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KENNEWICK EXTENSION AND TOUCHET
DIVISION, WASHINGTON

GOVERNMENT

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HEARING

BEFORE THE

SUBCOMMITTEE ON
WATER AND POWER RESOURCES

OF THE

COMMITTEE ON
INTERIOR AND INSULAR AFFAIRS

UNITED STATES SENATE

NINETY-FIRST CONGRESS

FIRST SESSION

ON

S. 742

A BILL TO AMEND THE ACT OF JUNE 12, 1948 (62 STAT. 382),
IN ORDER TO PROVIDE FOR THE CONSTRUCTION, OPERA-
TION, AND MAINTENANCE OF THE KENNEWICK DIVISION
EXTENSION, YAKIMA PROJECT, WASHINGTON, AND FOR
OTHER PURPOSES

AND

S. 743

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR
TO CONSTRUCT, OPERATE, AND MAINTAIN THE TOUCHET
DIVISION, WALLA WALLA PROJECT, OREGON-WASHINGTON,
AND FOR OTHER PURPOSES

MARCH 4, 1969



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KENNEWICK EXTENSION AND TOUCHET DIVISION, WASHINGTON

TUESDAY, MARCH 4, 1969

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

The subcommittee met, pursuant to call, at 10:10 a.m. in room 3110 New Senate Office Building, Senator Henry M. Jackson (chairman of the committee) presiding.

Present: Senators Henry M. Jackson (Washington), Quentin N. Burdick (North Dakota), Gordon Allott (Colorado), Len B. Jordan (Idaho), Clifford P. Hansen (Wyoming), and Mark O. Hatfield (Oregon).

Also present: Jerry T. Verkler, staff director; Stewart French, chief counsel; Charles Cook, minority counsel; and Daniel A. Dreyfus, professional staff member.

The CHAIRMAN. The committee will come to order.

The purpose of this hearing before the Water and Power Resources Subcommittee this morning is to take testimony on S. 742 and S. 743, cosponsored by Senator Magnuson and myself.

S. 742 is a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Kennewick Extension of the Yakima reclamation project.

S. 743 is a bill to authorize the Touchet division of the Walla Walla project. Both proposals are multipurpose water resource developments located in the State of Washington.

The Senate has previously passed measures to authorize the Kennewick Extension in the 88th, 89th, and 90th Congresses and measures to authorize the Touchet division in the 89th and 90th Congresses. Action has not been completed in the House.

The text of S. 742 and S. 743 and the 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. 742, 91st Cong., first sess.]

A BILL To amend the Act of June 12, 1948 (62 Stat. 382), in order to provide for the construction, operation, and maintenance of the Kennewick division extension, Yakima project, Washington, 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 Act of June 12, 1948 (62 Stat. 382), is hereby amended as follows:

(a) Insert the words "and Kennewick division extension", after the words "Kennewick division" in section 1 and add the following items to the principal units listed in said section: "Kiona siphon" and "Relift pumping plants".

(b) Insert at the end of section 3 the following: "Costs of the Kennewick division extension allocated to irrigation which are determined by the Secretary to be in excess of the water users' ability to repay within a fifty-six-year repayment period following a ten-year development period, shall be charged to and returned to the reclamation fund in accordance with the provisions of section 2 of the Act of June 14, 1966 (80 Stat. 200), as amended by section 6 of the Act of September 7, 1966 (80 Stat. 707): *Provided*, That section 5 of this Act shall not be applicable to the revenues derived from the Federal Columbia River power system. Power and energy require for irrigation water pumping for the Kennewick extension shall be made available by the Secretary from the Federal Columbia River power system at charges determined by him."

SEC. 2. No water shall be delivered to any water user on the Kennewick division extension for a period of ten years from the date of enactment of this authorizing Act 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. 3. There are authorized to be appropriated for the new works associated with the Kennewick division extension \$5,352,000 (October 1966 prices) plus or minus such amounts, if any, as may be required by reason of changes in the cost of construction work of the types involved therein, as shown by engineering cost indexes, and, in addition, such sums as may be required to operate and maintain the extension.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., March 3, 1969.

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. 742, a bill "To amend the Act of June 12, 1948 (62 Stat. 382), in order to provide for the construction, operation, and maintenance of the Kennewick division extension, Yakima project, Washington, and for other purposes." This bill is identical to S. 370, 90th Congress, as passed by the Senate on March 6, 1967.

We recommend enactment of the bill with the amendment set forth herein. S. 742 would authorize the Secretary of the Interior to construct, operate, and maintain a 6,300-acre extension of the irrigation development of the Kennewick division, Yakima project, Washington. This would be accomplished through appropriate amendments to the Act of June 12, 1948 (62 Stat. 382), which authorized the Kennewick division. The bill provides that financial assistance from Federal Columbia River Power System (F.C.R.P.S.) revenues shall be available to repay costs allocated to irrigation which are beyond the ability of the water users to repay.

