recreation Act provides that a non-Federal public body be responsible for repayment with interest of one-half of the separable costs allocated to recreation and fish and wildlife enhancement, including interest during construction, and all of the separable annual operation, maintenance, and replacement costs associated with these functions.

The State of Colorado has indicated in writing its intent to agree to administer the land and water areas of the unit for these functions and to bear the associated reimbursable costs allocated to the two functions, as described above. In accordance therewith the reimbursable costs allocated to recreation amount to \$1,450,000 for construction, \$47,000 for interest during construction, and \$172,000 for annual operation, maintenance, and replacement. The reimbursable costs allocated to fish and wildlife are \$940,000 for construction, \$65,000 for interest during construction, and \$93,000 for annual operation, maintenance, and replacement.

The remaining construction costs of \$5.7 million allocable to fish and wildlife enhancement, \$14.4 million to recreation, \$24.4 million to flood control, and \$135,000 of road relocation costs for highway improvement total about \$44.5 million, and together with the remaining operation, maintenance, and replacement costs of \$32,000 would be nonreimbursable as provided by law.

We find no special circumstances in this instance that would justify a departure from the acreage limitations of reclamation law for the Narrows Unit and therefore recommend the bill be amended to deleting section 5 thereof. If modifications of the acreage limitation is justified here, it would be justified elsewhere as well and should be accomplished through general legislation.

At the field hearings held by the House Subcommittee on Irrigation and Reclamation at Fort Morgan, Colo. on November 25, 1968, Governor Love recommended that municipal and industrial water be included as a function of the unit. This was further supported by statements by the mayors of the cities of Brush, Fort Morgan, and Sterling, indicating that they felt their cities would have a future need for municipal and industrial water supplies. Presently, there is no immediate need for municipal and industrial water from the unit, but including this as an authorized function as provided by the bill would add flexibility in operating the unit to meet the future water needs of this growing area.

The relationship between flooding problems on Bijou Creek and the Narrows Reservoir is presented in our feasibility report and the reevaluation statement. The Corps of Engineers has completed a preliminary appraisal of flood control aspects for Bijou Creek and the lower South Platte Valleys and has found a feasible solution for alleviating a significant portion of damages presently experienced by providing storage on Bijou Creek proper.

At the corps public hearings in December 1969, there was almost unanimous support for the proposal by the local people as well as by the State interests. The corps plan does not depend on, but instead complements, the Narrows unit. Therefore, we do not believe it necessary to consider further the alternative of diverting Bijou Creek into the proposed Narrows Reservoir as a feature of the Narrows unit.

The impact of construction and operation of the Narrows unit upon water quality and the human environment has been examined pursuant to the National Environmental Policy Act of 1969. Our studies show that the Narrows unit will enhance rather than deteriorate the water quality of the South Platte River. Under present conditions there is a progressive and substantial increase in the total dissolved solids content of the flows in the South Platte River from the foothills of the Rockies to the Colorado-Nebraska stateline near Julesburg. Operations of the dam and reservoir will reduce the seasonal and cyclical fluctuations in the water supply and permit better quality water to be applied to the irrigated lands. We, therefore, expect an improvement in the salinity of the return flows from irrigation. The Federal Water Quality Administration has advised that no downstream water quality effects are anticipated which would interfere with present or proposed beneficial uses of water from the South Platte River.

The Narrows unit would have a very favorable impact on both the social and economic environment of the region. Construction of Narrows Reservoir and the development of Jackson Lake Reservoir will create high quality water-oriented outdoor recreation and fish and wildlife resources for public use. The existing economy of the area would be improved by substantial benefits, directly in terms of increased net farm income and indirectly through marketing and processing of the increased farm production. The river valley would no longer be ravaged by floods to the extent that it has been in the past.

The adverse effects on the environment would be limited principally to inundating some of the existing streams and adjacent lands by the reservoir; loss of the natural stream habitat; and the dislocation of people, existing farming operations, and community facilities. The loss of stream habitat would be mitigated as part of the proposed fish and wildlife development. There would be no loss of unique natural areas or conditions.

Development of the Narrows unit is not only desirable; it is urgently needed. As a result of its construction, the economy of the area, the State, and the Nation would be strengthened. The local people have been advocating water resource development in the area since early settlement days. The Lower South Platte Water Conservancy District is ready to assume its financial obligations, as is the State of Colorado.

We believe the Narrows unit to be a highly desirable water and related land resources development. It is economically justified and all reimbursable costs would be fully returned by project beneficiaries.

It is a great pleasure for me to recommend the enactment and favorable consideration of S. 3547.

Thank you very much, Mr. Chairman. That concludes my statement.

Senator ANDERSON. Thank you, Mr. Secretary.

Senator Allott?

Senator ALLOTT. Mr. Secretary, we in Colorado are very happy that at long last we have this matter moving and the House of Representatives has acted favorably on this. There are two or three things I would like to highlight about your statement.

On page 5 you speak of the water supply for the unit as being an average of 140,700 acre-feet, of which 119,400 acre-feet would be obtained from regulation of surplus streamflow and from direct-flow water rights associated with irrigated land to be acquired for the Narrows Dam and Reservoir and 21,300 acre-feet from divertible return flow. In order that the proposition and the situation may be placed before the committee in a very simple form, the facts are that the water we are speaking of, the main portion of it, particularly the regulation of the surplus streamflow, 119,400 acre-feet, is water which would be lost to the State of Colorado for use if a reservoir project of this kind were not built.

In other words, that water is being lost for use at the present time; is that correct?

Mr. SMITH. Yes, sir.

Senator ALLOTT. So that, what we are actually doing here is capturing for utilization within the State of Colorado upon this great irrigated area that we have running down the Platte River there waters that would otherwise be just runoff; is that correct?

Mr. SMITH. Yes, sir.

Senator ALLOTT. Now, in the latter part of your statement you mentioned the 160-acre limitation and I do not know whether others will comment on that or not. Is your statement on the traditional 160-acre limitation based upon the fact (a) that this is already a developed irrigation area and (b) that the water supplied for irrigation here will be supplemental water rather than the water for application to newly developed lands?

Mr. SMITH. This area has been irrigated for 40 to 50 years and all of the waters from this project are supplemental waters; however, we do not recommend a waiver of the acreage limitation.

Senator ALLOTT. That is correct?

Mr. SMITH. Yes, sir.

Senator ALLOTT. Let me pose this question to you and you might want to refer to one of your people there to answer it.

The 160-acre limitation always poses a problem where you have the situation of supplemental water. I see some of my friends sitting out there who have considerable land. Suppose, for example, to make it very simple, that a man is farming a half section now with water rights and that the productivity would be greatly enhanced if he could obtain some supplemental water for application upon that half section. Would the 160-acre limitation apply in that situation?

Mr. McCARTHY. Under reclamation law, yes, it does apply and it has applied in any number of authorizations over the years.

Senator ALLOTT. We have applied the 160-acre limitation here in many projects over the years, but it has not always worked equitably and Congress has had to correct itself. I remember particularly when the great Senator from Idaho, Senator Dworshak, was on this com-

mittee. I do not recall the name of the project in Idaho where we developed a reclamation project there and found out that the 160-acre limitation would not permit the people on that, who were mostly, incidentally, GI's, who had been encouraged to come in there, to develop an economically viable unit so that we have had to modify it and I think you will recall that we did modify it in that particular case.

What I am really wondering here is, and the question I am posing is if there is a justification for the modification of this rigid 160-acre rule here because of the fact that we are not furnishing and the project will not furnish all the water for any land but will only furnish supplemental water to the rights which the owners of the irrigated land below the dam already possess.

Mr. McCARTHY. Yes. I think the point that we are making in our statement here is that we recognize that in some cases the excess land limitation law possibly should be modified, but we believe that it should be done on a reclamationwide basis and not on the basis of an individual project.

In fact, the Department of the Interior is giving consideration to proposals for amending the reclamation law. It is our feeling that it should be handled in that context rather than on an individual project basis because this project in these aspects is not much different than the central Arizona project, for that project the 160-acre limitation is a provision of law.

The same thing is true of projects in California such as the San Luis Unit. Much of the water there is supplemental water and the reclamation law applies.

I think that there is a great deal of merit in what you are saying, that there should be a new look at the general legislation covering the 160-acre limitation, particularly as it applies to supplemental water.

Senator ALLOTT. I yield to the chairman.

Senator ANDERSON. Didn't we have a project close to the Colorado line where we didn't use this limitation? Senator Millikin introduced the bills.

Mr. McCARTHY. The 160-acre limitation has been waived in some legislation and there have been modifications of it. Certain upper basin projects, for instance, were authorized with what is called a class I equivalency provision whereby an irrigator could have more than 160 acres as long as it didn't exceed the equivalent of 160 acres of class I land. There have been some projects, the Colorado-Big Thompson project, for instance, where the excess land limitation was waived entirely. That project serves lands primarily just upstream from the Narrows unit.

Senator ANDERSON. I am not talking about the Colorado-Big Thompson. Wasn't there an irrigation project in the southern part of Colorado where I thought the 160-acre limitation was waived. It was the San Luis project, perhaps.

Mr. McCARTHY. It may have been. I don't recall the name of it offhand, Senator.

Senator ALLOTT. Well, I raised this question and, as a matter of fact, I raised it in many other instances here and I hope that the department does recommend some criteria to the Congress for general

overall legislation. There have been too many changes in the agricultural economy of this country. There was a time and I have said this many times before and I can remember when I first went down into the southeastern part of the State to practice law that there were still a lot of farm units which were 40 acres. It was then in a transition to 80 acres which was considered to be a farm unit, 80 acres of irrigated land. Then as we came along and agricultural technology improved, it became obvious that 80 acres was not a family unit and it became a quarter section and now I suppose if you took an average through there you would find that most family units are in the neighborhood of 240 or maybe in excess of that and they still are not the corporation-type farms which some people seem to be so concerned about in the United States.

I just wanted to bring this out because it seems to me that if, for example—and I hope there is not a John Smith in the room—John Smith happens to own a half section below the dam upon which he now is applying water and farming and there is water available in the reservoir for sale, it seems like a sort of an exercise in futility to say, “All right, John, we will sell you supplemental water for application on the southwest quarter but we will not sell you supplemental water for application on your southeast quarter,” and this is the point I wanted to make. I think we have explored it pretty well but I did want to bring it up.

Mr. SMITH. Senator Allott, if I may, I think your penetrating remarks about the inequities that are sometimes inherent in these situations have pointed up again the need for the very thing which you suggest and which our Department is very much aware of and looking into in great depth, and that is changing the generic concept of the acreage limitation, I couldn't agree more that something must be done, sir

Senator ALLOTT. I thank you very much.

I would simply add this one expression of my own feelings, that rather than being geared to a flat acreage which has been long outmoded by the economics of farming, we should be looking more at whether or not it is an economically viable unit which, in turn, depends upon your classification of land, the type of land, susceptibility of irrigation, and all of these other factors which do make a piece of land an economical unit when it is a new piece of land being brought under irrigation for the first time.

More and more, we are getting into this type of thing where we are supplying supplemental water and also municipal and industrial water, M and I water. I think your suggestion with respect to the inclusion of this bill is very valuable.

I have one other thing. We do not have a copy of the House bill available to us, unfortunately here, although I do have the House report upon this bill available to me and on page 5 there is a comment about a provision that was put in the House bill with respect to the quality of the water, and to make that point I would like to ask you this: The House report says:

The bill was further amended to require that identifiable return flows of water from the unit be treated to eliminate pollution and improve water quality, the committee feeling that Federal activities should set an example of concern for environmental preservation. In adopting this amendment, the committee ac-

knowledges that the Narrows unit, insofar as irrigation is concerned, is a supplemental water project to augment inadequate water supplies to presently irrigated land, and that identification of return flows attributable exclusively to the unit might well be impracticable. The committee also notes that the introduction to the Narrows unit service area of high quality irrigation water, deriving largely from flood flows stored in Narrows reservoir, may well improve the return flows from the area in comparison to the salinity conditions existing prior to development of the project. Stated otherwise, the committee's amendment would be of limited impact, in absolute terms, on water quality as affected by a program of the character of the Narrows unit. By the same token, its economic and financial effect would not be significant. In other situations, however, the principles set forth in the committee amendment could and would likely be of appreciable significance to water quality and have far-reaching consequences on costs and related considerations of justification and feasibility.

Now, reading your testimony you have stated here that the project itself will actually improve the quality of the water in the river below the dam. There is no mistake about this. In your opinion, this is what you said in your statement.

Mr. SMITH. Yes.

Senator ALLOTT. Now, I will address this to whoever wishes to answer but, having spent a great deal of my life on the river, on a river very similar in many respects to the Platte where you are supplying supplemental water and particularly where you have the 160-acre limitation, how in the world could anyone possibly identify the river flows coming from the unit for water treatment? This balks my imagination.

Mr. SMITH. We feel that it would be, as you so succinctly stated, impossible to identify the return flow occurring from a project that provides only supplemental water.

Senator ALLOTT. I personally feel very strongly this way. I know of no way, and I am sure the chairman would agree with me on this, as would the Senator from Idaho, who is one of our great authorities on water on this committee.

Now, in the first place, then, the return flows could not be identified and, in the second place, the question is moot, because the quality of the water in the river below the dam would be improved by the project itself.

Mr. SMITH. Yes, sir.

Senator ALLOTT. I have one other question on this. There are no provisions made in the bill with respect to the authorization which would provide funds for any such treatment of waters as are envisioned by the language in the House report.

Mr. SMITH. No, sir.

Senator ALLOTT. My only difference with the House comments in this report is that it says, "might well be impracticable." I think it would not only be impracticable; I think it would be impossible.

Mr. Secretary, I am very happy that after these many years we have gotten this project moving and it has been reported in the House. I hope that this subcommittee can report this bill favorably and that we can act upon it in a very expeditious manner and, finally, get it moving.

That is all I have, Mr. Chairman.

Senator ANDERSON. Thank you, Senator Allott.

I just want to remind you that it was the San Luis Valley project in Colorado that I talked about a moment ago.

On page 26 of the committee print, called Acreage Limitation Policy, a study prepared by the Department of the Interior, it says:

Provides excess land provisions not applicable to lands or to ownership of lands receiving supplemental or regulated supply of water from San Luis Valley project, Colorado, provided that in lieu of acreage limitations no landowner shall receive a supply greater in quantity than that reasonably necessary to irrigate 480 acres of land.

Senator Millikin made a very eloquent speech at one time and pointed out that there is not the same growing seasons. For example, "I have three crops of alfalfa on my farm but in California there are five."

I strongly supported the acreage limitations all the way through, but I don't approve of them on supplemental water.

I wish you would check this.

Mr. SMITH. Yes, sir. We will, Senator.

Senator ANDERSON. Senator Allott?

Senator ALLOTT. Could I make just one statement? I am not opposed to limitations on reclamation projects, although perhaps my remarks may have been interpreted otherwise. It is just that I think that in this situation it is completely impractical and I think the criteria we put on limitations have been superseded as I said by the technology of farming, the increase of costs of farming and things like that, so that it ought to be placed more on a productivity basis than otherwise.

I have here, Mr. Chairman, a case which might be very pertinent to this problem. The case is *United States v. Warm Springs Irrigation District*, 38 F. Supp. 239. It is the only one discovered, in research, with respect to what "return flow" means and it does not provide a general definition. Referring to the dispute before the court, it is stated on page 241, "all problems in relation to the water which escapes from a reservoir or farmlands after use in irrigation are complicated by the difficulty of measurement and the use of the words 'return flow.' This phrase seems not to have been defined judicially or otherwise".

The court in this case, then, in the absence of a general definition of "return flow" was required to attempt to derive a meaning from an implied intent gathered from the purpose and other language of the irrigation water contract which was the subject of the lawsuit.

This language in this act would, it appears to me, cause even greater problems.

Senator ANDERSON. Senator Jordan?

Senator JORDAN. Thank you, Mr. Chairman.

Mr. Secretary, I want to talk with you a little about this 160 acre limitation with respect to this bill, especially, because I don't see why with supplemental water you couldn't adopt the same language, the same philosophy that we had in the Colorado-Big Thompson project which itself received only supplemental water and, as I understand it is completely exempt from the acreage limitation under the reclamation law, is that correct?

Mr. SMITH. The Colorado-Big Thompson was exempted from the acreage limitation of reclamation law by the act of June 16, 1938.

Senator JORDAN. I think under modern irrigative farming practices the 160 acre limitation is completely unrealistic. Only a small per-

centage of the acreage in this project, as I understand it, is held by owners who own more than 160 acres or 320 acres for a man and wife.

Having made that exception in the Colorado-Big Thompson project under identical conditions, why can you not do so here?

Mr. SMITH. Senator, I think we have made our position clear, and I think you know my personal feeling that the acreage limitation has become outmoded and something needs to be done. I think I would have to stand on the position that we should do it by general legislation rather than specific legislation.

Hopefully, the time won't be too long when we will be in a position to recommend to the Congress some modifications of the acreage limitation law.

Mr. McCARTHY. Senator, might I point out here, also, that the acreage limitation would not apply against the nonproject water which amounts to about 80 percent of the water supply for this district. A man could obtain water from the project for 160 acres and still have water from nonproject sources to irrigate a larger acreage. In effect, it is not as burdensome as it might seem in connection with this project.

Senator JORDAN. What would the nonproject sources be, underground water?

Mr. McCARTHY. Surface and underground water.

Senator JORDAN. What is the watertable generally throughout the project?

Mr. SMITH. Surface water plus underground water would supply about 75 to 80 percent of the total water supply used by the district.

Senator JORDAN. What is the pumping lift generally throughout the project?

Mr. SMITH. Mr. Droskin?

Mr. DROSKIN. It would vary considerably, sir.

Senator JORDAN. Is there some pumping taking place now?

Mr. DROSKIN. There is very significant pumping activity in the project area. Fairly close to the river the pumping lifts are very shallow. As you move away from the river, the pumping lifts become substantially greater.

Senator JORDAN. Your statement, then, Mr. Secretary, is that if supplemental water were made available from pumping this would not be covered, of course, under the acreage limitation that you would impose in this bill.

Mr. SMITH. That is right, sir.

Senator JORDAN. Very good.

In your opening statement you suggested three amendments of which this was one, that is, to strike section 5 having to do with the excess land provisions under Federal reclamation law. We have discussed that.

Then your second amendment was establishing the formula used to determine interest rate for costs allocated to interest-bearing features of the project.

Is there no place in the bill where that formula is delineated?

Mr. SMITH. The formula is not in the bill.

Senator JORDAN. It is not in the bill?

Mr. SMITH. No, sir. Therefore, we are merely recommending that the bill be amended to include the standard formula contained in the

Water Supply Act of 1958 for the determination of the interest rate applicable to those costs which are interest bearing to be consistent with other project authorizations.

Senator JORDAN. I think Secretary Hickel proposes an amendment. He would strike section 5 having to do with excess lands. He would deal with this interest matter as follows:

Section 5. The interest rate used for purposes of computing interest during construction and interest on the unpaid balance of the capital costs allocated to interest-bearing features of the project shall be determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which construction is initiated, on the basis of the computed average interest payable by the Treasury upon its outstanding marketable public obligations, which are neither due nor callable for redemption for 15 years from date of issue.

This is the standard formula that you are applying here, is it not?

Mr. SMITH. Yes, sir; which, as I recall as enunciated, by Treasury last July for fiscal year 1970 is 3.342 percent.

Senator JORDAN. Then you suggest a third amendment deleting the final words on page 3. You would put a period after the word "unit". "There are also authorized to be appropriated such additional sums as may be required for the operation and maintenance of the unit."

You would put a period there and delete these words "and for future costs, if any, incurred in section 2 of this act."

Why do you delete that language that refers back to section 2, the conservation and development of fish and wildlife resources section?

Mr. SMITH. We are of the opinion that this reference to "future costs" was incorporated in the bill during a previous Congress when section 2 of that measure contemplated the possible channelization of Bijou Creek into the Narrows Reservoir. Since this provision is no longer in the bill under consideration and section 2 now provides for fish and wildlife and recreation development in accordance with the Federal Water Project Recreation Act, we think the reference is inappropriate and confusing.

Senator JORDAN. You are just deleting the prospective costs, the future costs, if any?

Mr. SMITH. Yes, sir.

Senator JORDAN. I think you make yourself clear as to your recommended changes in the bill.

It seems to me that this is one of the best projects that has come by since I have been on this committee, and that has been quite a few years. I wonder why it has been so long in being put together. I do think it is a good project.

As I figure it the cost per acre of this supplemental water is about \$125 or \$126.

Is that approximately right?

I am speaking of the capital costs.

Mr. SMITH. \$127, you are correct, sir.

Senator JORDAN. And the maintenance cost would be how much?

Mr. SMITH. \$313,000 annually for the total project of which only \$17,000 is allocated to irrigation or about 10 cents per acre.

Senator JORDAN. I think it is a good project. I want to see it move. It has my support.

Thank you.

Senator ALLOTT. Mr. Chairman?

Senator ANDERSON. Senator Allott.

Senator ALLOTT. Just for the sake of the committee, I have a slight explanatory note about the situation which you suggest about the future. Here is the town of Fort Morgan here. This is the town of Brush. Down the river and north a little bit is Sterling. Bijou Creek has been one of our problems. Originally it was thought that Bijou Creek might be cut through here so that it would come into the reservoir behind the dam. One of the reasons this matter has been delayed so long, particularly in the last 2 years, is the fact that we have had extensive studies made concerning the feasibility of doing just that. It would be desirable, but it would be so expensive that it takes the the whole project out of the ball park, as far as its feasibility is concerned.

Now, the Corps of Engineers has decided on a new approach to the Bijou Creek which drains an immense territory which is almost beyond imagination unless you have been up there and flown over all that area. Actually, the Bijou Creek drains back up almost clear to Colorado Springs clear back up in that area. It is a fantastic drainage area. And they have decided, and I think wisely, that the way to approach the Bijou question was by a series of smaller dams on the upper reaches of Bijou Creek. The determination of this Bijou matter was one of the things that particularly in the last three years has delayed more immediate consideration of this, and I think the solution that has now been worked out is a very happy one, and I think it will be a very successful one.