The existing Kennewick division serves about 19,000 acres of land. Section 6 of the Act of June 12, 1948, authorized the Secretary of the Interior to construct extra capacity in the division's main canal to provide for the future irrigation of approximately 7,000 acres of land in addition to the then proposed development, and to recognize the cost of providing such capacity as a deferred obligation to be paid at such time as the additional area was brought into the project. The main canal was constructed with extra capacity at a cost of \$341,400, which has since been carried as a deferred obligation.

The Kennewick division extension would utilize the extra capacity thus provided, together with additional works which would be constructed, to deliver an irrigation water supply to the 6,300 acres of extension lands. Specific new works required are a hydraulic pump at the Chandler pumping plant to lift additional water into the main canal, through which the water would flow for 6.7 miles. There it would be diverted into the Kiona siphon, which would carry the water 5,800 feet across Badger Draw to the extension lands. The plan described in the feasibility report (H.R. Doc. No. 296, 88th Cong., 2d Sess. (1964)) has been modified to encompass a closed-pipe system of mains and laterals to distribute water to the lands. An agricultural drainage system, relief pump plants, and electrical transmission facilities to serve the pumping in-

stallations are the remaining new facilities required. Power and energy for irrigation water pumping for the extension will be made available from the F.C.R.P.S. at charges determined by the Secretary of the Interior.

Most of the lands of the Kennewick division extension are presently dry. About 100 acres of the best lands have been planted to dry land wheat. The balance supports only sage brush and native grasses used for livestock grazing. Under project development the primary land use expected would be for growing feed and general row crops. Lesser acreages of fruit and specialty crops—grapes, sweet cherries, prunes, peaches, apricots, mint, and asparagus—would also probably be produced. The soil and climate are well suited to all the foregoing crops.

The Kennewick Irrigation District has long been interested in full development of the irrigable lands in the area. The district supported development of the entire area when the Kennewick division lands were brought under irrigation. Nearly all the lands in the extension have been in the district for many years.

The Kennewick division extension is basically an irrigation development, but benefits to wildlife resources will also be realized. The Fish and Wildlife Service reports that irrigation of these lands will be beneficial to upland game birds. Opportunities to develop significant benefits to recreation, flood control, municipal and industrial water supply, or other purposes are not available.

The total investment in the Kennewick division extension would be \$7,554,700, reflecting an updating of the cost estimate in the feasibility report cited above which was \$5,250,400 (January 1962 prices). This current estimate is made up of \$6,735,000 in construction costs (January 1969 prices); \$341,400 in deferred costs of the Kennewick division attributable to enlarged main canal capacity and assignable to the division extension; \$189,000 for the extension's pro rata share of storage costs of the Yakima project; \$30,000 for settlers' assistance, and a \$259,300 suballocation of the commercial power allocation of the F.C.R.P.S. costs to irrigation. On the basis of the current analysis, the benefit-cost ratio would be 2.8 to 1 for all benefits and 1.6 for direct benefits only.

Of the foregoing costs, \$7,421,900 is allocated to irrigation and \$132,800 to fish and wildlife enhancement. The irrigation of extension lands will enhance upland game habitat. Since there will be no separable costs incurred for this purpose, under provisions of the Federal Water Project Recreation Act, the costs allocated to fish and wildlife enhancement would be nonreimbursable.

Costs allocated to irrigation would be reimbursable without interest. The total costs allocated to irrigation include \$259,300 as the pumping power suballocation which will be repaid by the pumping power charge. The remaining reimbursable irrigation costs amount to \$7,162,600, of which irrigators could repay \$1,688,400 or about 24 percent. Financial assistance in the amount of \$5,474,200 needed to achieve repayment of the remaining reimbursable irrigation costs would be obtained from net power revenues from the F.C.R.P.S. in accordance with section 2 of the Act of June 14, 1966 (80 Stat. 200), as amended by section 6 of the Act of September 7, 1966 (80 Stat. 707). The conditions prescribed by this legislation for the use of net power revenues from the F.C.R.P.S. for irrigation assistance would be met by the Kennewick division extension.

Policies in effect at the time the Kennewick division was authorized required that all reimbursable project costs be repaid from revenues derived from the project. This required an overall repayment period of 66 years for the facilities built under the 1948 Act. S. 742 would authorize the Kennewick division extension by adding it to the authorization of the 1948 Act, and make the same repayment period applicable to the extension. We believe that this is an appropriate exception to current congressional policy that reimbursable reclamation project costs shall be returned in full within 50 years. The extension water users will be using some joint facilities of the Kennewick Irrigation District, and will bear a prorated share of the district operation, maintenance, and replacement costs. It is equitable that their repayment obligation should run for the same number of years as other division water users. Irrigation water users make annual payments toward retiring irrigation cost allocations in accordance with their ability to pay. Thus, the effect of a longer repayment period is that the water users bear more of the irrigation costs.