Senator ANDERSON. Mr. Secretary, I do hope you will be back on these other provisions. I know many years ago we had this very same question on the San Luis Project and it was clearly pointed out that you don't farm the same way in Colorado as you do in California, for example. They produced seeds at very low cost in California. I think you ought to take a very good look because this is not a repeal of 160 acre limitation but it is waiving it in certain areas where the growing season is short. I wish you would look at that again because I think it clearly points out that this project is all right. I think it is justified to waive the 160 acre limitation.

Are there further questions?

If not, thank you very much.

Senator ALLOTT. Thank you very much.

Sanator ANDERSON. Mr. Sparks?

Have a seat, Mr. Sparks.

Senator ALLOTT. Mr. Chairman, I might just say that we are happy to have Mr. Sparks here. He is director and secretary of the Colorado Water Conservation Board, which by statute is charged with the conservation and wise use of water in the State of Colorado. His eminence and excellence and knowledge in the whole field of water, particularly as it applies to the waters which arise from the State of Colorado, are well recognized.

We are happy to have you here.

Mr. SPARKS. Thank you, Senator.

STATEMENT OF FELIX L. SPARKS, DIRECTOR, COLORADO WATER  
CONSERVATION BOARD

Mr. Chairman, Senator Allott, I am Felix L. Sparks, director and secretary of the Colorado Water Conservation Board. I am privileged to appear here today as the official representative of that Board and also as Governor Love's personal representative. The Governor had hoped to be here in person today but other commitments made it impossible for him to do so.

The Colorado Water Conservation Board is the official agency of the State of Colorado charged with the responsibility for protecting, developing and conserving the water resources of the State of Colorado. The Board also has the responsibility for developing, in cooperation with Federal agencies, such flood control structures and measures as may be required for the prevention of floods.

The Narrows project was first authorized by the Congress in 1946 as a unit of the Missouri River Basin project. The project was authorized primarily for the prevention of floods and to furnish supplemental irrigation water in the South Platte Valley in Colorado. Because of the inability of the people of the State of Colorado to solve some of the local problems involved, the project has not yet been constructed.

It is now the policy of Congress that the irrigation features of the projects authorized by the Flood Control Act of 1946 be reexamined and reauthorized under present criteria. We believe that this is a fair provision. The most recent updating of the Narrows project feasibility report shows a direct benefit/cost ratio of about 1.81 and a total benefit/cost ratio of 1.89. It appears, therefore, that the Narrows unit fully meets congressional standards for both economic and engineering feasibility.

Colorado finds itself in a position today that almost 50 percent of its total surface water supplies have been allocated to other States through interstate compacts and Federal court decisions, or in the case of the Republic of Mexico, through international treaty. Our needs for additional water supplies constantly increase, as they do everywhere in this country. Growing demands for water uses have brought us into conflict with neighboring States. In recent years the States of Kansas, New Mexico and Texas have instituted legal action against Colorado in the U.S. Supreme Court concerning the use of water which originates in Colorado. These and other circumstances have caused a critical search in our State leading to the conservation of flood flows and the reuse of water supplies without infringement upon the rights of other States. The proposed Narrows project is one which meets the criteria of our search.

Longtime records on the South Platte River indicate that the annual average discharge of the river at the Colorado-Nebraska State line is approximately 340,000 acre-feet. About 100,000 acre-feet of this amount is required to pass the State line annually in order to comply with the terms of the South Platte River Compact. This means that on the average there is about 240,000 acre-feet of water available for use in Colorado which is now being wasted. In one 10-week period last year there was a net volume of about 400,000 acre-feet which could have been stored in the proposed Narrows Reservoir and subsequently

put to beneficial use. As it was, the unchecked floodwaters caused over \$400,000 in damages to irrigation works alone in the area below the proposed Narrows Dam.

On July 24, 1946, the Congress approved the comprehensive plan for the Missouri River Basin project, which included the Narrows unit in Colorado. In 1947 funds in the amount of \$300,000 were appropriated for initiation of construction of the Narrows unit. Almost immediately local opposition to the project began to surface. Right-of-way requirements were disturbing to local officials, one of whom resided in the proposed reservoir area. Other arguments pertaining to the service area and dam safety were also advanced. Opposition to the construction of the Narrows Dam was voiced by the commissioners of Morgan County and by the city officials and chamber of commerce of the county's principal city, Fort Morgan.

With the initial appropriation, the Bureau of Reclamation began extensive subsurface investigations at the Narrows site. Partially as a result of the criticism of the geologic conditions, a board of consultants was constituted to appraise the suitability of the damsite. This board concluded that a safe dam could be constructed at the proposed site.

However, opposition to the project continued. In 1951, the Colorado Water Conservation Board, the official water policy agency for the State of Colorado, authorized its director, Judge Clifford H. Stone, to hold a series of public hearings concerning the Narrows unit. The hearings were held to permit local and interested parties to consider the proposed plan of development and to express their views concerning the project. The board also retained the services of Royce J. Tipton & Associates, an engineering firm of international standing, to conduct an independent investigation pertaining to the most suitable reservoir site. The Tipton firm subsequently recommended to the board that the reservoir be constructed at the Narrows site.

Public hearings on the project were held at Fort Morgan, Greeley and Sterling. The final hearing was to be held in Denver to consider the State's formal comments on the project. However, this meeting was never held due to the untimely death of Judge Stone. Consequently until recent years the Bureau of Reclamation was never advised of the official views of the State of Colorado concerning the project and the Bureau suspended its construction activities.

In 1958 a group of residents from the South Platte River Valley, representing areas extending generally from just below Denver to the State line, appeared before the Colorado Water Conservation Board and requested the board to reinstitute studies leading toward the construction of channel storage on the South Platte River. The board agreed to this request. In the years 1959-63 it furnished \$125,000 to the Bureau of Reclamation for further studies on the South Platte River. Other expenditures in the approximate sum of \$75,000 were made from State funds for the employment of consultants and for the time and expenses of the board's regular staff. Substantial sums of money were also made available by the Congress for the preparation of a new feasibility report on the project.

By the late summer of 1964 all facets of the project had been explored to the point where it was again submitted to the Colorado

Water Conservation Board for policy decision. At a meeting held in Fort Morgan on September 12, 1964, the board reached and approved the following conclusions:

1. That further site selection investigations would be fruitless.
2. That the construction of the Narrows project would provide major economic benefits to the people of Colorado for generations to come.
3. That if major reservoir storage was to be constructed on the Lower South Platte River in the foreseeable future, it would have to be constructed under reclamation law at the Narrows site.

In a reversal of earlier positions, the Board of County Commissioners of Morgan County, the Fort Morgan City Council, and Fort Morgan Chamber of Commerce have all expressed their support for the project as now planned. While some local opposition may still exist, it is limited to a small fraction of the total population of the valley area.

The Narrows project is truly a multipurpose project. It will perform major functions in the fields of water conservation, flood control, recreation, and fish and wildlife enhancement. The South Platte Valley is the leading agricultural area of the State of Colorado. The cattle-feeding operations carried on in the valley are surpassed by few areas of the United States, if any. The catalyst for the sound agricultural economy which now exists in the valley was the construction of the Colorado-Big Thompson project by the Bureau of Reclamation. The history of this project has a direct application to the project being considered here today.

Originally conceived almost entirely to furnish water for irrigation purposes, the Colorado-Big Thompson project now provides a significant amount of water to a rapidly growing industrial and municipal complex stretching from Boulder to Fort Collins. The competition between municipal-industrial uses and agricultural uses will continue to grow at an increasingly accelerated rate. Thousands of acres of farmland have now been incorporated into our municipal and industrial complexes. This situation will apparently continue for the foreseeable future. An attractive feature of the Narrows project is that it will assist in preserving a healthy agricultural economy in an area now outside the metropolitan perimeter through the reuse of water which is first diverted for municipal and industrial purposes.

The proposed project area is included within the boundaries of the Colorado-Big Thompson project. However, because of ever-increasing upstream demands and distances involved, the lower South Platte Valley receives only limited benefits from that project. The residents of the lower area must continue to pay, however, the same ad valorem tax for project repayment as though they were direct beneficiaries.

The authorizing legislation for the Colorado-Big Thompson project provided for an exemption from the 160-acre limitation. Since the lands under the Narrows project would also be within the boundaries of the Colorado-Big Thompson project, it seems appropriate and consistent that the same provision apply to both projects. Such a provision is contained in the legislation now being considered by the committee. However, if this section provides an obstacle to the enactment of the legislation it can be omitted without altering the project water supply or changing the benefit/cost ratio.

Over 50 percent of the space in the proposed Narrows Reservoir is allocated to flood control. I cannot adequately express the urgent need for this flood control protection. I have previously mentioned that there were serious flood damages along the South Platte River and its tributaries last year, some of which could have been prevented had the Narrows Dam been operational. Actual damages in the South Platte Basin last year exceeded \$20 million.

The details of the tragic floods which occurred in Colorado during the summer of 1965 are now history. In the terms of the loss of human life and the destruction of property, the magnitude of these floods was beyond anything previously experienced during the known history of our State. Within a period of 3 days, floods which originated in eastern Colorado caused damages which greatly exceed the cost of all flood control structures heretofore constructed within our State or which are planned for the foreseeable future. Since 1965, flood control planning in Colorado has proceeded at a feverish pace with the great assistance of the Corps of Engineers and other Federal agencies. The Narrows Dam is an integral part of the control structures necessary to prevent future flood destruction. The Narrows unit, as originally authorized in 1946, provided for the channelization of Bijou Creek into the Narrows Reservoir along an ancient channel of the creek. The present channel of the creek actually enters the South Platte River below the proposed reservoir site. However, the original plans did not contemplate a flood discharge of such magnitude as occurred in 1965.

Following the 1965 floods, the Corps of Engineers was requested to give the Bijou Basin a high and urgent priority for flood control planning. The Bijou portion of the 1965 floods alone accounted for the loss of two human lives and damage to property in excess of \$45 million. The Corps of Engineers has now completed its feasibility report on the control of floods originating in the Bijou Creek Basin and is recommending the construction of upstream structures.

The plan recommended by the Corps would provide a high degree of flood control protection for the upstream as well as the downstream areas. If the recommended structures had been in place in 1965, damages from the Bijou flood would have been negligible. The proposed plan would give almost complete protection to the communities of Byers, Deer Trail and Agate and would protect the major highways in the Bijou Creek Basin. The plan is far more desirable than the original proposal to channel Bijou Creek into the Narrows Reservoir, since the channel proposal would provide no protection for the upstream areas. The original proposal to channel Bijou Creek into the Narrows Reservoir has therefore been discarded. This fact constitutes the only major difference between the authorizing legislation of 1946 and the legislation now being considered by the committee.

Since the reservoir would be situated in the heart of our population center, it can be expected to attract the greatest recreational usage of any body of water in eastern Colorado. The responsible Federal agencies have projected that with completion of the project facilities the annual visitor day use will slightly exceed 1 million. Based upon our experience in recent years, this figure is most conservative. In some cases on recently completed water projects in the Rocky Mountain

area, the visitor use of the project facilities during short holiday periods is exceeding the estimated use for the entire year.

The proposed reservoir will provide a fishery of major importance. In order to adequately stock this fishery, it will be necessary to construct a hatchery and rearing unit immediately downstream from the proposed dam. The earlier report on the project did not include this hatchery and we subsequently requested that it be included as a project feature.

A reevaluation of the project to include the fish hatchery has now been completed and this increment to the project shows a high benefit/cost ratio of 2.76. It is estimated that this hatchery and rearing unit will cost about \$869,000, of which half would be paid by the State of Colorado. The addition of this fish hatchery and rearing unit will provide a most necessary and desirable addition to the project.

In addition to providing for at least half of the cost of the fish hatchery, the State of Colorado has indicated its intent to participate in all cost-sharing features of the project which are attributable solely to recreation and fish and wildlife enhancement, and to thereafter bear all cost of operation and maintenance. The project area for these purposes would be managed by our Division of Game, Fish and Parks.

As evidence of their continued faith in the project, the people of the lower South Platte Valley have organized a water conservancy district under the laws of the State of Colorado to act as the sponsoring and contractual agency for the Narrows project. All property owners in the district, whether direct beneficiaries or not, must pay ad valorem taxes to assist in carrying out the purposes of the district and for project repayment. This district, the Lower South Platte Water Conservancy District, is well represented here today. Governor Love, the State legislature, and the Colorado Water Conservation Board join with that district in urging that this subcommittee and the whole committee recommend to the U.S. Senate that S. 3547 to authorize the construction of the Narrows project in Colorado be favorably considered during this session of the Congress.

May I conclude by expressing the deep appreciation of the people of the State of Colorado for the time and consideration which this committee is giving us here today in these troubled times.

Senator ANDERSON. Thank you, Mr. Sparks.

Senator Allott?

Senator ALLOTT. I don't have any questions, Mr. Chairman.

I think probably the matters which need to be emphasized have already been discussed. I think this is a very fine, explicit and succinct statement of the situation.

Senator ANDERSON. Thank you very much, Mr. Sparks.

Mr. SPARKS. Thank you.

Senator ANDERSON. Mr. John Hamlin.

Will you identify the other gentleman?

STATEMENT OF JOHN G. HAMLIN, MAYOR, CITY OF FORT MORGAN,  
 COLO.; AND REUBEN PEIF, MEMBER, LOWER SOUTH PLATTE  
 WATER CONSERVANCY DISTRICT

Mr. HAMLIN. This is Reuben Peif, a member of the council, the president of the Fort Morgan City Council.

Honorable Chairman, and Senator Allott, I am John G. Hamlin and I am mayor of the city of Fort Morgan. I appear before the committee today in my capacity as mayor and councilman, and in behalf of all the elected councilmen of the city of Fort Morgan to evidence their favor of the earliest possible construction of the Narrows Unit.

The council of the city of Fort Morgan, Colo., does indeed unanimously favor construction of the Narrows, having always been in favor of constructing "on-channel" storage in the South Platte in this part of the State, at whatever site or place the Bureau of Reclamation deemed most desirable and most feasible. And the council has, in the past, given and expects in the future to give its official support, cooperation and assistance to the Lower South Platte Water Conservancy District and to all those concerned with the construction of the Narrows Dam and Reservoir, since the Narrows is the site finally selected by the Bureau of Reclamation for the construction.

Senator ANDERSON. Mr. Hamlin, this is a long paper. May I ask that you summarize it?

Mr. HAMLIN. Certainly.

Senator ALLOTT. I ask, Mr. Chairman, that we include the full statement. We do have a long list of witnesses here and the committee will have to adjourn at noon.

John, the most important thing, of course, is that this does have the full support of the council. If you could summarize, I think it would enable us to complete this record by noon, which is very important.

Mr. HAMLIN. Yes. It does have the unanimous support of the city council and an overwhelming majority of the residents of the city of Fort Morgan, and we are part of the South Platte Water Conservancy District.

In summarizing the points that are in my statement, in summary I would say first the economic stimulus to the community and then the continuing economic stability which is to be gained from the development of this unit. We feel that it has real potential growth possibilities for our community by adding to the supply of water for industrial and business uses in addition to agricultural.

Thirdly, we have pointed to the benefits of the project in aiding in the control of pollution and misuse of water in the river at Fort Morgan.

Finally, and unquestionably as important as all the rest, the purpose the project will have in keeping us safe from a flood. There is probably one other consideration probably more subtle, but definitely

I feel most important, which is the part that Fort Morgan could play in the rural-urban imbalance as it is now and that the Federal Government and State government have taken as a project. Certainly with the development of this project Fort Morgan can play an important part in assisting both the State and Federal Government to create a place that would be nice to live in, to work in, and to play in.

That would conclude my statement.

Senator ANDERSON. Thank you, Mr. Hamlin.

Mr. HAMLIN. Thank you.

(The complete statement follows:)

STATEMENT OF HON. JOHN G. HAMLIN, MAYOR OF THE CITY OF FORT MORGAN, COLO.

Hon. Chairman and members of this distinguished Committee of the United States Senate: I am John G. Hamlin and am Mayor of the City of Fort Morgan. I appear before the Committee today in my capacity as Mayor and Councilman, and in behalf of all the elected Councilmen of the City of Fort Morgan to evidence their favor of the earliest possible construction of the Narrows Unit.

The Council of the City of Fort Morgan, Colorado, does indeed unanimously favor construction of the Narrows, having always been in favor of constructing "on-channel" storage in the South Platte in this part of the state, at whatever site or place the Bureau of Reclamation deemed most desirable and most feasible. And the Council has, in the past, given and expects in the future to give its official support, cooperation and assistance to the Lower South Platte Water Conservancy District and to all those concerned with the construction of the Narrows Dam and Reservoir, since the Narrows is the site finally selected by the Bureau of Reclamation for the construction.

Our Council consists of men who have lived and worked in this area for a number of years; certainly long enough to know that this part of Colorado is "semi-desert" and that it becomes a "garden spot" of agriculture only when supplemental water is applied to the land. These Councilmen, knowing that the Narrows Reservoir, without question, means more water for irrigation development, can see this additional water as a tremendous asset upon which to build the future of our City and our community.

Very simply, then, one of the primary reasons that the Narrows is favored by the City Council is that of simple economics. They have considered the economic *impact* it would immediately have upon the community and of this they approve wholeheartedly. Then they can see the economic *stability* it will *assure* year after year after it is constructed and in use and of this they approve wholeheartedly. As can be readily seen and understood, the economic "health" of the City of Fort Morgan depends upon the general condition and economic "health" of the adjacent agricultural community. These elected officials of the city know, without any strenuous exercise of their mental faculties, that the Narrows "spells good" for our community's supply of dependable irrigation water; and that this "spells good" for our farming community; and that this in turn, "spells good" for the economic health and well being of the City of Fort Morgan which they represent.

In addition \* \* \* in this day and time when we have been made so aware of the pollution of our rivers and streams, our Councilmen can see and appreciate the fact that the Narrows, with its stabilizing effect on river flows, will be of particular benefit to our city and community in reducing or eliminating pollution hazards in the channel of the river as it flows by the City of Fort Morgan, and that this fact is of real importance to the health, well being and general satisfaction of the people of our city.

I think that I can properly say that these Councilmen can and do look forward to our city's being the city most closely adjacent to what holds the potential for being the largest water recreation area in the State of Colorado. And we can only see this as adding tremendously to the factors which we believe right now makes our community such a good, sound place in which to live and work. And I hasten to add that I believe that we are ready, willing and able \* \* \* really more than that \* \* \* we are *eager* to meet the challenge involved in the development of this potential.

Furthermore, we in city government know that certainly not the least important uses of water is that of its use for domestic purposes, including, naturally, such essentials of life as drinking and washing. I will tell you, if someone hasn't already, that the present supply of municipal water is from the underground, and while the supply seems plentiful enough, the quality unquestionably leaves something to be desired. In fact, the belief is widely held, and perhaps rightly so, that the time is coming when underground water, as a source of water for our municipality will have to be abandoned as unfit for human use. The City of Fort Morgan has reserved from storage available in the Narrows, five thousand acre feet of water annually for its municipal uses. Further, the Council is certain that the stored water in the Narrows holds a real potential for use by a broad segment of the manufacturing and industrial community as well.

I am certain you now know that it has been only a little more than four years since the South Platte River at Fort Morgan was flooding and destroying in our city. I was here and all of our Councilmen were here and you may be assured that our Council believes that the flood control purpose in this project is at least of equal importance with its purpose for irrigation.

The South Platte River runs either through or adjacent to Fort Morgan and in doing so it comes very close to some vital parts of the city. Estimating conservatively, there are some \$1,750,000 of public facilities presently in existence or under construction which are vulnerable to flooding by the river. These public facilities consist of a public park and swimming pools of the city, its electric substation and switch gear; an office and plant for the Parks Department; an electric substation of the Morgan County Rural Electric Association and an electric substation of the United States Bureau of Reclamation. There is also our \$350,000 sewage treatment plant together with a necessary and presently planned expansion unit to this treatment plant to cost another \$400,000 which will be completed next year. On top of this our city has deemed it necessary and desirable to budget and spend within the next few years, \$50,000 more for the purpose of reclaiming swamps and stagnant areas and waste land for public park grounds in this area subject to flooding.

I might add to this that prior to the flood of 1965, some \$9,000 had been spent in that particular year alone, in river channel control; and since the flood another \$8,000 has been spent for river control and channel work in the South Platte River at Fort Morgan. In addition to these sums, at least \$76,500 of money we feel could have been used for much better purposes was required for clearing, cleaning and repairing after the flood of 1965; and our people were denied the use of their park for a year.

We, at the city, can even anticipate that once the river area is secure from dangerous flooding, the river itself can be incorporated and added to our park, and that this can do much to enhance the beauty and effectiveness of our public parks and gardens.

Certainly, we believe, that anyone who has been through a flood realizes what terrible disasters they can be and that money spent to prevent such disasters, if they can be prevented, is money well spent, or well invested \* \* \* and certainly well spent, or invested, if the stopping of a flood might result in the saving of human life.

To this point in this presentation, attempt has been made to cover and explain those factors which we consider here, locally, to be the reasons and the justification for construction of the Narrows Unit. They are, in summary: First, the economic stimulus to the community and then the continuing economic stability which is to be gained from the development of this Unit as an irrigation resource and as a recreation resource. Further, we have speculated that it holds real potential growth possibilities for our community by adding to the supply of water for industrial and business uses in addition to agriculture. Thirdly, we have pointed to the benefits of the project in aiding in the control of pollution and misuse of waters in the river at Fort Morgan; and finally, and unquestionably as important as all the rest, the purpose the project will have in keeping us safe from a flood.

But perhaps there is one more consideration. One that is definitely more subtle, but definitely no less important than some of the others. It is simply the sociological result or the sociological impact that the completion and use of this dam and reservoir might have; and result simply from the fact that this project will bring people to our community \* \* \* people from other parts of our state, from other parts of our region, and our nation. We believe that this is a fair assumption and warranted conclusion because we can be sure that the uses of this reservoir

for irrigation, for recreation and for flood control will make our community a more prosperous and economically healthy one. It will be a more viable community, and a safer community; with increased natural resources and increased reason to believe that it is and will be an area which will attract people. We are truly impressed with the importance of this fact and feel that it cannot be minimized, because this is a time when our federal and state governments have adopted a policy to encourage and to aid, wherever they can, in realizing solutions to that rural-urban imbalance in population which has become popularly known as the "Rural-Urban Crisis". We all know that the answer to this so-called crisis is simple. All we have to do is get some of the people out of the big cities and into these rural areas. But the methods for accomplishing the actual movement of the people are a little more obscure. It has occurred to us though, that perhaps right here is a "built-in" way to advance this social objective. We who live here in rural Fort Morgan are proud of our city and know that it is a very good place in which to live and to raise families, and we sincerely believe that with the coming of the Narrows Project, it will be an even better place to live for even more and more people. And isn't this the very sort of thing that is going to solve this Rural-Urban crisis in our country. Certainly, it seems that the crisis won't be solved until our rural areas do in fact become those better places in which more and more people can work and live. We are convinced that the Narrows Unit will do this very thing for our city and our community.

In conclusion, permit me to assure you that the vote of the government of the City of Fort Morgan, Colorado, is enthusiastically "behind" this project; that it will cooperate wherever it can do so; and that it looks forward eagerly to the day when this project is begun and is truly a reality.

Thank you for your time and interest. We appreciate your consideration. And if we can assist your Committee or the Senate in any way, we remain at your service.

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#### RESOLUTION

Whereas, the Narrows Unit will provide for an increased supply of irrigation water for the project area, thereby enhancing and stabilizing production on 166,370 acres of choice farm land and eliminating the effects of perennial shortages that now adversely affect the economy, and

Whereas, the plan will also provide water for future municipal and industrial use, for fish and wildlife developments, and for much needed recreational facilities, and

Whereas, one of the greatest needs in this area of Colorado is flood control, and

Whereas, the plan of the Narrows Unit will provide a stabilizing effect on agriculture, our chief industry, and the whole economy by storing flood waters, which during the past years not only ran away forever but wreaked destruction while doing so, now

Therefore be it *resolved*, That the City Council of the City of Fort Morgan, Colorado, hereby make known its support of Narrows Unit, and respectfully request that the Congress of the United States enact legislation which will permit the authorization and early construction of the Narrows Unit on the South Platte river.

Be it further *resolved*, That a copy of this resolution be forwarded to each member of the Colorado Congressional delegation in Washington, D.C. and to the Lower South Platte Water Conservancy District.

Passed and approved by the City Council, Fort Morgan, Colorado, this 6th day of February, 1968.

JOHN G. HAMLIN, *Mayor*.  
J. E. LONGNECKER,  
*City Clerk*.

Senator ALLOTT. Could I ask you just one question, Mr. Mayor?  
Mr. HAMLIN. Yes.

Senator ALLOTT. We are all aware and it is obvious that flood control is a very serious part of this project. There is no question in your mind, either, is there, that the completion of the project in the form

of the bill that we have before us would help to stabilize the agricultural economy of the entire valley and in turn by doing so help stabilize the economy of Fort Morgan and Brush and Sterling, which are, in turn, greatly dependent upon the agricultural economy?

Mr. HAMLIN. Yes, I agree.

Senator ALLOTT. There is no question about this in your mind?

Mr. HAMLIN. No. We are interested primarily in the agricultural economy of the area because that, in turn, helps Fort Morgan, Brush, and Sterling, so that the supplemental water will be a great item for our area.

Senator ALLOTT. Thank you very much.

Senator ANDERSON. Thank you.

Mr. HAMLIN. Thank you.

Senator ANDERSON. Mr. Hamil, will you please identify the other people here?

Senator ALLOTT. Mr. Chairman, if I may, I have known Mr. Hamil for quite a few years. He is engaged in farming, ranching, at Ackerman, Colo., which is just a little west of Sterling.

He is accompanied by Millard Huey, Eric P. Wendt, D. Monte Pascoe, Denzel R. Pyle, Donald Spillman, and William Venohr.

Is that correct, Don?

Mr. HAMIL. Yes.

William Venohr, Senator, is representing the city of Sterling. He is city councilman.

Senator ALLOTT. He is representing Sterling?

Mr. Hamil. Yes.

Senator ALLOTT. All right, fine.

Senator ANDERSON. You may proceed.

**STATEMENT OF DONALD W. HAMIL, STERLING, COLO., PRESIDENT, ACCOMPANIED BY MILLARD HUEY, VICE PRESIDENT; ERIC P. WENDT, SECRETARY-TREASURER; D. MONTE PASCOE, GENERAL COUNSEL; DENZEL R. PYLE, PRESIDENT, NORTH STERLING IRRIGATION DISTRICT AND DIRECTOR; DONALD SPILLMAN, DIRECTOR, LOWER SOUTH PLATTE WATER CONSERVANCY DISTRICT; AND WILLIAM VENOHR, MAYOR PRO TEM, CITY OF STERLING, COLO.**

Mr. HAMIL. I think that you have already had all the information that is necessary through the Bureau and through Mr. Sparks presentation, and I would like to just submit my written statement to you as you and Senator Allott might have questions for me at a later time.

I am in a little different capacity than these other people. We have other people in our group here that could maybe answer some questions. Otherwise, I think it would be repetitious to present anything that I would have to say. I would say our major statement of what we might have to say will be presented by our secretary-manager, Eric Wendt, and then we will be subject to questions if you gentlemen would so like.

(Mr. Hamil's prepared statement follows:)

STATEMENT OF DONALD W. HAMIL, STERLING, COLO., PRESIDENT OF THE LOWER SOUTH PLATTE WATER CONSERVANCY DISTRICT

Mr. Chairman, Senator Allott, and members of the committee: My name is Donald W. Hamil of Sterling, Colorado. I am president of the Lower South Platte Water Conservancy District. In addition, I am in my own right a water user at several locations in the South Platte valley, holding direct river flow rights, storage rights, and using underground water supplies through pumping. On behalf of the District and the people of the great South Platte valley, I urge your committee and the Congress to support and approve reauthorization of the construction and operation of the Narrows Unit by the Secretary of the Interior as a unit of the Missouri River Basin project.

The District's principal statement today will be made by Eric Wendt, secretary-manager of the District. Our general attorney, Monte Pascoe, is here and available to assist in answering questions. Several of our Board members are present to testify and other directors are here to listen.

I want to make a brief statement about our Conservancy District and the support that has been given to efforts to develop the Narrows Project.

The desire and the need of people in the Lower South Platte River valley to develop their water resources culminated on May 6, 1964, with the formation of the Lower South Platte Water Conservancy District, in accordance with Colorado law.

The District comprises parts of Morgan, Washington, Logan and Sedgwick counties in Colorado and contains within its boundaries 375,040 acres. Included are the municipalities of Fort Morgan, Brush and Sterling, plus seven smaller towns. Colorado law provides that the owners of lands not now in the District may file a petition with the Board of Directors that such lands be included in the district.

The conservancy district is a local instrumentality of the state government. As such it has taxing power within prescribed limitations, may acquire and sell water, construct water resource projects and, in general, do everything necessary to provide adequate water supplies for the area served. Since 1937 such districts have been the sponsoring, repayment and distribution agencies for federal reclamation projects in Colorado.

The petition for an order establishing the Lower South Platte Conservancy District sets forth, among other things, that "the District contemplates contracting with the United States, pursuant to Federal reclamation laws, for the construction, preservation, operation and maintenance of a reservoir on the South Platte River west of Fort Morgan. . . . The purpose of this improvement is to divert and store waters on the South Platte River and its tributaries for beneficial use."

The District area, in northwestern Colorado contains thirty-three irrigation entities, some of which were established over one hundred years ago, irrigating approximately 166,370 acres of land from South Platte River surface supplies. More acres were irrigated at times, but water shortages forced curtailment. Water developed by Narrows will be supplemental only, and will be released at times of need, which occur perennially in late summer.

Total assessed valuation of property in the District in 1969 was \$75,513,803.00. The market value is substantially higher. If the cost of diversion and distribution facilities owned by irrigation companies is added to the market value, one can readily see that land owners have a substantial investment in the District, maintenance of which is directly or indirectly dependent on an adequate and available supply of water.

These and other investments in the valley's economy must be protected. Moreover, planned development of the valley's resources will provide the finest in rural life for many additional persons. With this in mind, the objectives of the District in seeking authorization for construction of Narrows are: to make supplemental water available in time of need; to preserve and maintain the existing economy, and if possible, to provide for expansion of that economy; to furnish flood protection; and to supply much needed recreational opportunities for those in the valley and those who live near or travel through the valley.

The Narrows Project, a multi-purpose unit, which has the support and approval of the Department of the Interior and the Bureau of Reclamation, will go a long way toward fulfilling the requirements of our area. Testimony of others will show that it fits in well with Colorado's overall plan for water resources development and will complement and encourage wise and thoughtful further development of natural resources in the Platte River Basin in the future.

## SUPPORT

We and those in our area have sought and had the whole-hearted support of the Governor of Colorado, the Colorado Water Conservation Board, other state officials, county governments, and many municipal officers, civil and service organizations, irrigation people, and many interested citizens, including those only indirectly concerned with water use.

The interest of citizens in water development through an onstream dam at this location in the Platte Valley goes back almost 80 years. Great interest was established in 1948 when an office, maintenance shop, and twenty housing units were constructed in Fort Morgan, under authorization of the Narrows Project as part of the Flood Control Acts of 1944 and 1946. These construction activities were subsequently terminated due to local opposition, although planning continued. Reauthorization of the unit became necessary so the Congress can study developments and changes occurring in this last 20 years before making appropriations for Narrows.

In 1958, a determined delegation from the lower South Platte River Valley successfully appealed to the Colorado Water Conservation Board to put the Narrows Project once again on track. This was done. The efforts of local people eventually resulted in formation of the Narrows Dam Association, which was the primary sponsoring agency for the Conservancy District. Today, after years of work by tireless volunteers, the small but vocal opposition has almost disappeared. Support for the project is nearly unanimous.

## SUMMARY

We ask members of this committee to recognize the importance and need of early authorization and construction of Narrows to meet requirements of citizens of the District area and throughout Colorado. We want to use beneficially water that is now unused. Records of gauging stations near the Narrows site indicate that the average annual flow of the South Platte River, 1947-1961, has been in excess of 365,000 acre feet. Of this amount an average of 187,700 acre-feet per year is considered storable at Narrows.

Water shortages are experienced every year, primarily because storage facilities are lacking. The water runs by unused, and is not available in time of need. Narrows, in addition to all its other benefits, will make possible the storage and timely release of available but unused water resources.

The Lower South Platte Water Conservancy District is on record as being ready and willing to accept its responsibility in the construction and operation of the project. We urge and respectfully request the favorable action of this committee and the ninety-first Congress of the United States on S. 3547.

Senator ALLOTT. Just one thing. Don, in your statement you say that the district comprises Morgan, Washington, Logan, and Sedgwick counties in Colorado. The other thing which I think it is important to be emphasized in the record, or one other thing at least, from your statement, is that as such it has taxing powers within the prescribed limitations of the Colorado statutes.

Mr. HAMIL. Yes, sir.

Senator ALLOTT. That is correct, is it not?

Mr. HAMIL. Yes, sir.

Senator ALLOTT. I think those are the only things I wanted to emphasize from the statement. It has the power to contract for the water so that we have no question of any unraveled ends on that score.

Mr. HAMIL. Yes, sir.

Senator ANDERSON. The people there are in ardent support of the project?

Mr. HAMIL. Yes.

Mr. Wendt will elaborate on that particular item. Basically, I would say that our opposition is very minor, very minor.

Thank you.

Mr. Wendt?

Senator ALLOTT. That is Mr. Eric Wendt, who is the secretary-manager of the Lower South Platte Water Conservancy District.

I wish you could have found a shorter name for it, Eric.

Mr. WENDT. We tried, Senator, but we found that the legal situation involved in changing all the land records made the costs so far out of sight that we couldn't touch it.

Senator ANDERSON. Will you present your statement?

Mr. WENDT. Mr. Chairman, Senator Allott, it is a real pleasure and privilege to be here. As has been stated, I am secretary-manager and treasurer of the Lower South Platte Water Conservancy District, sponsor of the multipurpose Narrows project in the Lower South Platte River valley in northeastern Colorado. I speak for the district, its board of directors, and in view of the great interest shown in the Narrows project, I believe that I speak for the majority of the thousands who comprise the district.

In the interests of time, I will not read my rather lengthy statement, statement, nor even attempt to summarize it. I believe it speaks for itself and I ask respectfully that it be entered in full in the committee record as it has been submitted to you.

Senator ANDERSON. Thank you.

When we planned this, we couldn't tell whether the Senate would be in session.

Senator Allott, and I appreciate your summarizing the statement.

Senator ALLOTT. Eric, if you will, why don't you highlight verbally the points of your statement and the whole statement will be placed in the record.

I might add that I will give to the reporter a list of the people I mentioned before to go with their titles and the offices they hold so that they will be a part of the record.

Mr. WENDT. Thank you, Mr. Senator.

(The statement and list referred to follow:)

PEOPLE INTRODUCED BY SENATOR ALLOTT

LOWER SOUTH PLATTE WATER CONSERVANCY DISTRICT,  
Sterling, Colo., June 1, 1970.

Mr. CHARLES F. COOK,  
*Minority Counsel, Senate Committee on Interior and Insular Affairs, New Senate Office Building, Washington, D.C.*

DEAR MR. COOK: This is to confirm that the following will be in attendance at the Subcommittee hearing on S. 3547 in Room 3110 of the New Senate Office Building in Washington, D.C. on June 10, 1970 at 10:00 A.M.:

*Donald W. Hamil*, President, Lower South Platte Water Conservancy District, Sterling, Colo.

*Millard Huey*, Vice President, Lower South Platte Water Conservancy District, Fort Morgan, Colo.

*Eric P. Wendt*, Sec-treas., Lower South Platte Water Conservancy District, Sterling, Colo.

*D. Monte Pascoe*, Gen'l Counsel, Lower South Platte Water Conservancy District, Denver, Colo.

*Denzel R. Pyle*, President, North Sterling Irrigation District and Director, Lower South Platte Water Conservancy District.

*Donald Spillman*, Director, Lower South Platte Water Conservancy District, and farmer in Julesburg Irrigation Dist.

*William Venohr*, Mayor Pro Tem, City of Sterling, Colo.

Statements will be made by Donald W. Hamil and Eric P. Wendt, and 25 copies of same submitted in advance. Pascoe will assist in answering questions of the committee. All of the above listed people are proponents of the Narrows Unit and are willing to so state.

We will bring copies of letters, resolutions and statements of others for the Record of the hearing.

Thank you for your co-operation in filling us in on requirements for presenting testimony, etc.

Sincerely,

ERIC P. WENDT.

STATEMENT OF ERIC P. WENDT, BRUSH, COLO., SECRETARY-MANAGER FOR THE LOWER SOUTH PLATTE WATER CONSERVANCY DISTRICT

Mr. Chairman, Senator Allott, and members of the committee: My name is Eric P. Wendt, of Brush, Colorado. I am the secretary-manager and treasurer of the Lower South Platte Water Conservancy District, sponsor of the multipurpose Narrows Project in the Lower South Platte River valley in northeastern Colorado. I speak for the District, its Board of Directors, and in view of the great interest shown in the Narrows Project, I believe that I speak for the majority of the thousands of citizens who comprise the District.

HISTORY AND BACKGROUND

This statement presents timely and concise information current as of this date, and supplements and expands the remarks by the District President, Mr. Hamil.

The District involves parts of four counties—Morgan, Washington, Logan and Sedgwick—in the lower portion of the South Platte River valley of Colorado.

The District is approximately 120 miles long and 5 to 20 miles wide, and includes the cities of Fort Morgan, Brush and Sterling and the towns of Log Lane Village, Synder, Hillrose, Merino, Atwood, Iliff, Proctor and Crook. There is a total of 375,040 acres of land within the District.

The Narrows Project was conceived as early as 1909 and a number of sites were considered. As a result of severe water shortages and numerous disastrous floods the need for an adequate irrigation and flood control reservoir has been recognized locally since the turn of the century. The Narrows Dam and Reservoir was eventually authorized as a unit of the Comprehensive Missouri River Basin Project by the Flood Control Acts of 1944, 1946 and 1950 after early investigations by private interests, the Corps of Engineers and the Bureau of Reclamation.

The first construction activities were initiated in 1947. After public field hearings were held, construction activities on the authorized Narrows Unit were halted in 1951 because of intense local opposition. Between 1951 and 1960 planning work continued on the Project; including a semidetached classification of downstream lands and hydrology and design analyses.

In the years following 1951, many discussions went on and meetings of interested groups were held. On April 18, 1958, a large delegation of Platte River Valley residents successfully prevailed upon the Colorado Water Conservation Board to once again focus its attention on the Narrows Project. Following this the Colorado Water Conservation Board advanced funds to the Bureau of Reclamation to assist in studies (\$82,950 in years 1959-1962).

Among other things the Bureau was specifically requested to make a hydrology study and cost comparison of a site (Hardin) about 23 miles upstream in Weld County. The purpose of this study was to, once again, review and analyze objections to the Narrows Site. These studies terminated in a meeting of the Colorado Water Conservation Board in Fort Morgan on September, 1964. At that meeting the Narrows Site was again selected as the most satisfactory site and was officially approved by the State Board as the desired site. Complete details are listed in the Bureau of Reclamation Report on the Narrows Unit, Colorado, dated January, 1967.

In late September, 1967, the Bureau's Report on the Narrows Unit, Colorado, was approved by the Secretary of the Interior and submitted, as required by reclamation law, to all Missouri River Basin states and interested Federal and state agencies for a 90-day review period and formal comment. Early in 1968, after a review of comments, the Secretary's report on Narrows was completed.

On March 4, 1970, Senator Gordon Allott of Colorado, in whose state the Narrows Project is located, introduced S. 3547, a bill to authorize the Secretary of the Interior to construct, operate and maintain the Narrows Unit, Missouri River Basin Project, Colorado. Co-sponsor of the bill was Senator Peter H. Dominick of Colorado.

A similar bill, H.R. 6715, had been introduced by Congressman Wayne N. Aspinall (4th District, Colorado, in whose district the Narrows Unit is located) in the House of Representatives. Field hearings on Narrows legislation were held in Fort Morgan, Colorado, on November 25, 1968, by the House Subcommittee on Irrigation and Reclamation. H.R. 6715 has now been approved by the full Committee on Interior and Insular Affairs in the House and is now in the Rules Committee for assignment to the calendar of the House for appropriate action on the floor of that body.

#### ROLE OF THE CONSERVANCY DISTRICT

The Lower South Platte Water Conservancy District operates under the authority of Colorado's Conservancy District Act of 1937. Under the laws of Colorado and prior to delivery of project water, the District may levy a one-half mill ad valorem tax on all tangible property within the District and after delivery of water the District may levy a one-mill tax. A tax of one-half mill has been levied by the District to assist planning of the Project since 1964.

The assessed valuation of real and personal property in the District has increased from approximately \$61 million in 1964 to over \$75 million in 1969.

The economy of the Lower South Platte Valley is based on agricultural production and related activities. Croplands produce small grains, corn, potatoes, beans, alfalfa, other hay crops, and sugar beets. Many farmers diversify their operations by feeding livestock on a limited basis; commercial feedlots, some rating with the largest in the nation, are located throughout the valley. As a result, most of the grain and forage is fed locally. In recent years commercial slaughtering of livestock has become an established industry, with plants in operation in Fort Morgan, Brush and Sterling. This is a wholesome and natural development, with all raw materials and labor available in the local market. Tremendous expansion of the three packing plants is already in advanced stages of planning.

Maintenance of the existing economy, increased production, and expansion of agriculture and industry and the need to increase the valley's resources to provide for persons seeking a more rural way of life make the need for more water obvious and imperative.

#### THE NARROWS PROJECT

As now designed the Narrows Project will consist of:

1. The Narrows Dam for multi-purpose water storage;
2. Acquisition of the existing Jackson Lake and additional lands for recreation and fish and wildlife purposes; and
3. Construction of facilities specifically for the recreation and fish and wildlife programs.

The Narrows Dam across the South Platte River is about seven miles upstream (west) of Fort Morgan, Colorado, and about 70 miles downstream (northeast) of Denver. Jackson Lake is located on the North side and above the high water elevation of the Narrows Reservoir.

No Federal construction of canals, laterals, or other water conveyance facilities is planned as part of the unit. Supplemental irrigation water would be released through the Narrows Dam in the South Platte River for subsequent diversion through existing facilities. However, a special outlet would be provided through the dam to deliver water to the Fort Morgan Canal, whose diversion and conveyance facilities would be inundated by the Reservoir.

These facilities and their operation are fully described in the report on the Narrows unit, Colorado, South Platte Division, Missouri River Basin project, January, 1967 and the re-evaluation statement, Narrows unit, Colorado, November, 1969, both prepared by the Bureau of Reclamation.

The Narrows Unit is a plan for further development and conservation of water and land resources in the Colorado portion of the South Platte River Basin. The plan has been formulated by the Bureau of Reclamation at the request, and with the assistance, of the State of Colorado and its citizens in the South Platte Valley.

The Narrows Unit would serve multiple purposes. It would—provide supplemental irrigation water; provide urgently needed flood control; increase recreational opportunities; enhance fish and wildlife resources, and improve the downstream water quality.

## PROJECT BENEFITS

Irrigation.—The Narrows Unit will provide supplemental irrigation water for 166,370 acres of prime land within the District. Of the total cost of the project, that amount allocated to irrigation will be repaid to the Federal Government in accordance with the reclamation policy which prevails throughout the West. The Board of Directors of the Lower South Platte Water Conservancy District has by resolution certified its intent to enter into such a contract with the Federal Government. The necessary funds for repayment would be derived from the one-mill tax levy mentioned earlier and from the sale of project water.

Should the need arise, it will be possible to provide supplemental irrigation water for upstream users through exchange procedures or by pumping plants.

The new water supply from the Narrows Unit will improve water quality by stabilizing the stream flows of the lower South Platte. The Narrows will play a particularly valuable role in the late summer and early fall when reduced stream flows increase pollution hazards. This function is vital to the health and well-being of people of the valley. Water is the first essential of life for cities and industry, as well as for human beings, animals and plants. A good, available supply of clean water is a major factor in determining the growth and prosperity of a community.

The Bureau of Reclamation estimates that irrigation benefits from the use of supplemental water will average \$1,631,500 annually. Our district concurs in this, and, if anything, believes it is conservative.

*Flood Control.*—The South Platte River Valley in the Narrows area and downstream has been ravaged by floods many times. Significant floods of record occurred in 1844, 1864, 1867, 1876, 1894, 1921, 1933, 1935, 1965 and 1969.

The June, 1965, flood was the most destructive on record. The largest torrent of water ever to fill the South Platte River roared down upon anything which lay in the course of the flooding in the middle of June and the whole State reeled from the worst natural disaster in the history of Colorado.

The District's part of the South Platte watershed, the area from the west Morgan County line to the Nebraska boundary, was hit by the massive attack and destructive antics of the wall of water which earlier roared through Denver. Dry streams like Bijou Creek and Beaver Creek spilled over and dumped even more water into the Platte, isolating for some time the cities of Fort Morgan, Brush and Sterling. At its peak Bijou Creek was estimated by State and Federal officials to have discharged over 400,000 cubic feet per second. Roads, bridges, and irrigation systems were severely damaged or destroyed in the Conservancy District area. Under provisions of Public Law 81-875, Federal disaster funds were distributed through the Conservancy District office to 33 ditch companies and irrigation districts in the amount of \$573,574.83. Damage to public and private property ran into the millions and some of that may be discussed in other testimony here today.

In 1969, beginning in the first week of May, heavy rains fell in the foothills of the Rocky Mountains west and north of Denver, causing immediate and serious flooding in the South Platte valley. The wet weather pattern persisted for a ten-week period extending through the first week of July.

While total volume of the 1969 flood was nowhere near the volume and peak of the 1965 flood on the South Platte, the havoc created was of such magnitude that the President of the United States declared a 15-county disaster area in Colorado and damages in the basin totaled in the millions of dollars. The high flow for a sustained period of time caused particular damage to irrigation works.

In the Conservancy District service area damage to irrigation diversion works alone was over \$400,000. All needed repairs and replacements have now been completed. In some instances damage to river diversion works was more serious in 1969 than in the record flood of 1965.

We point out, particularly, that the abnormal rainfall causing the 1969 flood on the South Platte occurred downstream from any existing or proposed flood control structures upstream from the Narrows site and had Narrows been in place most of the \$400,000 worth of damage to irrigation works from the 1969 floods would not have occurred.

The high waters of 1969 again conclusively demonstrated the worth and need of Narrows Unit for flood control.

Moreover, had Narrows been in place last year, it would not only have prevented floods, it would have stored large amounts of water for later beneficial use.

During the ten-week period of the floods mentioned here, the total river flow that could have been stored in Narrows Reservoir for later beneficial use was 360,260 acre feet. This volume of water would have filled the reservoir almost to the top of the planned conservation pool.

Commencing October 1, 1969, following the irrigation season, an additional 420,294 acre-feet of water could have been stored, through today, in Narrows.

In total more than 780,554 acre-feet of surplus water would have been stored in Narrows Reservoir in the period from April 1, 1969, to April 1, 1970. This water would then be available for coming years when, from past experience, we know the Platte will supply only a small part of the water needed. When this information is added to the facts supplied by the Bureau of Reclamation on historical supplies, the necessity for construction of Narrows to capture needed irrigation water, which often causes damage as it runs away, is again confirmed.

Data for the above figures were derived from reports in the State Engineer's office and took into account first supplying all prior rights for water.

The Narrows Reservoir would reduce flood damages in the downstream area by an annual average of \$1,599,000 as estimated by the Corps of Engineers. Current plans for control of Bijou Creek will be discussed later in our statement.

*Municipal-Industrial.*—Some of the conserved water in Narrows Reservoir will, in the future, be converted from irrigation to municipal and industrial uses. Far-sighted municipal officials in Fort Morgan, Brush and Sterling several years ago went on record with requests for a total of 17,500 acre-feet of project water to fill foreseeable and projected demands.

The total supply of project water available for use through the Narrows Unit, estimated to average 140,700 acre-feet annually, will have a very favorable impact on the overall economy of the project area. Details of the economic effect are outlined in Appendix IV to the Regional Director's Report on the Narrows Unit, Colorado. Testimony by others here today, our Directors feel certain, will bear out the fact that city people are willing to work with neighboring farmers and townspeople on this program that reaches across city boundaries and county lines—to build Narrows for conservation of water, for flood control, and for recreation and enhancement of fish-wildlife facilities.

*Fish-Wildlife, Recreation.*—The Narrows Reservoir and adjacent project lands will comprise the largest water recreation area in the State of Colorado. The unit will also provide an important new area for the propagation and protection of fish and wildlife.

Of all forms of outdoor recreation, water offers the greatest appeal; people seem drawn to water instinctively—like migratory birds flying north in the spring—if only to drive where it is and look at it, while they rest and relax.

In Colorado recreation presses agriculture as the state's leading source of income. Recreation is big business—tourists alone spend about \$600 million in Colorado annually. With Narrows this valley can better serve the recreation needs of both its residents, including Denverites, and its visitors.

The National Park Service has formulated a recreation plan for the Unit. The Fish and Wildlife Service has similarly drawn up a plan for enhancement of fishery values. Both plans have been incorporated as co-ordinate purposes in the overall plan of development.

The basic Narrows Reservoir needed for irrigation and flood control will, by itself, provide substantial recreation and wildlife values. However, those basic values will be increased measurably by the acquisition of adjacent Jackson Lake, by the acquisition of additional lands, by the use of some basic reservoir rights-of-way lands for recreational purposes, by the construction of specific recreation facilities, and the construction and operation of a fish hatchery. These additions are in the Regional Director's Report.

The co-operating agencies have estimated that the unit would produce annual benefits as follows:

Fish and Wildlife-----	\$552, 002
Recreation-----	1, 162, 500
Total-----	1, 714, 700

The State of Colorado has stated its intent to agree to administer the land and water areas for recreation and fish and wildlife enhancement and to repay such of the project costs, with interest, that must be reimbursed. A copy of the letter

of intent dated February 2, 1968, is included in the Re-evaluation Statement. The potential fish hatchery subsequently was added to the plan of development. A letter dated October 6, 1969, approving the revised report is attached to the Re-evaluation report by the Bureau of Sport Fisheries and Wildlife.

*Benefit-cost Ratio.*—The worth of a project with respect to its impact on the economy is measured by the Congress in terms of the ratio of annual benefits to annual costs. The annual costs include the annual equivalent of the total contemplated capital investment (measured for Narrows over a 100-year period with interest at the rate of  $3\frac{1}{4}$  percent annually) plus operation, maintenance and replacement expenses.

The reevaluation of the Narrows Unit under current standards, policies, and price indicates that the unit retains economic justification and financial feasibility. Benefit-cost ratios are 1.81 to 1 for direct benefits only, and 1.89 to 1 for total benefits. Costs allocated to irrigation permit full repayment of such costs by the conservancy district in 40 years without a development period.

#### PROJECT UNDER OPERATING CONDITIONS

*Water Supply.*—The Narrows Reservoir will function as a supply tank with a valve which can be turned off or on to trap surplus water or release stored water to fill needs in the lower South Platte valley, without in any way interfering with historic water uses or affecting vested water rights.

The water to be developed by the Project and stored in Narrows is surplus water, which at the present time goes unused. During the 15-year period which provided data for the Bureau of Reclamation in its feasibility studies, the average annual flow at the Narrows site was approximately 365,200 acre-feet. Of this total flow an average of 187,000 acre-feet flowed across the State line into Nebraska, unused in Colorado. It was water in excess of the amount which the Interstate Compact requires Colorado to deliver at the State Line during the period from April 1 to October 15 of each year.

It is this water which now flows past the Narrows site in time of an over supply in the river which Narrows will impound for use as supplemental irrigation water in times of need.

The surplus flow occurs either during the nongrowing season when there is no need for diversions under direct flow rights or during periods of high flow caused by snow-melt or rainfall run-off at which time the flow exceeds the direct diversion needs or capabilities; an on-channel reservoir is required to develop the water supply and to prevent flood damage. The need for storage is also demonstrated by the variations in annual storable flows—5,100 acre-feet in 1953 (one of the driest years in history) to 485,000 acre-feet in 1958.

*Flood Control.*—On an equal basis with water storage will be the function of flood control. The calculated inflow design for Narrows has a peak discharge of 344,000 second feet and a 20-day volume of 1,363,000 acre-feet. A capacity of 1,125,373 acre-feet is provided in the reservoir for temporary storage of flood water. Of this space 475,000 acre-feet will be in the exclusive flood control pool, 75,000 acre-feet in the joint-use pool to be available in early spring each year, and a surcharge pool (safety factor ) pool of 575,373 acre-feet at maximum water surface elevation of 4,447.0. The entire flow of the South Platte during the record flows of 1921, 1965 and 1969 could each have been fully stored in Narrows.

The total flood storage capacity in combination with a spillway discharge of 27,600 cfs and a river outlet discharge of 8,600 cfs is provided to protect against any projected flood. In operation the river outlet discharge will be limited to 5000 cfs during the filling of the flood control capacity.

*Irrigation.*—In addition to the tremendous reserve for flood control storage, the reservoir also includes a permanent storage capacity of about 373,000 acre-feet of water to be utilized for several purposes, primarily irrigation. Water released from this permanent pool, principally through the river outlet works, will ultimately be distributed to water users, who contract for it, on 166,370 acres of land in the Conservancy District.

*Recreation.*—An overall plan of development, including a proposed fish hatchery, has been formulated by the Bureau of Reclamation in co-operation with other Federal and State agencies to provide facilities for the enjoyment of the water and shores of Narrows Reservoir. Proposals for recreational development and other land uses, as embodied in the Bureau of Reclamation Report, will serve as a guide for future improvements as the needs become apparent and Federal and State funds are available.

Existing Jackson Lake, now used principally to store water for the Fort Morgan Irrigation District, will be acquired by the Project for recreation and fish and wildlife enhancement. The irrigation storage historically provided by Jackson Lake would be transferred to the Narrows Reservoir for a fee.

About 3,000 acres of land would be used for recreation purposes. This would include 2,810 acres specifically acquired for that purpose. Facilities would be constructed as the needs develop. Such facilities would include access roads, parking area, boat launching facilities, campgrounds, picnic units, toilets, water supply, shelters, beach development, administrative area, landscape planting and signs.

National Park Service officials estimate 930,000 people will use the facilities in the first year after the initial recreation development has been completed. It is estimated that the majority of the visitors will originate from the zone of recreation influence described as the area within a 60-mile radius and adjacent cities.

With the assumption that the population in the region will continue to increase and water-oriented recreation will continue at its present popularity, it is estimated that in about 25 years after the initial development has been completed the annual visitor day use will be 1,225,000 (about 4,000) daily.

*Fish and Wildlife.*—The fish and wildlife development would encompass a 15,765-acre wildlife management area, of which 3,520 acres would be purchased specifically for that purpose. Gradual evolution of plans in this area would include habitat development, a headquarters building, necessary equipment, fencing and posting, and check stations and parking lots.

The State of Colorado has indicated its intent to bear its share of the construction costs allocated to fish and wildlife, and to administer the land and water areas for recreation and wildlife enhancement, including the operation and maintenance of the fish hatchery.

#### MISCELLANEOUS ITEMS

*Sedimentation.*—The lowest portion of the reservoir (32 feet in depth) will be utilized for the deposition of silt. Accumulation of silt, according to Bureau of Reclamation estimates, is not expected to encroach upon the other storage allocations for many years. With increased soil conservation practices and upstream flood control (i.e. Chatfield, Cherry Creek, Mount Carbon, and Two Forks) the rate of sedimentation will be greatly lessened and the usefulness of the Narrows Project substantially lengthened.

*Bijou Creek Control.*—The original plan for the Narrows Unit, as developed in the planning report prepared in 1951, included plans for the diversion of Bijou Creek floods into the Narrows Reservoir. Upon demand of the Conservancy District and others, this potentiality was again analyzed following the record flood of June, 1965.

However, residents of the Bijou Creek valley are interested also in upstream control and flood protection, if this alternative is at all possible.

The Corps of Engineers has completed a preliminary appraisal of flood control aspects for Bijou and Lower South Platte valleys. They have found a feasible solution for alleviating a significant portion of damages presently experienced. Their flood control plan for Bijou does not depend on, but rather complements, the Narrows Project. Therefore, the contingent condition relating to Bijou Creek flood control as described on pages 35 and 36 of the January, 1967, Narrows Project Report has been satisfied.

#### SUMMARY

Over the last 6 years members of the Board of Directors of the Lower South Platte Water Conservancy District, the District's staff members, many interested citizens and officials of the State of Colorado have made every effort to expedite and coordinate plans for the Narrows so as to fully meet the requirements of the Congress and the executive agencies of the Federal Government.

For more than twenty years individuals, farmers, firms, cities and towns have contributed time and effort in support of the planning for Narrows, while paying their own expenses. Since becoming a conservancy district under Colorado law, the Board of Directors has had as its stated objective the completion of plans for the Narrows Project. The State of Colorado, beginning in 1959, has advanced funds for detailed studies and engineering surveys to expedite all necessary preliminary plans for the Narrows Project.

All property owners within the Lower South Platte Water Conservancy District

are paying taxes now for this project as a result of the ad valorem tax. Water users who will be supplied with project water, will pay that share of the project costs allocated to irrigation. When the Narrows Project is in operation, the taxpayers will be obligated to pay almost \$75,000 annually as the result of the one-mill tax levy.

The critical problem of chronic water shortages in the lower South Platte River area of Colorado must be solved. This project will meet that need. The need for more water is obvious. Colorado is a dry state; in the District service area the average annual rainfall is less than 15 inches. Current replenishment of the water supply is only by precipitation and the amount of water available in any year is an inflexible quantity which has no relationship to the ever-increasing human population and its demands for water.

The utmost utilization of the available water is, therefore, within the framework of the laws of Colorado, not only desirable but an absolute necessity. While stabilizing the total water supply, the project will indirectly stabilize the entire economy, in which the value of tangible property, in the district alone, exceeds \$250 million. From the standpoint of need and timing, it is imperative that the construction of this project be undertaken as soon as possible.

The Narrows Unit is multipurpose. Its benefits will be for everybody in the area. Agriculture production can be stabilized. Making full and better use of the land, water and human resources will boost industry and business in the entire valley. Industry is interested in locating in a stabilized and flood-free valley; with Narrows our valley will have an unsurpassed industrial climate to offer to new industry. Narrows will make the valley a home where its citizens can be healthy, safe, productive and happy and where persons who seek a more rural life can move for such a life.

The Lower South Platte Valley's future development and maintenance of agriculture, industry, rural life and municipal growth depend upon the availability of an abundant, economical and stable water supply.

The water supply problem in the Lower South Platte Basin is a paradox. In many of the last 100 years, such as 1965, for instance, the flow of the river during the months of May and June has been so great that serious flood damages were sustained. On the other hand, in nearly every year, the flow of the South Platte in this area is so low in July, August and September that serious irrigation shortages are evident.

Narrows Dam has been planned to provide a method of regulating this widely fluctuating flow, without interfering with historic water use patterns. The project will store water which is there, and needed, but not yet utilized.

We call attention to the fact that the water to be conserved by storage in the Narrows Reservoir is virtually the only remaining unappropriated, unused water in the South Platte River Basin. Directors of the Conservancy District consider it an obligation to the people of the Lower South Platte Valley to take today all steps necessary to conserve this precious remaining water resource for ourselves and for those who will come after we are gone.

Here in the Lower South Platte Valley region of Colorado, people face water problems that have crept upon them so gradually that the average citizen has only recently become aware of them. Water problems here, as everywhere, are basically a matter of economics involving supply and demand. That implies control of water supplies and water distribution and immediately we get into complexities, and solutions are anything but simple.

The water problems didn't develop overnight nor will they be solved in a day or a week or a year. The problems began with the building of cities and irrigation systems. To our early forefathers the country seemed endless and its natural resources ever bountiful. Hence, because of inadequate basin or area planning and ensuing haphazard development, water users today face a serious problem; more surface water has been appropriated than is available in the river; perennially, in critical periods, the South Platte doesn't have enough water to go around and users fight bitterly over priority of use. The only real solution is to have the means to use the total supply. Narrows is a major step to this end.

No thinking person denies that water is the number one problem of the valley. A part of the solution must come from the people of this region. While the average citizen in the Platte Valley may feel all this is a problem for the engineers and governmental agencies to solve, he must, nevertheless, face up to a critical decision affecting his family's well-being, because their future water supply is involved. To a water user, the problems are not technical, but matters of economics and management. After the problems are defined, the solution still depends on

the citizen who must pay the taxes and must make the economic and political commitments that will insure a stable supply of water. The people have shown by their actions over many years they want and need Narrows and are willing to make such commitments as are necessary to bring about its construction.

The addition of Narrows project water to the water supplies of the South Platte Valley will by no means eliminate all water supply problems in the District. One would be naive to assume that the solution is that simple. The increased use of irrigation wells in the valley to supplement available water through surface diversions and to supply full irrigation requirements of limited areas has created growing competition for the available water. Various attempts are being made to resolve controversies that have risen between surface and ground water users throughout the state. In conjunction with new laws, comprehensive studies are under way to find solutions.

In the light of the complexity of the water problems, the Narrows Project is not, and never claimed to be a panacea or cure-all. Our Directors realize this; but they also believe firmly that an available water supply together with adequate flood control in a strategic location will go a long way toward a solution of water problems in the region.

Forecasts indicate doubling of the U.S. population by the year 2000, which is only 32 years away. Thus, more people need more water and while population is increasing arable land is decreasing. It is apparent less land will have to produce more food. This, too, will take more water.

Planning and action now are necessary to insure an available water supply in the future. Projects like Narrows take years to become pulsing realities. A few years from now water may be our most valuable commodity; conserving it for people is logical and should be done *right now*. The beauty of this is that conservation *now* insures water resources for the future.

We know for sure it won't get any cheaper than it is today!

Gentlemen of the Committee, our statements have been formulated with a view to showing you why Coloradans are organizing to tap a resource that's there, but not being fully used . . . yet!

Our District has worked diligently for almost six years to reach this moment before the Subcommittee on Water and Power Resources. For many years before formation of our District individuals and organizations have worked hard to bring about construction of the Narrows. On behalf of the Lower South Platte Water Conservancy District and all others who have worked on the Narrows we respectfully solicit the committee's favorable report on S. 3547 for reauthorization of construction and operation of the Narrows unit, South Platte Division, Missouri River Basin Project, Colorado, so that the Project may soon contribute to the welfare, productivity and happiness of present and future generations.

Thank you.

Mr. WENDT. Thank you, Senator Allott.

To summarize very briefly, we have an urgent need for supplemental water. Water is the No. 1 problem in the South Platte Valley. Narrows will furnish a supply which will alleviate that situation.

I might point out that another reason why this project is so vital at the moment and for the future is that the project will conserve what now runs away but not only does it run away but it wreaks havoc as it goes and the periodic floods we have are fantastic.

Mr. Sparks mentioned that the unprecedented flow of Bijou Creek in the 1965 flood caused some necessary changes in thinking in the area and it definitely has done that in the minds of our own people. It has done that in the minds of Bureau people and the Corps of Engineers who are working on the flood control problems.

I might mention this to emphasize what Mr. Sparks said about the great volume of water that came down Bijou Creek in 1965. I don't recall that he quoted the figure, but I believe the Corps of Engineers reported 466,000 acre-feet.

That, incidentally, for the record, is more water, a greater volume at peak than has ever passed the city of Omaha in the Missouri River at any time in history.

Senator ALLOTT. Mr. Wendt, you misspoke inadvertently. You said 460,000 acre-feet.

Mr. WENDT. I think it was stated in terms of flow and it was second-feet. It was astounding.

Senator ALLOTT. In talking you misspoke and I wanted to correct it.

Mr. WENDT. Thank you for that correction. I appreciate it.

Senator ANDERSON. That is why we are always glad to have Senator Allott here. He knows his subject.

Mr. WENDT. Obviously, the second point that is of vital importance to the valley, which is one of the greatest agricultural production areas anywhere, we believe, is control of these tremendous floods that occur periodically. Narrows will also do that.

Getting back once more to the water supply, we do need water. Everybody realizes that. Where to get any supplemental water is the big problem. We realize fully that the only supply available to us for additional surface supplies is to stop the floodwater that now runs by and put it to later beneficial use. That is point No. 2.

The third point is one which definitely cannot be downgraded, although in many areas it is not a popular talking point, because I have been told many times, "What on earth are you trying to do, build somebody a \$68 million fishing hole?" And when you have people with that particular attitude there is not much you can say because they have their minds made up about how they feel about things. But seriously the recreation and leisuretime activities that are inherent in a project this size which will be the largest recreation area in the State of Colorado simply cannot be estimated.

I think that Mr. Sparks spoke very truly when he said that the figures as now estimated are extremely conservative and that it is a proven fact in Colorado that estimates of recreation and leisure-time use in other projects in Colorado have in several instances proven to have more people on a given site in a day than was originally many years ago predicted would be there in a whole year. That is a matter of fact.

I don't know what else I might say to summarize, except that the cost of the project, of course, has risen and it is a serious consideration.

However, I think our people in the valley are satisfied that water isn't going to be any more expensive proportionately speaking than anything else. They realize that an automobile or tractor, anything else that has to do with farming or any other endeavor, has costs that are up and that the cost of this water proportionately is on line.

Senator ANDERSON. You have a ratio that is very good.

Mr. WENDT. Yes. We appreciate that very much. Hearing what is said here and what you gentlemen say makes us realize that we probably have something better than we realize we have.

Getting back to the cost of the thing, we know that, although the costs of the water may be high in terms of the past, it will never get any cheaper. We know that.

Gentlemen, our statements have been formulated with a view to showing you why we are organized to tap this resource which is there but not being used because we have no place to put that water at the moment. The district has worked diligently for almost 6 years to reach this moment, before the Subcommittee on Water and Power Resources. For many years before formation of our district, individuals

and organizations have worked hard to bring about the construction of this Narrows project and on behalf of the district and all others who have worked on Narrows we respectfully solicit the committee's favorable report on S. 3547, the authorization of construction of the Narrows unit, South Platte Division, Missouri River Basin project, Colorado, so that the project may soon contribute to the welfare, productivity, and happiness of future generations.

I thank you for the consideration. If I may, Mr. Chairman, I would like to submit for the record a copy of a brochure. I think all of you at one time have had one in your file. I would like to submit a copy of it for the record. I have here a series of statements, resolutions and letters, all in support of the project which I would like to submit for the record.

Senator ANDERSON. We will have the staff check to see what should appear in the record.

Thank you.

Senator ALLOTT. We may have some limitations on the brochure because of the fact that we can't print drawings and pictures.

Mr. WENDT. I should have phrased that differently.

Let's say for the file, Senator.

Senator ANDERSON. Mr. Thompson?

Senator ALLOTT. Mr. Chairman, before we get to that, I think I should make note here that in addition to the Lower South Platte Water Conservancy District, there are some other people here and they are present at the table: Mr. David Miller of Greeley, lawyer of Greeley.

When we both much younger, we used to bat heads together in the courts of law of Colorado.

Mr. David Miller is attorney for the Central Colorado Water Conservancy District, and he is accompanied by C. H. Starks, president; and Merl Dunham, a director; Al Hattendorf, a director; James Erger, a director, of the Central Colorado Water Conservancy District, which lies west of this.

Perhaps at this time, while we have these people at the table, if there are any comments from the others here at the table we could have them, or Mr. Miller might want to say a few words here at this moment.

**STATEMENT OF DAVID MILLER, COUNSEL; C. H. STARKS, PRESIDENT; MERL DUNHAM, DIRECTOR; AL HATTENDORF, DIRECTOR; AND JAMES ERGER, DIRECTOR, CENTRAL COLORADO WATER CONSERVANCY DISTRICT**

Mr. MILLER. Senator, it is always a pleasure to recall days gone by that turned out well. In common with our fellow members of the bar, we like to remember the ones we won; not the ones we lost.

With me at the table is C. H. Starks, president of the Citizens Bank of Keenesburg; and, in addition to being a director, Jim Erger is also vice president of the district.

The entire district supports this project. It is one of the applicants for a decree which we hope to receive from the Weld County district court. We see no problems in that regard.

Central and Lower South Platte have agreed to work together in the hopes that the upstream exchange will be beneficial to central as well as to the other portions of the valley.

I would like to ask Mr. Starks to tell the chairman and Senator Allott what his statement is.

Mr. STARKS. Thank you, Mr. Chairman, and Senator Allott.

In the interest of time, I just want to say that the Central Colorado Water Conservancy District is in favor of the project and we will not present any testimony because we feel it has been completely covered, but we do support it wholeheartedly.

Senator ANDERSON. Thank you very much. We will excuse you and hear Mr. Charles B. Thompson.

Senator ALLOTT. Thank you, gentlemen, all, very much.

Senator ANDERSON. Go right ahead, Mr. Thompson.

#### STATEMENT OF CHARLES P. THOMPSON, EXECUTIVE DIRECTOR, AMERICAN LANDOWNERS ASSOCIATION

Mr. THOMPSON. Mr. Chairman, Senator Allott, thank you very much for the privilege of appearing here today.

My statement is very brief, but I will summarize it.

Senator ANDERSON. Go right ahead and read it.

Mr. THOMPSON. I want to state, first, that as executive director of the American Landowners Association we do represent some people in Colorado in the area in question.

I speak today, also, for a few other ditch and irrigation companies that are active in that area.

Because the water supply is limited in the South Platte River Basin, it is important that the water management plan allow for maximum use, reuse and conservation of the basin's water resources.

For this reason, the American Landowners Association advocates that the planned dam for the main stem of the South Platte River be built upstream, possibly at the Weld County site.

We give these reasons for our position and ask the Senate to note that we represent more than 95 percent of the landowners in the proposed Narrows site area, as well as the views of local irrigation companies in the area:

The upper site in Weld County calls for significantly fewer dislocations of landowners; while fewer than 20 families would be moved at the Weld County site, more than 170 families would be moved out at the Narrows site.

The Weld County project will inundate mostly grazing lands, while Narrows will take highly productive agricultural lands out of that use.

The Weld County site offers high-quality water to the foot-hill cities—these cities could use this water and return it for irrigation use as well as other uses lower down the river.

The Weld County project promises to bring irrigation benefits to 55,000 to 60,000 acres of land which could not be serviced by the Narrows project.

Afterbay storage at the Weld County site would permit the exchange of stored irrigation water for fresh water from the Colorado-Big Thompson project.

We should further mention that the Weld County site would be privately financed and has the support of the cities and companies which it would serve.

Engineering difficulties in connection with the Narrows project include a seepage rate so high that special engineering will be needed to provide for the safety of the structure itself.

We have no doubt that the engineering can be accomplished but even if it can be, the cost estimates and comparisons for the two alternatives are conflicting and both sides seem to have reputable researchers on their side.

For the reasons given above, we ask that the Senate not consent to the reauthorization of the Narrows project, and more particularly that this committee give unfavorable report on this bill.

In reviewing the Bureau of Reclamation's report, including the investigation of the geology of the site, we have compared that with the investigations of private engineers in the Weld County site and found that there exists a possibility of a seepage factor of 40 cubic feet per second on the Narrows Dam, 31 feet at the upper Weld County site and a possibility of an almost perfect seepage situation at a lower site in Weld County.

Looking at the figures it shows that we could possibly save ourselves about 30,000 acre-feet of water per year by choosing another site.

Mr. Chairman, I would like to submit for the use of this committee either in the files or in the record the statement of the Weldon Valley Protective Organization.

Senator ANDERSON. With no objection, that will be done.

(The statement referred to follows:)

#### MEMORANDUM

To: Senate Committee on Interior and Insular Affairs, Sub-Committee on Water and Power Resources.

From: Weldon Valley Protective Organization, Colorado Chapter, American Landowners Association.

A Dam at the Narrows Site is not needed on the South Platte River for flood control because the damage below the Narrows is caused by Bijou Creek. This was supported by considerable testimony before the Sub-Committee at the Fort Morgan Colorado Field Hearing on November 25, 1968. This is further substantiated by Exhibit A., prepared by the Corps of Engineers, which states that in 1965 the Bijou Creek flood caused 32 million dollars in damages along the South Platte River downstream from Bijou Creek. The Corps of Engineers have a potential plan of improvement for Bijou Creek Basin. (See exhibits "A" and "B")

In regard to the May 1969 South Platte River flood, estimates released from the Governors office and reported in the May 15th issue of the Fort Morgan Times, showed \$5,032,000.00 estimated damage to Public property above the Narrows Site and only \$111,000.00 below the Narrows Site or 98% of the Flood Damage occurring above the Narrows Site. (See exhibit "C").

In the floods of 1965, over 200 million Dollars in damages were done in the Denver Area alone, while only one bridge was damaged in the 50 miles upstream from the Narrows Site to Greeley, Colorado. The South Platte River tends to flatten out above the Narrows Site and does not do an appreciable amount of damage, unless Bijou Creek floods, and this is below the Narrows Site. Why not spend this money upstream where it will protect the high population and investment areas, and do the most benefit?

It is believed that if a realistic figure for the purchase of right-of-ways were used, the cost benefit ratio would not be favorable for this project. The river bottom land, classified as waste land and to the best of our knowledge, appraised at \$35.00 per acre, is worth perhaps 15 times that amount for Recreation and Hunting. A parcel of 40 acres, sold at auction, by the State Land Board in October of 1969, brought \$775.00 per acre. This land lies in lower Weld County at the upper portion of the Narrows Site. (See Exhibit "D").

Mr. Kenneth Stout, Foreman of the K4 Ranch at Masters, Colorado, reported that a portion of this ranch, containing 430 acres along the South Platte River, was appraised at \$1,000.00 per acre for recreation, for Estate purposes, by a Greeley, Colorado Realtor. This land is also at the upper portion of the Narrows Project.

About 13 years ago at a State Land Sale, an 80 acre tract, lying between Weldona and Goodrich, Colorado and being pure waste land for all practical purposes, was auctioned for \$210.00 per acre and would now be worth several times that amount.

The water rights alone for this land are worth as much as the Bureau of Reclamation estimated the right-of-way to cost in 1964, excluding the Railroad Right-of-Way. The Weldon Valley Ditch Company has an 1881 direct flow decree for 165 Sec. Ft., annually diverting 35,000 acre ft. of water. (See Exhibit "E").

We believe this project will cost in excess of 100 million dollars if built in the next 5 years, and this will not show a very favorable cost, benefit ratio. Why use Federal Funds when Private Capital will build a dam on the South Platte River? (See Exhibit "F").

A decree has been granted for water storage on the South Platte River using private capital, to be dated July 2, 1963. A court hearing opened in Greeley, Colo. District Court on March 31, 1970 to establish a Decree for the Proposed Narrows Project. If a Senior Decree is granted the Narrows, it will knock out the proposed Weld County Dam. If a Junior Decree is granted, water will not be available for the Narrows Project. It will probably be a couple of months before this decree is made.

The Weld County Dam is backed by 6 rapidly growing Cities that need fresh water badly, and could exchange poor quality stored irrigation water for at least 7,000 acre ft. of fresh Big Thompson water annually. The Big Thompson water is owned by the Bijou and Riverside Irrigation Systems. This would benefit many more people than the Narrows Project.

This area is now being very well utilized for recreation and hunting. The 1968 figures from the Game and Fish Department, show that 52,921 cars, or 185,242 persons visited the Jackson Lake Recreation area during 1968. Every parcel of land along the South Platte River is now being utilized for duck hunting, either by lease or permission. The Jackson Lake Recreation area will be inundated by this project.

This project will displace 2 active churches, one school with 210 average daily attendance, over 600 persons and approximately 9,000 acres of prime irrigated land. This project will not create any new farms or homesites, as it is designated as supplemental irrigation water. The majority of this farm land does not need extra water as most farms along the river have developed shallow irrigation wells and these farmers now sell their lake storage water to other Irrigation Companies.

We believe this project will take more away from the economy of Eastern Colorado than it will benefit, and add several hundred more people to the Cities, where they are not needed. It will be impossible to find enough farms in this area to replace these. Farms in the Fort Morgan and Greeley area are now priced above their value for farming, with average quality 80's now being priced at \$80,000.00 when they are available.

All members of the Weldon Valley Protective Organization, which represents about 95% of the residents of the area involved are opposed to this project.

HAROLD E. TAYLOR,  
*Secretary.*

#### EXHIBIT A

This brochure summarizes the results of studies by the Corps of Engineers of flood and related water resources problems of the Bijou Creek basin. The studies were made in response to a resolution adopted in 1956 by the Committee on Public Works of the United States Senate.

Since its original settlement, the Bijou Creek basin has experienced numerous floods. Major floods occurred in 1878, 1935, 1951, and 1965; less serious floods occurred in 1888, 1894, 1905, 1921, 1933, 1938, 1939, and 1957.

The Omaha District of the Corps of Engineers, working in cooperation with other Federal, State, and local agencies, has developed a potential plan of improvement which would reduce flood damages in the Bijou Creek basin and along the South Platte River between the mouth of Bijou Creek and North Platte, Nebraska. Essentially, the plan consists of four dams and reservoirs which would be located in the Bijou Creek basin.

The purpose of this brochure is to acquaint you with the potential plan of improvement.

#### FLOOD CONTROL

Since 1878, Bijou Creek has experienced flooding at least 12 times. The most serious flood occurred in 1965, when two lives were lost. Flood damages within the basin totaled more than \$13 million. This same flood caused about \$32 million in damages along the South Platte River downstream from Bijou Creek. About 156,000 acres of land in the Bijou Creek basin and 168,000 acres of land along the South Platte River are subject to flooding from Bijou Creek flows.

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#### EXHIBIT B

DEPARTMENT OF THE ARMY—OMAHA DISTRICT, CORPS OF ENGINEERS

NOTICE OF PUBLIC HEARING—BIJOU CREEK, COLO.

The Corps of Engineers will hold public hearings in Wiggins and Deer Trail, Colorado, on Wednesday, 10 December 1969. The hearings will be held at the following locations starting at the indicated time.

*Wiggins.*—1:00 p.m., Wiggins Community Hall.

*Deer Trail.*—7:00 p.m., Deer Trail School.

At the hearings, representatives from the Corps of Engineers will discuss the water and related land resources problems within the Bijou Creek basin and will present a potential plan of improvement to help resolve them. General information on that plan is in the inclosed brochure.

You, your friends, and others interested in water resources development in the Bijou Creek basin are invited to attend the hearings. The Corps representatives will be prepared to discuss the plan.

At either hearing you are invited to say what you think about the potential plan for the Bijou Creek basin. Because the views of local people are extremely important, major views regarding the plan should be presented in writing, at either hearing, or mailed to me beforehand. The official record will be kept open until 10 January 1970, and written statements may be filed until that date.

Please bring this notice to the attention of all persons you know to be interested in the Bijou Creek basin.

B. P. PENDERGRASS,  
*Colonel, Corps of Engineers,  
District Engineer.*

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#### EXHIBIT C

[From the Fort Morgan Times, May 15, 1969]

#### COLO. ASKS \$6 MILLION FLOOD AID—COUNTY DAMAGE: \$50,000

DENVER.—Colorado asked the United States government Wednesday for nearly \$6 million in disaster relief funds to help repair damage caused by floods which swept out of the mountains west of Denver last week.

Gov. John Love flew back to his office from the bedside of his mother in California and signed the request during the afternoon.

Love said it was sent to Don Eddy, regional director of the Office of Emergency Preparedness, who will relay it to President Nixon.

The President will make the final decision.

Love said granting the request "is not automatic."

The state asked for \$5,143,400 under the general disaster relief law to provide for repairs to public property.

In a separate request it asked for \$750,000 under the Federal Highway Act for repairs to federal-aid highways.

Love said at a news conference that the damage suffered by private individuals is estimated at \$12,059,000 but this is not covered under the federal emergency act.

Love said he expects the state will get a decision on its fund request within a week or 10 days, at least.

The flood still is hanging on in the northeastern part of Colorado, the governor reported. He said two calls reporting damage came Wednesday from Sedgwick County where the South Platte flows into Nebraska. One, he said, reported

\$33,000 damage to an irrigation system and the other property damage between \$25,000 and \$35,000.

Love said while the state has resources to meet the flood losses it doesn't presently have the mechanics to get the money where needed. Jefferson County, he said, has a \$200,000 emergency fund which is only about a fifth as large as the damage suffered. Love noted that he has an emergency fund of only \$150,000.

Sixteen counties, the governor said, suffered public damage, with the heaviest losses in Boulder and Jefferson counties.

He gave these estimates for total damage by counties:

Adams \$120,000; Arapahoe \$198,300; Boulder \$1,312,500; Clear Creek \$130,000; Denver \$745,500; Douglas \$215,000; El Paso \$32,600; Gilpin \$40,000; Jefferson \$1,081,700; Larimer \$237,500; Logan \$11,000; Morgan \$50,000; Park \$32,600; Sedgwick \$40,000; Washington \$10,000, and Weld \$886,700.

Nearly three quarters of the damage reported, the governor's figures showed, was to streets, roads and bridges.

He said the federal government will pay only the cost of temporary repairs and where a permanent repair job is made the state or local agency must stand the difference.

Total estimated damage to public property.....	\$5, 143, 400
Below Narrows site:	
Morgan Co.....	50, 000
Logan Co.....	11, 000
Washington.....	10, 000
Sedgwick.....	40, 000
Total.....	111, 000
Above Narrows site.....	5, 032, 400

#### EXHIBIT D

[From the Rocky Mountain News, Oct. 15, 1969]

#### HUNTING ACREAGE SELLS FOR \$31,000

(By Bill Logan)

A 40-acre tract of public school land, choice goose and duck hunting territory which a former high-ranking state official sought to purchase for \$2,000—sold for a whopping \$31,000 Tuesday at public auction held by the State Land Board.

Moments after the public auction was completed and the successful bidder, David S. Rumin, 29, of 2401 Oneida St., plunked down a \$7,867.50 check in down payment a legal snarl developed.

Denver Diss. Judge Neil Horan signed a 10-day temporary restraining order forbidding the Land Board from selling the property to private persons, pending a hearing.

Horan acted on a motion of the Rocky Mountain Sportsman Federation, headed by Carl Bush of 4481 E. 73rd Way, Commerce City, which alleges the tract should remain property of a state agency so the public can benefit from its use.

Bush last weekend charged the Land Board offered the tract in the South Platte River bottoms near the proposed Narrows Dam Project at a give-away price, at the request of Richard T. Eckles, who quit last Jan. 1 as state natural resources director and joined King Resources Inc.

Eckles didn't attend the sale and was out of town. It was not immediately learned whether he had a representative at the auction where bidding skyrocketed from the \$50 an acre price originally offered by Eckles to \$775 an acre, the price offered by Rumin.

Even Gov. Love got into the act, after he was urged to halt the sale proposed by the Land Board.

Love contacted Land Board Commissioner Howard M. Shults, who conducts the public auctions, to get more information about the Tuesday sale.

Love didn't ask Shults to halt the sale, however.

Later the governor said Shults told him controversy surrounds many sales by the board. Shults said halting the sale might set a precedent which would cause future proposed sales to bog down in controversy.

The governor told reporters he requested Harry Woodward, Game, Fish and Parks Division director, to get into bidding for the property. Shults said he understood Woodward would be among bidders prior to the time of the auction.

Just prior to the sale, however, Woodward took the floor and said his division wasn't going to enter the bidding.

Asked where the division would get funds to make a bid, Love shook his head, indicating he possibly thought something could have been worked out.

Just prior to sale time, Rod Weese of Denver, a real estate man and head of the local chapter of the Isaac Walton League, said his organization was willing to pay \$12,000 for the tract—\$300 an acre—and turn it over to the Game, Fish and Parks Division.

Other public-spirited persons attending the sale expressed similar intentions.

Gene Cervi, publisher of Cervi's Journal, offered to pay 30 per cent more than Eckles' \$50 an acre original bid or \$65 an acre—for the land, and said he would give it to the Game-Fish Division.

Joe Gould, owner of the Kittredge Building, 16th and Glenarm streets and the Paramount Building, 1631 Glenarm Place, attended the sale and offered up to \$20,000 for the tract—\$500 an acre—and said he would give it to the Game-Fish Division.

Gould said if Tuesday's sale falls through, his offer is still good.

Shults and Woodward both did their best to explain to eager prospective buyers who crowded into the auction room on the second floor of the Columbine Building, 1845 Sherman St., that the tract in question had some drawbacks.

Woodward pointed out the land and surrounding acreage now is classified as a preserve where it is illegal to hunt wild geese. Woodward said he expects good hunting to be prohibited on the tract for some years to come, "until we get a resident flock of geese built up in the area."

The director said, however, it is legal to hunt ducks on the property.

Shults joked with the crowd, saying they "may not be able to find" the property, after there were reports surrounding landowners might attempt to bar access to the tract to any prospective purchaser.

Shults also made a short speech prior to the sale, defending action by the Land Board in listing the tract for sale. He said the board acquired the land from the Bureau of Land Management in July as part of public school lands owed the state by the federal government. He said the board picked the acreage "because we thought it would be saleable."

Bids quickly jumped from \$50—the opening—to \$60, then \$65.

Then it jumped to \$150 an acre, \$200, \$300, \$325, \$400, \$450, \$500, \$525, \$650, \$680, \$681, \$690, \$691, \$695, \$700, \$705, \$715, \$726, \$730, \$740, \$742, \$775.

Among the last bidders, Leonard Tillquist of 4080 Balsam St., Wheat Ridge, dropped out and let Rumin's high bid stand. Tillquist said he was interested in buying the property "for a group of hunters."

Rumin said access problems don't worry him. He said he might put a landing strip on the property. He said he holds a pilot's license.

Rumin told the group at the sale that hunting should be barred on the tract and it ought to be turned over to the "children of the state" to use. He said he'd form a nonprofit corporation and seek cooperation of other possible donors to this end.

Archie Granbery of 1211 Clayton St. conferred briefly with Rumin, saying he might be interested in becoming part owner. Granbery, however, said his interest in the land would be to hunt on the tract.

Rumin, after handing over the \$7,867.50 check to the Land Board, told reporters that Granbery might be the only hunter who would be allowed into the tract.

#### EXHIBIT E

Weldon Valley Ditch Company Water: 1881 Decree for 165 Sec. Ft. Annual diversion 35,000 acre ft.

Value—various ways of computing:

1. The common figure for acre ft. purchase is now \$300.00:  $300.00 \times 35,000 \text{ Acre Ft.} = \$10,500,000.00.$
2. Statements by Judges in Water Cases, quote from \$50,000. to \$75,000. Per Sec. Ft. of Decree of this vintage:  $50,000. \times 165 \text{ Sec. Ft.} = \$8,250,000$
3. Rental:  $\$6.00 \text{ Per Acre Ft.} \times 35,000 \text{ Acre Ft.} \times 50 \text{ yrs.} = \$11,000,000.$

Mr. THOMPSON. Also, a statement of Mr. Marvin Etchinson, secretary of the Weldon Valley Ditch Co.; and the testimony of Mr.

Cecil J. Osborne, registered professional engineer, Fort Morgan. I believe Mr. Osborne's statement was also included in the House hearing record, and so you may want to keep that just for the files.

Senator ANDERSON. We will keep it in the files and decide whether to place it in the record.

Mr. THOMPSON. That does conclude my statement.

Senator ANDERSON. Thank you.

Senator ALLOTT. Mr. Thompson, for my own information, what is the American Landowners Association?

Mr. THOMPSON. We are a national organization with the purpose of representing the landowners in these project areas. This could be a park, a dam area, people living alongside of a river about to be declared a wild or scenic area, landowners and people doing business having concern for land use, their own private land use. We also get sometimes into the area of our use and policies for our public lands because all Americans are landowners in that sense.

Basically, we find ourselves representing landowners in project areas.

Senator ALLOTT. There is nothing wrong in this, you understand.

Mr. THOMPSON. I am not apologizing Senator.

Senator ALLOTT. I didn't want my question to be taken in that context. I simply was not aware of the purposes.

You, yourself, are not a resident of Colorado; is that correct?

Mr. THOMPSON. No. In fact, I have not even been to the project area to look over the pros and cons.

Senator ALLOTT. All right.

I have one or two things more by way of comment, Mr. Chairman. This has been a very long, seriously considered project. Mr. Thompson here speaks of the Weld County site and it does have many things to commend it. No one can argue about that. I have met with these gentlemen here who testified I don't know how many times in the last 7 or 8 or 9 years in Fort Morgan, in Brush, in Sterling on this project. To state that everyone is in support of the Narrows site would be to state a falsification for the record, and I will go into that in a moment. However, I have to say that back several years ago, and all I can remember as far as the date is concerned is that it was a terribly hot summer day out there, I went out with many of the gentlemen in this room and we spent a good portion of the day not only going over the site but in a general meeting in Fort Morgan which included people from Sterling and down in that area as well as all the people up the valley to Fort Morgan and this question of the site was raised at that time.

At that time, I made a request to the Bureau of Reclamation, in view of the representations that had been made, to have a complete restudy of the site and the project to be sure that we were selecting the most usable and feasible site for the purposes which we are talking about here, which not only includes the flood control and the supplemental water for irrigation and M. & I. use, but also the recreation features; and, as a result of that study, the Bureau of Reclamation came out with the report again on the Narrows site and with the very high feasibility we have here.

But I would add that, while there are some out there who still oppose the site as Mr. Thompson has suggested, and he is entirely accurate in that, from the great number of letters I have had, I am

convinced, and from endless conversations with people from this general area, that the overwhelming, and I do mean overwhelming number of people in the area do support the Narrows project.

I would like to ask unanimous consent to include in the record, and I have an obligation to do this, a wire from the Weldon Valley Protective Organization, which is one of Mr. Thompson's units here in which they protest this and suggest the other site.

I also have here a letter to go with the very comprehensive statement from a very dear friend of mine and a very fine and capable lawyer, George A. Epperson, of Fort Morgan, and he is a long time friend of 30 years or more, and certainly his legal abilities and his competency in this area cannot possibly be questioned. His interests lie with the Weldon Valley people and he has prepared a statement here in opposition to the Narrows site which is of considerable length, together with letters by Cecil Osborne and others in which he justifies his position on the matter, and I ask unanimous consent that his letter to me as well as his statement be included in the record.

Senator ANDERSON. Is there objection?

There is none.

(The telegram and other material referred to by Mr. Thompson are in the appendix.)

Senator ALLOTT. Mr. Chairman, I think that is all I have to offer at this time.

Senator ANDERSON. Are there additional witnesses?

Senator ALLOTT. I don't know whether I have overlooked any of the people who have appeared here this morning. I would like to request that anyone whose name has not been mentioned here this morning would stand so that your presence may be noted here at this hearing.

Will you do that?

That is a long way to come. Will you state your name, please?

Mrs. MILLER. Mrs. David Miller, Greeley, and my grandsons, Stephen Ruile and William Hoffner, who are going to tour the Capitol.

Mrs. STARKS. Mrs. Starks, Keenesburg, Colo.

Senator ALLOTT. And you are the wife of the gentleman whom I mentioned was here a few moments ago?

Mrs. STARKS. Right.

Senator ALLOTT. Are there any others here in support of the project who have not been recognized?

I think your names should be included in the record.

Well, if you have been left out, you can only blame yourself.

Mr. Chairman, I want to express my own personal appreciation to you and express the appreciation of all of these people who have worked so hard and so long. This has almost been like the Fryingpan project in southern Colorado, which you remember so well.

Senator ANDERSON. Oh, my, yes.

Senator ALLOTT. It looks like we are at last reaching the point of realization.

I do want to express the appreciation of all of us for your presiding over this meeting and for getting this matter underway.

Senator ANDERSON. Thank you very much.

The meeting will now be adjourned.

(Whereupon, at 12 noon, the subcommittee recessed, subject to call of the Chair.)

## APPENDIX

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(Under authority previously granted, the following communications were ordered printed in the hearing record:)

FORT MORGAN, COLO., *June 6, 1970.*

Senator GORDON ALLOTT,  
*Senate Office Building, Washington, D.C.:*

Population and industrial influx in the 6 city area north from Denver to the Wyoming line and Greeley west to Continental Divide continually increases the demand for an enormous quantity of high quality water. A dam at the Weld County site which private capital will build could provide through exchange 500 thousand acre-feet of water annually to Greeley and the neighboring cities to the west. This project was awarded a conditional storage decree in March 1970 date from July 2, 1963. Apparently you are not aware of this project and the tremendous number of people it will serve. Authorization of the Narrows project will probably be detrimental to this Weld County dam. Do you realize that more people live in Greeley alone than from the Narrows site to the Nebraska line? The Weld County site will do everything the Narrows will do plus aiding upstream users through exchange. Please note that flood damage occurs above the Narrows site or below the Narrows due to Bijou Creek joining the Platte. We urge you to reconsider your position on the Narrows project.

WELDON VALLEY PROTECTIVE ORGANIZATION, COLORADO CHAPTER,  
AMERICAN LANDOWNERS ASSOCIATION.

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STATEMENT OF MARVIN ETCHINSON, SECRETARY, WELDON VALLEY DITCH CO.

Mr. Chairman and Members of the Committee: In the matter of the proposed reauthorization of the Narrows Unit as opposed to the Weld County Reservoir counter proposal, the issue is not whether a dam and reservoir should be built on the main stem of the South Platte River, the issue is one of location of the necessary dam.

In the five years past there has been a tremendous influx of population and industry in the upper reaches of the South Platte Basin, extending from Greeley to the foothills area and from Denver to the Colorado State Line to the north. I.B.M., Eastman Kodak Company and other industrial, scientific and chemical firms are now located in this area and are employing thousands of people. It is projected that by the year 1980 Greeley, Colorado will be a city of 150,000 population. Two of the other six cities are already bigger than Greeley so that it is reasonable to anticipate that there would be proportionate growth throughout the area. As industries continue to locate in this area the increasing demand for domestic, municipal and industrial water is almost beyond estimation. No new water supply is available as the South Platte River is already many times over-appropriated.

Transmountain diversion has been exploited to the point that this source is limited. The six cities of Fort Collins, Greeley, Loveland, Boulder, Longmont, Berthoud, and Estes Park are contemplating the building of additional forebay storage reservoirs.

The logical answer is afterbay storage which could be exchanged for 100,000 acre-feet of 1900 storage decreed water:

- 417 feet direct decree 1907, Riverside Irr. Co. water;
- 450 feet direct decree 1888, Bijou Irr. Co. water;
- 165 feet direct decree 1881, Weldon Valley Ditch Co. water;
- 7000 Units of Colorado-Big Thompson water.

This exchange can not be effected by afterbay storage at lower elevation than the Weld County Project Site.

The municipalities and industries in the foothills are presently considering helping to finance the building of the Weld County Project. A dam at the Weld County site, approximately 20 miles upstream above the Narrows, will provide all the services for the area below the Narrows that are claimed by proponents of the Narrows site.

On March 19, 1970 the Weld County Project received a conditional decree for 230,900 acre feet of water as a base capacity plus and additional 119,610 acre feet of surcharge flood control safety factor capacity to date from July 2, 1963.

A dam at the Weld County site would furnish supplemental irrigation water for 60,000 acres of land that can not be serviced by a dam at Narrows. Certainly attention must be directed so that exchange of water, made possible by the Weld County Project can be effected. This exchange is imperative and necessary to the continued growth, both municipal and industrial, of Northeastern Colorado.

I request that this statement be made a part of the hearing record.

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FORT MORGAN, COLO., June 2, 1970.

HON. GORDON ALLOTT,  
U.S. Senator,  
Senate Office Building, Washington, D.C.

DEAR GORDON: My letter of May 23, 1970, rather fully explained my position on Senate Bill No. 3547, and I am enclosing copies of the two statements in opposition which are being filed with Mr. Cook, Minority Counsel, at this time. I hope you will read them and see what ghastly errors have been made by the Bureau of Reclamation and how the situation has changed in the last few years. I know you will be interested in the status of the decrees. There is so much more that could be said, and I am sure that as time goes along, you will be hearing a great deal more about the Weld County Project from the foothills people and increase of opposition to the Narrows Project.

Best regards.

Sincerely yours,

GEORGE A. EPPERSON.

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STATEMENT OF GEO. A. EPPERSON AND EARLE W. HAFFKE IN OPPOSITION TO  
S. 3547 AGAINST PROPOSING REAUTHORIZATION OF THE NARROWS UNIT,  
SOUTH PLATTE DIVISION AT THE NARROWS SITE IN MORGAN COUNTY, COLO.

On behalf of the Weldon Valley Ditch Company, Riverside Irrigation District, Riverside Reservoir and Land Company, Bijou Irrigation District and Bijou Irrigation Company and for themselves, as individuals, the undersigned do here protest the reauthorization of the Narrows Dam at the site in Morgan County, Colorado, as 1) not being in the best and greatest public interest, 2) not providing the greatest good for the greatest number of people, and 3) being in derogation of the maximum utilization and conservation of Colorado's precious and limited supplies of water.

IDENTIFICATION OF PARTIES

Weldon Valley Ditch Company, a mutual ditch company; Riverside Irrigation District, organized under the irrigation district laws of the State of Colorado; Riverside Reservoir and Land Company, a mutual ditch and reservoir company; Bijou Irrigation District, organized under the irrigation district laws of the State of Colorado, and, Bijou Irrigation Company, a mutual ditch and reservoir company, are all organizations not for profit holding early decrees for waters of the South Platte River and are actively engaged in distributing the water decreed to them to about 50,000 acres of land in Weld and Morgan Counties in Colorado for the irrigation of agricultural land. The principal office and place of business of all of these organizations is in Fort Morgan, Colorado. The Bijou System, consisting of Bijou Irrigation District and Bijou Irrigation Company, owns Empire Reservoir, Bijou Reservoir and a canal system and diverts and distributes water under storage and direct flow decrees to approximately 20,000 acres of land on the south side of the South Platte River. The Riverside System, consisting of Riverside Irrigation District and Riverside Reservoir and Land Company, owns Riverside Reservoir and Riverside Canal and diverts and distributes water under storage and direct flow decrees to approximately 22,000 acres on the north side of the

South Platte River. The Weldon Valley Ditch Company owns a diversion works and canal system and distributes water under direct flow decrees to approximately 8,000 acres of land on the north side of the South Platte River.

The five above-named organizations are also the owners in common of a conditional decree issued by the District Court in and for Weld County, Colorado, in *The Matter Of The Adjudication of Water Rights* presently pending in that Court, dated March 19, 1970, awarding them a Reservoir Priority for the Weld County Reservoir to be located on and across the channel of the South Platte River in Weld County, Colorado, at a location approximately twenty (20) miles west and upstream from the proposed Narrows site in Morgan County, Colorado. This conditional decree grants to these five organizations an appropriation of water for the reservoir for the storage of 230,900 acre feet as base capacity plus an additional 119,610 acre feet of surcharge flood control safety factor capacity to date from July 2, 1963.

The undersigned, Geo. A. Epperson, resides at 714 Sherman Street, Fort Morgan, Colorado, is a taxpayer and owner of property in Fort Morgan and has been actively engaged in the general practice of law since 1928. In his practice he has engaged in the practice of irrigation law for many years and has been retained by the Bijou Irrigation System for 35 years. He was first admitted to practice law before the Supreme Court of Nebraska and the United States District Court in Nebraska in 1928 and before the Supreme Court of Colorado in 1928, and also, before the United States District Court in Colorado.

The undersigned, Earl W. Hafke, resides at 929 Lake Street, Fort Morgan, Colorado, and is a tax payer and owner of property in Fort Morgan and has been actively engaged in the general practice of law in Colorado since 1945. He was first admitted to practice law before the Supreme Court of Nebraska and the United States District Court in Nebraska in 1935 and was admitted to practice before the Supreme Court of Colorado and the United States District Court in Colorado in 1946. He formerly served as a director of the Riverside Irrigation System and has been counsel for over 12 years last past.

Both of the undersigned have engaged extensively in problems and actions involving water and are familiar with the irrigation systems along the South Platte River from the headgate and intake of the Empire Reservoir of the Bijou Irrigation District in Weld County and on east along the South Platte River to the Nebraska line. The undersigned are familiar with the Northern Colorado Water Conservancy District, including the facilities of the Colorado-Big Thompson transmountain diversions, storage and delivery of water.

#### HISTORICAL BACKGROUND

Perhaps the location of the Narrows as a possible dam site was first mentioned around the turn of the century when some government survey party made note of it on some reconnaissance survey in the area. However, it remained in the status of a euphuistic dream until 1946 when the Congress of the United States authorized the Narrows Unit as a part of the Missouri River Basin Plan of Development which had been authorized in 1944. The original contemplated location with a dam below the confluence of the Bijou Creek and South Platte River was at what was known as the Old Fort site. This was located about four (4) miles west of the City of Fort Morgan, Colorado, and contemplated a dam four and one-half (4½) miles along one hundred eighteen (118) feet high to create a reservoir which would impound 660,000 acre feet of water at an estimated cost of \$26,000,000.00. The Bureau of Reclamation proceeded with the acquisition of some lands in lots and building sites in Fort Morgan, Colorado, and constructed homes for the use of supervisory personnel. By 1948 the serious concern of water users up and down the South Platte River matured into solid opposition to the Narrows project and violent protests expressed by letters and documents written to the United States Senators, Colorado Water Conservation Board and other persons resulted in the request for further studies as to the proper dam site.

On March 3, 1949, at a meeting held in Denver, Colorado, between Mr. Avery Battson, at that time the Director of Region Seven of the Bureau of Reclamation, and the objectors from Morgan, Weld, Logan and Sedgwick Counties in Colorado, the opposition to a Narrows dam site in Morgan County, Colorado, was so strong that Mr. Battson stated, "We'll just pack up and move".

Thereafter, Judge Stone, the then chairman of the Colorado Water Conservation Board, wrote to Mr. Battson stating that there would be no commitment for a location, operation or capacity of a Narrows Unit dam until there was complete

agreement between the State of Colorado and the Bureau of Reclamation. Following this, the United States Government and the Bureau of Reclamation disposed of all the property and facilities that had been acquired in Morgan County, Colorado, and the Narrows Unit Project was shelved and abandoned. In 1950 and 1951 there was not sufficient interest of persons in the purchase of water from a proposed site in Morgan County to justify the project and as of that time the Bureau of Reclamation admitted that water could not be exchanged for the Riverside System and the Bijou System. In 1952 the Bureau of Reclamation dropped its request for more money, moved out of the area and the Narrows Unit Project was assigned to limbo.

In the late fifties at the instigation of representatives of the Bijou System, the Riverside System and the Weldon Valley Ditch Company, interest in a dam and reservoir for main stem storage of water at a higher location upstream on the South Platte River was reactivated. Representatives of these systems actively participated in the promotion of legislation under which the Legislature of Colorado appropriated close to \$200,000.00 for the use of the Colorado Water Conservation Board for definitive studies of a reservoir at the Weld County site. Such an appropriation was made, and the Colorado Water Conservation Board did assign over \$100,000.00 of the appropriation to the Bureau of Reclamation for detailed studies to be made of the Weld County Reservoir site. While it is doubtful whether the Bureau made more than a reconnaissance study of the Weld County site with the funds provided by this appropriation, or did more than rework the information they had gathered prior to 1951 attempting to justify the Narrows site in Morgan County, a report was submitted in late 1962 or early 1963 projecting that a dam at the Narrows site to contain 1,417,000 acre feet of water would cost an estimated \$38,344,000 and a dam at the Weld County site to contain 1,107,000 acre feet of water at an estimated cost of \$45,459,000 could be built. While the Weld County site would benefit an additional fifty to fifty-five thousand acres of land in Morgan County, Colorado, which could not be benefited by the Narrows site, the justification of the Narrows site was alleged to be the increased cost of the Weld County site over that of the Narrows site, notwithstanding that the Weld County site showed a potential of 9,000 acre feet more of water available from it than from the Narrows site. (See Page 28 of the 1967 report of the Bureau of Reclamation.)

Although there were serious questions as to the credibility of the engineering and criteria used by the Bureau of Reclamation to substantiate the increased cost of a dam and reservoir at the Weld County site over one at the Narrows site, in 1963 the five organizations here objecting offered to contract to pay the difference of the \$7,000,000. Thereafter, in 1963 the five organizations here objecting employed engineers, who made independent studies, and had prepared and filed a Map and Statement of Claim in accordance with Colorado law for a dam and reservoir and appropriation at the Weld County site. In July of 1963 they also employed the International Engineers of San Francisco, California, and Wright Water Engineers of Denver, Colorado, as liaison engineers, to re-examine the feasibility of the Weld County site and the cost comparisons between the Weld County site and the Narrows site. The report of the International Engineers was submitted to the Colorado Water Conservation Board and this report suggested that the Weld County site was preferable and recommended further studies be made to verify the Bureau of Reclamation's projected costs on the Weld County site particularly as to the physical feasibility, construction costs and land acquisition costs.

Thereafter, at the request of the Colorado Water Conservation Board with substantial contribution by the five organizations here objecting to the cost of obtaining the same, Woodward, Clyde and Sherrard, an engineering firm in Denver, Colorado was employed to study the physical attributes and construction costs of the Weld County site and Justin H. Haynes and Company, an appraisal firm in Denver, Colorado, was employed to study the land acquisition costs of the Weld County Reservoir site. In the spring of 1964 the Woodward, Clyde and Sherrard report was filed with the Colorado Water Conservation Board and concluded that the preferred site for construction and efficiency was the Weld County Reservoir site. (See Page 2 of the summary of the Woodward, Clyde and Sherrard report.) The Justin H. Haynes and Company report likewise concluded the land acquisition costs were much less for the Weld County Reservoir site than for the Narrows site. (Refer to Pages 4, 5, 6 and 7 of the Justin H. Haynes and Company report.)

Prior to 1964, by resolution of the House of Representatives, all projects of the Missouri River Plan of Development upon which actual construction had not been

commenced were effectively deauthorized and further consideration for reauthorization of any such project would not be undertaken by the Congress of the United States until the proper state authority determined the site and requested the reactivation of the project. The actual selection of site for the Narrows Unit Project was not made by the Colorado Water Conservation Board until September 12, 1964. By this time the five organizations here objecting had already undertaken the initiation of an appropriation and were pursuing the obtaining of a decree for a reservoir at the Weld County site without the assistance or aid of state or federal funds.

Prior to 1969, the proposals with respect to the Narrows Unit at the Narrows site in Morgan County, Colorado, always contained flood control benefits which were envisioned by part of the project consisting of a diversion of Bijou Creek into the Narrows Reservoir. This part of the proposed project has now been eliminated and is not included in the proposed bill for reauthorization. Without the diversion of Bijou Creek into the Narrows Reservoir practically all of the flood control benefits envisioned are lost and the cost benefit ratio thus resulting are so materially affected as to make the project of questionable feasibility, if not unacceptable feasibility. To date, a conditional decree has not been entered for the Narrows Reservoir.

Not the United States government, but the Lower South Platte Water Conservancy District and Central Colorado Water Conservancy District have filed Statement of Claim in the District Court of Weld County on the Narrows Reservoir requesting a decree of 718,147 acre feet and have asked for a date earlier than the one awarded to the Weld County site. It is not known to these objectors or to the Court what amount of water is to be assigned to the respective claimants. There is a cross-assignment of interest but the claimants have refused to make known the interest of the respective parties. In addition to this, a Subordination Agreement has been entered in the evidence in which both claimants have agreed to subordinate at least 318,424 acre feet (not including the Denver decrees) to the Narrows Reservoir irrespective of the date of such subordinated decrees. The latest decree subordinated is March 22, 1968. The evidence has been taken in this case and final arguments are set for June 8, 1970. Counsel for the Weld County Reservoir is strenuously contesting any Narrow's Decree that will ante-date the decree of the Weld County Reservoir.

It is a certainty that whichever claimant receives the latest decree in this water adjudication will appeal the same to the Supreme Court of Colorado. Serious and controlling questions of law and fact are being raised and we estimate that it will not be terminated under one year from this date.

#### GEOGRAPHY AND TOPOGRAPHY

To aid in the comprehension of the proposition that a dam and reservoir at the Narrows site in Morgan County, Colorado, is not in the best and greatest public interest mention must be made of the geography and topography of the region. Reference to any good topographical map covering the area of Northeastern Colorado east of the Continental Divide and reflecting the South Platte River and all streams, watersheds and creeks tributary thereto, the existing reservoirs and lakes and their locations and the cities, particularly the foothill cities, with their current populations will quickly show the changed conditions over what existed when the definitive studies on the Narrows site were prepared. Upstream and to the west of the Narrows site are a number of new reservoirs which have been constructed, are in the process of construction or have been authorized for construction on the Platte and its tributaries. Among these is the Chatfield Reservoir on the South Platte River upstream from the City of Denver. There are also additional projects to provide forebay storage above and to provide water for the foothill cities and communities extending from Fort Collins on the north to below Boulder on the south including, but not limited to, Estes Park, Greeley, Loveland, Longmont and Berthoud, Colorado. (For convenience an old map of the Corps of Engineers, slightly modified, is attached as an exhibit.)

The Narrows site in Morgan County, Colorado, is downstream and below the reservoirs, diversion works and intake canals of both the Bijou System and the Riverside System and is also below the point of diversion for the Weldon Valley Ditch Company and calls for waters of these systems cannot be filled, by exchange or otherwise, from water which may be impounded in a reservoir at the Narrows site. The Weld County Reservoir site is upstream and above the reservoirs, diversion works and intake canals of these organizations and waters

impounded in a reservoir at the Weld County site can be delivered to answer the calls of the Bijou and Riverside Systems and the Weldon Valley Ditch Company. The Weld County site is below Greeley, Colorado, and is the only location where effective afterbay storage for the benefit of the foothill cities can be had to provide water to answer the mammoth calls of the Riverside and Bijou Systems for the waters from the South Platte River decreed to them.

That in addition to the storage in the Weld County Reservoir, the reservoirs of the Riverside and Bijou Systems will still be available to store another 100,000 acre feet of water. This would not be true of the Narrows.

The Weld County Reservoir can serve the entire area that can be served by the Narrows including 55,000 acres in Morgan County which cannot be served by the Narrows. It is axiomatic in water matters that the higher the point of storage, the better and most efficient use can be made of the waters impounded.

FACTS IN DEROGATION OF AND DIMINISHING OR DESTROYING THE NARROWS SITE AS BEING IN THE BEST PUBLIC INTEREST AND AS PROVIDING THE GREATEST GOOD FOR THE GREATEST NUMBER OF PEOPLE

The underlying issue is not whether a dam and reservoir should be built on the main stem of the South Platte River to provide for storage and additional flood control but where such a dam should be built so as to provide the greatest good for the greatest number of people. In the past five years and particularly since the Bureau of Reclamation's detailed studies and analyses on which to justify a dam at the Narrows site, there has been an astounding and ever increasing influx of population and industry in the area of the upper reaches of the South Platte River and its tributaries, primarily along the foothills and extending from Denver to the Colorado state line on the north. Such firms as I.B.M., Eastman-Kodak Company and other highly scientific and chemical firms have already located there and are now employing thousands of additional people. The best projections indicate that in the next five to ten years the increase in population in this area could be in the neighborhood of 500,000 to 1,000,000 additional persons and some estimates projection for ten to twenty years indicate there is likely to be an additional population of up to 2,000,000 people. These developments require a re-evaluation as to how the public interest will be best served by the location of a dam and reservoir on the main stem of the South Platte River. In any such re-evaluation, we think that the following facts should be considered.

1. *The massive increase and growth in population and industry above-mentioned require a great additional supply of clean and relatively unpolluted water.*

Some explanation of the means by which such an increased supply of water is available or could be obtained is warranted, but first it should be observed that the quality of water required by municipalities and industries is much higher than that required for the irrigation of agricultural lands. Another observation as to fact is that water as it comes from the mountains or through transmountain diversion is near, if not equal to, this high quality, but that if it is allowed to pass from the mountains and proceed through and across the alluvial deposits to the South Platte River, it becomes so impregnated with waste materials, soluble minerals and salts as to lose this quality, although it is still of sufficient quality to be used for agricultural irrigation purposes.

The foothill municipalities and industries have few alternatives in obtaining an additional supply of such high quality water. They may obtain such water through massive and expensive transmountain diversion facilities and forebay storage reservoirs and thus lay first claim to it by reason of having produced new water that would not otherwise be in the watershed. They may also make provision for afterbay storage at a point high enough on the South Platte River to allow them to meet the calls of downstream appropriators with senior decrees from waters they have impounded in the afterbay storage. At the present there is forebay storage available in the reservoirs of the Northern Colorado Water Conservancy District of 60,000 acre feet during the average year. These municipalities and industries are also contemplating the building of additional forebay storage reservoirs.

The existing and contemplated forebay storage could be used without new transmountain diversions if there was a supply of water in afterbay storage above the headgates of downstream senior decree appropriators so that the water called for by their decrees could be delivered from such afterbay storage. The waters of the spring runoff could then be captured and stored in the forebay reservoirs. The difficulty is that the runoff occurs annually at the same time the large and senior decrees of the Bijou System, the Riverside System and the Weldon Valley Ditch

Company must be observed and met. The result is that the runoff must be passed to meet these senior decrees and cannot be impounded for future use by the foothill municipalities and industries, nor would the construction of the Narrows relieve this situation.

The only economical and practical answer is that the afterbay storage must be built at the Weld County Reservoir site which is above the intakes and diversions of the five organizations here objecting.

II. *Clean mountain water put to a first use in the foothills area and returned to the South Platte River in a fairly unpolluted condition would provide a complete additional use of this water by those who need it within the State of Colorado.*

III. *The return flow from a first use of water in the foothills area without having to be passed to fill downstream senior decrees would stabilize the river and provide a more constant and assured supply for such downstream decrees.*

There is a vast difference between the use of municipalities and industries and the use of water for the irrigation of agricultural lands. In the latter the water is used during the crop growing season and must be available and distributed at the time the crops need it. Thus, water for irrigation of agricultural lands are used during the six month growing season extending from April through October of each calendar year and returns to the river shortly thereafter.

IV. *The municipalities and industries in the foothills area in question can afford to pay more for clean mountain waters than agricultural irrigators and they are actively considering to help in financing and building the dam and reservoir at the Weld County site to provide the afterbay storage that it is mandatory for them to have.*

The plans presently contemplated are that the municipalities and industries could raise the necessary capital to build the Weld County Dam and reservoir through private industry and municipal financing without calling for the assistance of Federal funds. Certainly it would be in the best and greater public interest if the United States Government did not have to raise, through taxation of the general public, funds to finance a project that will primarily benefit a particular small area of one state.

V. *A dam at the Weld County site would primarily inundate only grazing lands, displace relatively few persons and not materially affect the environment and ecology of that area. Whereas, a dam at the Narrows site would inundate over 8,000 acres of intensely farmed, highly productive irrigated land, displace many people, rupture the environment and seriously disrupt the ecology in its area.*

The entire area taken for the Narrows would be approximately 35,000 acres.

VI. *The recreation potential exists at both sites except that the Weld County site is considerably closer to the more dense and more rapidly expanding congregations of population.*

#### SUMMARY

It is hard to conceive any project that would be more improvident and continually detrimental to the best public interest and the greatest good for the greatest number of people than the reauthorization and construction of a dam and reservoir at the Narrows site in Morgan County, Colorado. Should such a dam be reauthorized and built, it would, as a practical matter, effectively prevent for decades the feasibility and ability within the economic reaches of the increasing population and industry of the foothills area in Colorado from building an afterbay reservoir at the Weld County site or one that could truly serve the needs of not only the irrigation interests in Morgan County, Colorado, but also of the people, municipalities and industries of the entire foothills area. If a dam and reservoir is reauthorized and built at the Narrows site in Morgan County, Colorado, or at any site not above the intakes and points of diversion of the large senior decree holders, it will inhibit and stifle the growth of population and industry for an incalculable number of years and be as a millstone around the necks of generations of people who desire to live and grow in the Colorado environment.

It is with motivations of conscientiousness, equity and the desire to provide the greatest good for the greatest number of people in the public interest that we must again urge that any reauthorization for the construction of a dam and reservoir at the Narrows site in Morgan County, Colorado, is premature and should not now, nor possibly ever, be reauthorized.

It is not the intention of the undersigned to be present at the hearings on June 10 because it is our belief that our position is fully and carefully set forth in this statement.

Respectfully submitted.

GEORGE A. EPPERSON

STATEMENT OF CECIL J. OSBORNE IN OPPOSITION TO S. 3547 AGAINST PROPOSING REAUTHORIZATION OF THE NARROWS UNIT, SOUTH PLATTE DIVISION AT THE NARROWS SITE IN MORGAN COUNTY, COLO.

My name is Cecil J. Osborne—address—727 Lake Street, Fort Morgan, Colorado; I am a general civil engineer. I number my clients as irrigation companies, cities and towns, oil companies and a multitude of individuals. I am actively engaged in problems of surface and well water diversions, facilities, municipal water and sewage problems, industrial uses and many other problems associated with water supplies, environmental problems and land use.

All of the problems usually have some interrelationship. To analyze and evaluate the solutions, I can draw upon the experience of 5 years as a highway construction engineer with a contractor—5 years as a hydrologist with the U.S. Geological Survey—28 years as manager of an irrigation district and constructing the major diversion dams in the near area from the South Platte River and the sewers, sewage treatment plants, water facilities for the villages and cities in the area.

The following statements that I make are of my own for the record, and I fully expect to live with them for I expect to stay in this area until retirement and will probably die here. This area is my home, my career and whatever I say or do to make it better is my goal. The analysis that I place upon the matter of this hearing is the result of a realistic analysis shorn of as much emotionalism as possible in my cold evaluation. My clients are divided on the question. Based upon my analysis, the Narrows in Morgan County will not be in the best public interest nor do the greatest good for the greatest number of people.

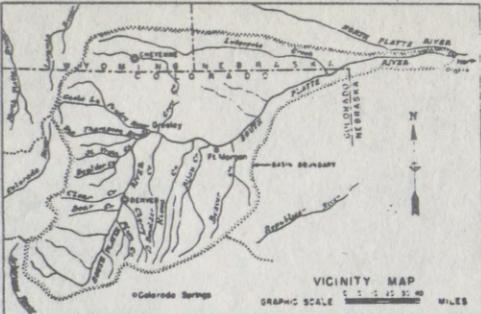
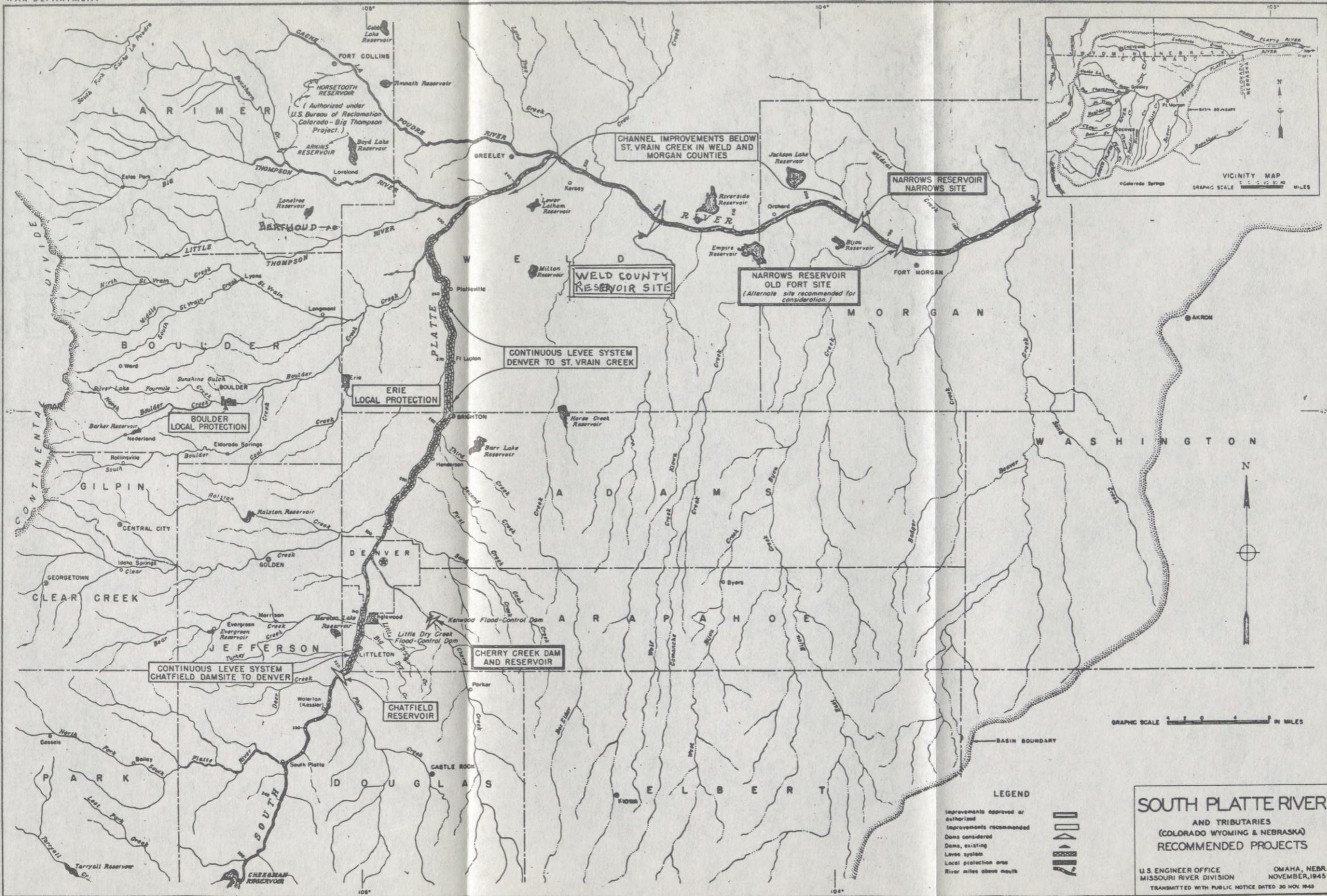
In the matter of additional storage facilities on the South Platte River, they are needed and needed badly, in two forms, both underground and aboveground. The underground is the most important because it is the most efficient. The above ground to gain the element of time necessary to transfer to the underground.

The first consideration is the hydrology. The need is here without question but the available supplies are what we have to work with and no amount of reservoirs, ditches, etc. that we might build can ever do the job without the basis ingredient—*water*.

For any project of this nature, the raw material in this case, water, must be first thoroughly and correctly evaluated. In my mind, the U.S. Bureau of Reclamation has not done this correctly. We have in this South Platte River Basin, both surface diversions and pump diversions, the latter having been developed in the past 40 years. This past decade, it has been accelerated by the perfection of the walking sprinkler. This diversion by well development now accounts for as much and for some ditch systems, more than the total diversions and why not. It is cheap, from \$2 to \$3 per acre foot; it is convenient; it is firm. In all of the South Platte River Basin below Kersey, all but 50,000 acres of irrigated land has access to the immense underground reservoir estimated to contain some 7,000,000 acre feet of water. The area is so large that a drop of 1 foot in the water table will yield 88,000 acre feet according to the U.S.G.S. Supply Paper #1378.

The evaluations of the hydrology and impact of further transmountain diversion have not been correctly evaluated by the U.S.B.R. The assumptions made are grossly in error because of the enormity of ground water use. The statement was made that after the increased importations by Denver and Aurora had been accomplished, pumping would decrease. Actually the reverse will be true, it will increase. Insofar as return flows immediately below Denver are concerned, they will increase, but they will not increase materially as far as the lower reaches of the South Platte River are concerned. It was anticipated that upon the completion of the Big Thompson project, return flows to the Lower South Platte would be greatly enhanced. We are now recording new lows for the Twentieth Century at many points along the Lower South Platte River. Without going any further with the details of the analogy how can we expect that a volume of  $\frac{1}{2}$  of the Big Thompson importation can be used and the return flow pass across more miles of thirstier land with better aquifers and a motivation for development on account of proximity to a larger population center and end up in the Lower South Platte with volumes such as the U.S.B.R. state there will be.

No consideration has been given to the fact that when many of the records were made, there was but little pumping on Boxelder, Bijou, Kiowa, Beaver and Pawnee Creeks. In the natural state there was an overflow reaching the Platte River from the underground stream below these Creeks. I have personally seen the rise of a civilization based upon this underground stream, and I am now seeing the decline and eventually will see the fall of this civilization because all the water will have



**SOUTH PLATTE RIVER  
AND TRIBUTARIES  
(COLORADO WYOMING & NEBRASKA)  
RECOMMENDED PROJECTS**

**LEGEND**  
 Improvements approved or authorized  
 Improvements recommended  
 Dams considered  
 Dams, existing  
 Levee system  
 Local protection area  
 River miles above mouth



U. S. ENGINEER OFFICE  
 MISSOURI RIVER DIVISION  
 TRANSMITTED WITH PUBLIC NOTICE DATED 30 NOV 1945  
 OMAHA, NEBR.  
 NOVEMBER, 1945

NO. 10  
1870

been mined. In so doing, the flow in the South Platte River must be diminished by at least the volume of the original natural overflow. Along the main valley of the Platte itself more and more pumps are being installed for many reasons, some for supplemental water on the individual farm because the main canal will not supply enough water at the time of need, some because of loss of Decrees, some to operate sprinklers, some for additional land and some because it is more economical to pump than to maintain ditches. The result has been that today it can almost be said that the ditches are supplemental to the pumps instead of the pumps being supplemental to the ditches. By Colorado State law and by District Court decision, the augmentation of surface flows by the use of underground water by pumping of those people short of surface supplies has been made legal for all ditches as an alternative source of supply. The impact of this decision is yet to be felt.

The matter of cost if all direct diversions were pumped, of 393,000 acre feet is analyzed by Mr. J. M. Dille in his paper entitled, "South Platte Water Supplies". It would require approximately 800 wells at \$6,000 average cost each, \$4,800,000 total capital cost. My records indicate that the energy cost would be about \$1.00 per acre foot, or an annual charge of \$393,000.00. If we went further and pumped the 240,000 acre feet of shortages which the Bureau of Reclamation states and with which I maintain are much too high, (based upon my observation of traveling the length and breadth of the valley for the past 28 years, I have only noted distress of crops under 3 irrigation systems and these systems, unfortunately, do not lie over the alluvial aquifer of the South Platte River and an addition, with the exception of one, are most junior in point of time under the Colorado Doctrine of "first in use, first in time") only 600 more wells would be required at a cost of \$3,600,000, with an operating cost of \$240,000 per year. To the above operating cost, there must be added the depreciation factor considering a 20 year life of the wells of \$420,000 annually, or a total annual cost of \$1,413,000, if every drop of irrigation water had to be pumped. This, of course, is absurd since there will always be some flow in the river. The present actual consumptive use of water that is actually consumed by evaporation and transpiration of a growing crop is about 1 acre foot per acre per year, anything more than that amount, if applied to the land, will return eventually to the river, therefore, as a consumptive use on the 166,000 acres of land that U.S.B.R. proposes to supplement can only in the end consume 166,000 acre feet of the average annual flow at the Kersey Gauging Station, there will always be some flow and in many years, but little supplemental pumping would be required. In addition, the farm efficiency of utilization is improved. In terms of capital and operations, this would be the cheaper and certainly the most reliable and the most efficient method of obtaining needed agricultural water. The construction of this dam for agricultural purposes, with the attendant increased losses of evaporation is simply perpetuating an inefficient use of water. The use of the underground reservoir is efficient, and it is already made. Unfortunately, the operation of the two different systems of diversion results in the surface diversions being shorted in lean water years.

Let us now examine the water supplies that the U.S. Bureau of Reclamation has projected for this reservoir. They claim they have as an average, 119,000 acre feet annually, in which is included *32,900 acre feet of Weldon Valley water* which will be acquired when the land is taken for the reservoir.

There is an element that can be a slip between the cup and the lip. This water is not tied to the land, many of the owners have other lands susceptible to irrigation above the reservoir and at least, some will simply transfer the rights to this already owned land. The remainder, even if acquired, will not have the same value when impounded or sold to some other diverters below the reservoir. Many individuals and municipalities after Court proceeding discovered that the net diversions permitted after the change in point of diversion and use actually obtained only a fraction of the original decree. In almost all cases and especially in the one I was involved as a professional witness in Bonny Dam area wherein a transfer of 7 c.f.s. from a decree at the upper end of the pool area when transferred to the outlet of Bonny Dam was cut to 1½ c.f.s. The basis of the cut being that the net consumptive use was only that amount and the benefits of the return flow of the overuse properly accrued to the downstream appropriators. With this as a basis, it is highly unlikely that much over 1 acre foot of water per irrigated acre annually can be claimed or not over 7,000 acre feet instead of the 32,900 acre feet in the projected water supplies. By still another Court decision in the State of Colorado, waters escaping from a reservoir by seepage are from the moment of escape a part of the river and are subject to appropriation by downstream users. The use of Jackson Lake as a recreation lake with the seepage estimated at 11,000 acre feet

annually could not be claimed by Narrows Reservoir, but is the property of downstream users in order of priority.

There is approximately an average of 85,000 acre feet of flood flows that can be utilized for Narrows Reservoir, but in 3 years of a 15 year period, there would be no water for the prospective users. The analysis of International Engineers, when I presented a storage plan similar to them, and in which the 3 year hiatus appeared, was just simply "you have no project."

Since this is a multipurpose project with every conceivable benefit claimed to rationalize the cost, mention should be made of the recreation features. At this point, it should be made clear that the only water for recreation purposes in Jackson Lake will be from flood flows under Colorado law which at present does not recognize recreation as a beneficial use. Considerable effort has been made to evaluate these benefits. My observation has been that 8,000 acres of irrigated land @ \$150 per acre benefit per year or \$1,200,000 outweighs all the benefits attributed to this factor. Please note also that there is a loss to some factors of hunting and duck propagation which is not deducted in Table No. 25. but mentioned in the substantiating report on page 10 of Appendix of Report by U.S. B.R. dated January, 1967.

It should be noted that all through the report, all benefits are claimed but in no place is there a debit shown. In my experience, no project was all credit.

Flood control is, of course, of concern to all of us. We, however, want it to be effective. A brief resume of the flood problem is in order.

The largest flood of record that Narrows Reservoir will control is the 31,000 c.f.s. occurring in the South Platte River in the year 1921.

The area needing flood protection does lie below Narrows Dam, but Narrows Dam will not do very much good.

Twice in my lifetime and to which I was an eyewitness, in 1935 and in 1965, there is a tributary known as Bijou Creek, flowing into the South Platte River some 3 miles below Narrows Dam that disgorged 275,000 c.f.s. in 1935, and in 1965, disgorged 466,000 c.f.s. into the Platte River or 15 times the maximum known flood in the South Platte River that Narrows Dam will control. At first, the U.S. Bureau of Reclamation planned to cut Bijou Creek into the reservoir and sold the plan to the area below Bijou Creek. The enormity of the 1965 flood showed that the engineering problems to do this were impractical, so the control of Bijou Creek was not included in the 1967 report.

This writer, time after time, apprised the Bureau of the facts. It was most gratifying that the Corps of Engineers have made a study of this problem, have made recommendations that do meet this problem. At hearings last fall, an almost unanimity of opinion supported the Corps. They do have a good plan and if this is carried out, the need of Narrows or any other reservoir for flood control of the South Platte River after Chatfield, Mount Carbon and St. Vrain, possibly Poudre River, have the protective dams, and they will come since population densities in those areas will not only demand, but will get them by sheer political clout, thereby eliminating the need of flood control features.

Bijou flood control dams on Bijou Creek should be authorized and built and before channel storage on the South Platte River is authorized. I do not know and the letter of transmittal from the Corps for the 1967 U.S.B.R. report does not reveal if there has been a change in allocation for flood control to Narrows in view of this letter and certainly change is the desirability of where flood control should be. I respectfully ask the committee to inquire into this aspect.

The Bureau did not select the best site from a geologic standpoint or a seepage standpoint.

Woodward, Clyde and Sherrard Report:

"SUMMARY"—PAGE 2

"(1) Seepage analysis of the proposed lower Weld County site indicates an expected loss of 31 cubic feet per second with no cutoff beneath the dam as compared to 40 cubic feet per second at the Narrows site with a 5,000 foot upstream blanket. The upper Weld County site offers the possibility of an essentially complete cutoff of reservoir seepage and of South Platte underflow, if desired. Such an opportunity does not exist at the Narrows site.

"(2) Impervious materials are available within 7 miles for the lower Weld

County site, and within 1 mile at the Narrows site. The cost of overhaul for the Weld site will depend on the design volume of the impervious section and could be minimized by constructing a thin impervious core.

"(3) Comparative estimates of construction costs for Narrows as compared to Weld County should be made, using the data obtained in these investigations.

"(4) It is our general opinion, from the engineering and geologic viewpoint that the Weld site is superior to the Narrows site."

They state that one site would have to have a complete cutoff, the Narrows site did not. Result—40 c.f.s. saving in seepage. 29,600 acre feet of water per year or a 25% larger effective reservoir as far as utilization is concerned. They did not select the most economical site for right of way costs in terms of either money, displacement of fewer people and disruption of communities.

Justin Haynes and Company Report, pages 4, 5, 6, and 7:

## SUMMARY—NARROWS SITE

Number of parcels:		
Rural	-----	278
Urban	-----	150
Total	-----	428
Total areas (acres):		
Fee taking	-----	18,740
Flood easements	-----	6,060
Subtotal	-----	24,800
Severed	-----	2,580
Total	-----	27,380

Land by class	Taking	Acres easement	Severed
Irrigated:			
Class I	620		
Class II	2,520	140	
Class III	2,860	860	
Class IV	890	460	
Sprinkler irrigated	120	640	
Irrigated hay meadow	670	200	
Subirrigated meadow	1,390	420	
Dry farm	560	415	
Grazing	5,840	2,680	
River bottom	3,245	230	
Urban and tracts	25	15	
Total	18,740	6,060	2,580

Estimate of value of taking and damages	Land	Improvements	Total
Rural properties:			
Fee taking	3,950,000	593,000	4,543,000
Flood easements	540,000	78,000	618,000
Subtotal	4,490,000	671,000	5,161,000
Severance damages			81,000
Total			5,242,000
Urban properties:			
Fee taking	43,000	383,000	426,000
Flood easements	14,000	105,000	119,000
Total	57,000	488,000	545,000
Recapitulation:			
Fee taking	3,993,000	976,000	4,969,000
Flood easements	554,000	183,000	737,000
Subtotal	4,547,000	1,159,000	5,706,000
Severance damages			81,000
Total			5,787,000

## SUMMARY—WELD COUNTY SITE

Number of Parcels:		
Rural	-----	112
Urban	-----	12
Total	-----	124
Total areas (acres):		
Fee taking	-----	18,590
Flood easements	-----	4,960
Subtotal	-----	23,550
Severed	-----	13,100
Total	-----	36,650

Land by class	Taking	Acres easement	Severed
Irrigated:			
Class I	205	335	
Class II	2,150	915	
Class III	1,400	750	
Class IV	260	85	
Sprinkler irrigated		160	
Irrigated hay meadow	740		
Subirrigated meadow	1,640	45	
Dry farm	90	10	
Grazing	8,990	2,265	
River bottom	3,110	385	
Urban and tracts	5	10	
Total	18,590	4,960	13,100

Estimate of value of taking and damages	Land	Improvements	Total
Rural properties:			
Fee taking	\$2,109,000	\$414,000	\$2,523,000
Flood easements	759,000	217,000	976,000
Subtotal	2,868,000	631,000	3,499,000
Severance damages			185,000
Total			3,684,000
Urban properties:			
Fee taking	1,000	11,000	12,000
Flood easements	2,000	52,000	54,000
Total	3,000	63,000	66,000
Recapitulation:			
Fee taking	2,110,000	425,000	2,535,000
Flood easements	761,000	269,000	1,030,000
Subtotal	2,871,000	694,000	3,565,000
Severance damages			185,000
Total			3,750,000

I do not know how to evaluate the cost in terms of human unhappiness to displace 172 homes under the guise of the necessity to provide supplemental water to 1548 farms as tabulated in the 1967 report in Table No. 20, Page 82. This is just a little more than a decimation. It should also be remembered that only a few of the 1548 farms will need to participate which further increases the inequity.

In terms of land—Narrows requires the taking over of 9070 acres for reservoir and in terms of irrigated farmland, irrigated and sub-irrigated meadows as compared to 6395 acres for Weld County. In round numbers almost 3000 acres less of productive lands.

In terms of parcels—428 for Narrows—124 for Weld County.

In terms of homes—172 for Narrows—38 for Weld County.

In terms of lost annual production at least \$2,000,000 more for Narrows than for Weld County. 50 yrs.—\$100,000.00.

They did not select a site that would serve the most people. Two large and one small irrigation company evidenced by Board resolutions that they would pay the difference of some \$7,000,000 when the Bureau estimated the cost of Narrows at \$38,000,000 and Weld County at \$45,000,000, which could have been paid from increased efficiency of storage in the Weld County Reservoir site and the savings in O & M of maintaining 3 headgate keepers and houses, 3 sets of diversion works, 30 miles of canals and 7 miles of reservoir dikes over the 50 year repayment period.

They did not select the site that offered the most utilization of water. By their own studies, they show a potential of 9,000 acre feet more at Weld County than at Narrows, Page 28—1967 report. 10% more water should have justified 10% increased cost. This writer believes the utilization is much more plus the seepage loss pointed out above making this reservoir  $\frac{1}{3}$  more effective.

There is a rather peculiar and somewhat baffling development that occurred between September 1964 and 1965 when evaluating the cost of the Narrows Dam. In September, 1964, the estimated cost of Narrows was placed at \$46,000,000 to compare with \$69,000,000 of the Weld County site. Yet, 1964 prices, when it appeared Narrows was definitely selected, the price tag on Narrows moved up to almost \$62,000,000. The price tag is now \$68,000,000. The answers to this probably will never be made public. It sure would be nice to know. The present credulity is certainly strained as to the various rationalizing that was publicized.

As time goes on and needs arise for more municipal and industrial waters, not only in the upper reaches of the South Platte River, but also in the lower reaches, some thinking should be done in how to keep separate the low mineral content of the mountain waters used for domestic and industrial purposes before they have become less desirable or unusable after intermingling with the heavily mineral laden return flows into the Platte River and still afford agriculturally suitable water. The Bureau studies make no mention of how this can be done or what is needed to accomplish the fact.

For the reasons set forth in this memo, I respectfully request that the Bill re-authorizing the Narrows Dam No. S. 3547 be not recommended by this Committee not passed by the Congress.

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FORT MORGAN, COLO., June 2, 1970.

Re Narrows project, Colorado.

HON. GORDON ALLOTT,  
U.S. Senator, Senate Office Building,  
Washington, D.C.

DEAR GORDON: Enclosed you will find a copy of the statement of the North Kiowa Bijou Management District addressed to the Committee on Interior and Insular Affairs in regard to the Narrows Project. Mr. Richardson, the president of the district, appeared in person at the House Hearing and, of course, while the district is not opposing the Narrows Project, it does desire to take this means of apprising all concerned that certainly the flood control of Bijou Creek, as presently being considered by the Corps of Engineers is an indispensable adjunct to many on stream dams on the Platte River.

It is my understanding that the Corps of Engineers should have something definite on the Bijou study within probably the next month or two and I urge your attention and continued interest in the Bijou Creek Basin Project of the Corps of Engineers. If, from the statement, or other information, you have any further questions concerning the North Kiowa Bijou Management District's position in this matter, please feel free to contact me.

Sincerely yours,

DONALD F. McCLARY

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NORTH KIOWA BIJOU MANAGEMENT DISTRICT,  
June 1, 1970.

Re Narrows project, Colorado.

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

GENTLEMEN: The undersigned, Donald C. Richardson, president of the North Kiowa Bijou Management District, for and on behalf of the said district, respect-

fully submits the attached statement to be used in connection with congressional consideration of the Narrows-Project—Colorado. The attached statement is for the purpose of stating the paramount need of Bijou Creek flood controls in connection with any proposed Narrows Project.

Yours very truly,

DONALD C. RICHARDSON, *President.*

#### STATEMENT OF NORTH KIOWA BIJOU MANAGEMENT DISTRICT

The North Kiowa Bijou Management District on behalf of the Directors of the said District and the taxpaying electors within the boundaries thereof desires to take this means to state its position in connection with the Narrows Project as presently proposed.

The North Kiowa Bijou Management District is a governmental subdivision of the State of Colorado formed under the laws of that State, pursuant to election by the landowners within said District. Pursuant to the Ground Water Act of the State of Colorado, the Ground Water Commission of the State created the Kiowa Bijou Basin which encompasses the area of the Kiowa and Bijou Creek from its inception in the Black Forrest near Colorado Springs, Colorado, to approximately the confluence of Bijou Creek with the South Platte River. The District itself encompasses an area 28 miles in width and 48 miles in length in the Kiowa-Bijou Basin, the southern boundary being the southern boundary of the Arapahoe County line and the Northern boundary being the northern boundary of the Basin near Wiggins, Colorado. Since the formation of the District in 1967, the directors of the District and the farmers, ranchers and landowners within the boundaries have been constantly concerned with the necessity of flood control on the Bijou Creek and its tributaries. Even though the District's official concern arose at its inception on March 15, 1967, the same farmers and ranchers of the area have for many years prior thereto been closely involved and concerned with this problem. The ranchers and farmers in the Bijou Creek Basin have from the time of the first suggestion of a Narrows Project in the early 1940's, appeared at numerous hearings and repeatedly made known their requests for upstream flood control on Bijou Creek and their position that no onstream flood control on the South Platte River should be instituted until this solution of the Bijou Creek flood problem.

Since its original settlement, the Bijou Creek has experienced numerous floods. Major floods occurred in the years 1878, 1935, 1951 and 1965, and the less serious floods, although also damaging, occurred in the years 1888, 1894, 1905, 1921, 1933, 1938, 1939 and 1957.

The most recent and serious flood on the Bijou Creek was in 1965, at which time the official records showing a peak discharge of 466,000 cubic feet per second, into the South Platte River from Bijou Creek, which volume of water was a major factor in the destructive rampage of the river below the mouth of Bijou Creek. It is important to note in this regard that the present discharge of Bijou Creek in its normal bank into South Platte River is downstream of the location of the proposed Narrows Reservoir. As stated by the U.S. Army of Engineers, District of Omaha, in recent publication concerning the flood problem of Bijou Creek, the Corps stated as follows:

"Since 1878, Bijou Creek has experienced flooding at least 12 times. The most serious flood occurred in 1965, when two lives were lost. Flood damages within the basin totaled more than \$13 million. This same flood caused about \$32 million in damages along the South Platte River downstream from Bijou Creek. About 156,000 acres of land in the Bijou Creek basin and 168,000 acres of land along the South Platte River are subject to flooding from Bijou Creek flows.

"Floods in the basin have also caused serious erosion and sedimentation problems. Sediment deposits on flood plan lands have reduced the productive capacity of affected farmlands. Transportation facilities have also sustained substantial flood damage."

As part of this statement, your attention is directed to the "Congressional Record" of March 4, 1970, in connection with the introduction of S. 3547—Introduction of a Bill Relating to Narrows Project, Colorado. The said "Congressional Record" contains a discussion of the development and interrelationship between Bijou Creek and the Narrows Project. It refers to a similar measure in the 90th Congress, S. 3561 introduced May 28, 1968, referring to inclusion of

Bijou Creek in the Narrows Project, unless the Chief of Engineers Department of the Army shall certify to the President and to the Congress by July 1, 1970, that he recommends a more feasible plan for flood control on Bijou Creek drainage. As further indicated therein, there is no local nor State support for any diversion channel and that the sentiment of the local people, the State, the Bureau of Reclamation and the Corps of Engineers appears to be overwhelming against any thought of a diversion channel. S. 3574 introduced March 4, 1970, in connection with the Narrows Project has no reference to Bijou Flood Control. The obvious concern of the entire Bijou Creek Basin and the Lower South Platte Basin is that on one hand, everyone recognizes the paramount importance of Bijou Creek Flood Control in the South Platte Valley; yet, on the other hand, request is made for an onstream dam for flood control prior to the adoption and assurance of this recognized first step of upstream flood control. This conflict is readily apparent in the statements and letters of interested persons and official bodies which are included in and made a part of the "Congressional Record" of March 4, 1970. Your attention is directed to the following interested persons and official bodies who have made statements and letters which are included as a part of the said "Congressional Record":

Mr. F. A. Mark—State Conservationist.

Maj. Walter R. Torkarz—Corps of Engineers.

Mr. Donald F. McClary—Attorney for the North Kiowa Bijou Management District.

Mr. Donald C. Richardson—Pres. of North Kiowa Bijou Management District.  
Colorado Water Conservation Board—State of Colorado.

Col. W. H. McKenzie, III—Corps of Engineers.

Mr. Thomas H. Bradbury—Byers, Colorado.

Mr. Marvin W. Etchison—Weldona, Colorado.

Mr. Ralph E. Varner—City Supt. of the City of Fort Morgan, Colorado.

Mr. Harold E. Taylor—Weldon Valley Protective Organization.

Col. B. P. Pendergrass—Corps of Engineers.

Resolution adopted by the Weldon Valley Ditch Co. May 5, 1969.

Resolution adopted by the City Council of Fort Morgan April 1, 1969.

Resolution of the Colorado Water Conservation Board.

There is an apparent confusion in regard to the Bureau of Reclamation studies in connection with the Bijou Creek flood problems as they affect the Narrows Project. On September 12, 1964, when the site for the Narrows Dam was selected by the Colorado Water Conservation Board and approved by the Bureau of Reclamation, the project did not include any control for Bijou Creek and the present bill for re-authorization still does not include any control of Bijou Creek. Previous to the 1965 flood, the Bureau was apparently of the opinion that its earlier reconnaissance for diverting Bijou Creek into the Narrows project had an unsatisfactory cost benefit ratio, but at a later date and following the flood, it was thought to be feasible because of the frequency of flooding in the Bijou. It was reported by Mr. Droskin on behalf of the Bureau immediately following the 1965 flood, that the matter of the Bijou Flood Control and its inclusion in the Narrows project was again being studied. It appeared at the time, that it would be necessary to provide an additional sediment control by approximately 150% greater than previously planned. At this time, the Lower South Platte Water Conservancy District suggested that the Army Corps of Engineers reconsider its Bijou Flood Control project.

Following this turn of events, the Corps of Engineers reactivated its study of Bijou Flood control which plan involved upstream dams on Bijou Creek itself. The North Kiowa Bijou Management District, with the assistance and cooperation of the Lower South Platte Water Conservancy District, proceeded to encourage the Corps of Engineers to develop such a plan. The assistance of the Lower South Platte Water Conservancy District in this matter is greatly appreciated in the Bijou Creek area. Following some additional study by the Corps of Engineers, a preliminary report was offered by the Corps in the latter part of 1969, which states that its studies indicate that the plan of improvement by upstream flood control is technically and economically sound. The North Kiowa Bijou Management District endorses the general plan of the Corps of Engineers and is extremely desirous of its final adoption and approval.

The plan as developed by the Corps of Engineers is the most beneficial and sensible plan for control of the Bijou Creek flood problem. However, it appears to the North Kiowa Bijou Management District that this solution of the flood

problem as proposed by the Corps of Engineers must, of necessity, be authorized or guaranteed simultaneously with or prior to the Narrows project. That the Corps of Engineers during its studies has on numerous occasions stated that the Bijou Creek rather than the South Platte River is the villain in creating flood damage in the South Platte River below its confluence. However, as late as March, 1969, it was reported by Mr. Droskin from the Bureau that the further added cost of channelizing the Bijou floods into the Narrows would make the project infeasible under any rate above 4 $\frac{5}{8}$ %. Since this date, it has become increasingly apparent that channelizing of the Bijou into the Narrows is out of the picture.

The North Kiowa Bijou Management District on its own behalf and on behalf of all the farmers and ranchers in the area, as well as those farmers, ranchers and municipalities downstream having suffered great and irreparable damages from these Bijou Creek floods, most earnestly ask and request that the problem of the Bijou Creek flood control be given its proper place as one deserving paramount consideration for solution on the problems of the South Platte Valley. That under the circumstances as outlined in this statement, however briefly, Congress should not permit authorization of onstream dams for flood and storage to divert its attention from the solution of the major problem of Bijou Creek Flood Control. The people in the area are frankly concerned that this problem may be lost or forgotten if definite steps are not taken to assure its development in connection with any South Platte River control project.

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RICHARD WEINGARDT & ASSOCIATES, CONSULTING ENGINEERS,

June 8, 1970.

Hon. GORDON ALLOTT,  
U.S. Senate,  
Washington, D.C.

SIR: We are happy to hear that the House Interior Committee recently approved a bill to reauthorize the Narrows unit of the Missouri River Basin Project in Northwestern Colorado. The Project will be a most useful irrigation and flood control system in our area.

Very truly yours,

RICHARD WEINGARDT, P.E.

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RESOLUTION SUPPORTING AUTHORIZATION AND CONSTRUCTION OF THE NARROWS UNIT, COLORADO, SOUTH PLATTE DIVISION MISSOURI RIVER BASIN PROJECT

Whereas, the Flood Control Act of 1944 (58 Stat. 887) as supplemented and extended by the Flood Control Act of 1946 (60 Stat. 641) authorized a general comprehensive plan for the conservation, control, and use of the water resources of the Missouri River Basin; and

Whereas, the Narrows unit is an integral part of the Missouri River Basin Project which, following exhaustive studies and investigations by the Bureau of Reclamation, has been found to be engineeringly and economically justified as evidenced by the Agency's Report entitled "Report on the Narrows Unit, Colorado, South Platte Division, Missouri River Basin Project," dated January 1967 and which report, together with the "Re-evaluation Statement, Narrows Unit, Colorado," dated May 1969, Revised November 1969, has been approved by the Secretary of the Interior; and

Whereas, the Board of County Commissioners, Sedgwick County, Colorado is interested in and supports full multiple purpose water resource developments within the State of Colorado as a whole; and

Whereas, the Narrows unit will provide both direct and indirect benefits to the people of the South Platte River valley through flood control, through increase in the total available water supply, and through the development much needed recreation opportunities; and

Whereas, the members of the Board recognize the beneficial economic impact that the Narrows unit will have on Sedgwick County as well as the State of Colorado;

Now, therefore, be it resolved That the Board of County Commissioners of Sedgwick County, Colorado, sincerely and respectfully petition and urge the Congress of the United States to promptly consider and take favorable action on H.R.

6715, 91st Congress, 1st Session, and on S. 3547, 91st Congress, 2nd Session, legislation authorizing the construction and operation of the Narrows unit, Colorado, as set forth by the Bureau Reclamation Report, and urge the full development of the Unit at an early date; and

Be it further resolved that a copy of this resolution be submitted to the Chairman of the House Committee on Interior and Insular Affairs, the Chairman of the House Subcommittee on Irrigation and Reclamation, the Colorado Congressional delegation, the Governor of the State of Colorado, the Colorado Water Conservation Board, and the Board of Directors, Lower South Platte Water Conservancy District.

I hereby certify that the foregoing resolution was unanimously approved and adopted at the meeting of the Board of County Commissioners, Sedgwick County, held in Julesburg, Colorado on May 4, 1970.

BOARD OF COUNTY COMMISSIONERS, SEDGWICK COUNTY, COLO.,  
JAMES STRETESKY, *Chairman.*  
L. E. GERBER, *Clerk.*

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