Section 5 of the Act of June 12, 1948, provides that one-fifth of the revenues derived from the interest component for power rates of the Kennewick division, Yakima project, may be applied toward repayment of Kennewick division irri-

gation costs assigned for return from power revenues. Under S. 742 this arrangement would not extend to the Kennewick division extension. The proviso at the end of section 1 of the bill assures that revenues derived from the interest component of power rates of the F.C.R.P.S. shall not be available for financial assistance to the extension.

To reflect the escalation of construction costs and the effect of the improvement of the distribution system, we recommend that line 5, page 3 of S. 742 be amended to read: "\$6,735,000 (January 1969 prices) plus or minus such."

A statement of personnel and other requirements that enactment of this legislation would entail is enclosed in accordance with the provisions of the Act of July 25, 1956, Public Law No. 84-801, 70 Stat. 652.

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

Sincerely yours,

RUSSELL E. TRAIN,
Under Secretary of the Interior.

[Enclosure]

KENNEWICK DIVISION EXTENSION, YAKIMA PROJECT, WASHINGTON

Estimated additional personnel and funds for construction (in compliance with Public Law No. 84-801, 70 Stat. 652)

	1st year	2d year	3d year	4th year	5th year
Executive direction:					
Administrative services and support: Clerical and stenographic.....	(2)	2	2	2	1
Subtotal—Administrative.....	(2)	2	2	2	1
Substantive (program): Engineering aids and technicians.....	(2)	2	2	2	-----
Subtotal—Substantive.....	(2)	2	2	2	-----
Total positions.....	(2)	4	4	4	1
Total estimated additional man-years ¹	(2)	4	4	3.1	4
Expenditure for additional man-years ²		\$23,100	\$23,100	\$17,900	\$2,300
Total estimated man-years of civilian employment.....		19.0	25.4	20.0	1.0
Total estimated expenditures:					
Project personal services.....		\$160,350	\$219,550	\$176,200	\$10,000
All other.....		\$539,650	\$3,411,450	\$1,638,200	\$71,000
Total estimated expenditures.....	(\$110,000)	\$700,000	\$3,630,000	\$1,825,000	\$81,000

¹Salary levels are those which become effective July 1, 1968.

²1st year activity will use general investigations personnel and details from other offices.

³Data shown for additional man-years, and expenditures for additional man-years are estimated for recruitment outside the Bureau of Reclamation within the regional area. Experience indicates that such recruitment is necessary only for the low-grade engineering and clerical positions (FS-3 and GS-4). The Bureau of Reclamation does not have available experience records on the net effect to recruitment requirements from outside the Bureau which may result from the transfer of career personnel between regions to fill key positions.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., March 5, 1969.

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

DEAR MR. CHAIRMAN: This is in response to your letter of February 18, 1969, requesting the views of the Bureau of the Budget on S. 742, a bill "To amend the Act of June 12, 1948 (62 Stat. 382), in order to provide for the construction, operation, and maintenance of the Kennewick division extension, Yakima project, Washington, and for other purposes."

The purpose of the bill is stated in its title.

The Department of the Interior, in a report submitted to your committee, recommends an amendment to reflect an increase in construction costs.

The Bureau of the Budget would have no objection to enactment of S. 742 if amended as recommended by the Department of the Interior. No commitment, however, can be made as to when any estimate of appropriation would be submitted for construction of the Kennewick division extension, if authorized by the Congress, since this would be governed by the President's budgetary objectives as determined by the then prevailing fiscal situation.

Sincerely yours,

WILFRED H. ROMMEL,
Assistant Director for Legislative Reference.

[S. 743, 91st Cong., first sess.]

A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the Touchet division, Walla Walla project, Oregon-Washington, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) for purposes of supplying irrigation water initially for approximately ten thousand acres of land, providing municipal and industrial water, flood control, the enhancement of fish and wildlife resources, and the enhancement of recreation opportunities, the Secretary of the Interior (hereinafter referred to as the Secretary) is authorized to construct, operate, and maintain the Touchet division of the Walla Walla project, Oregon-Washington, in accordance with the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto). The principal works of the division (hereinafter referred to as the project) shall consist of the Dayton Dam and Reservoir, fish passage facilities, a diversion dam, and associated drainage facilities.

(b) The Secretary is authorized to construct the Dayton Dam and Reservoir to the physical limitations of the site and to recognize the cost of providing such additional capacity as a deferred obligation to be paid, in accordance with section 2 of this Act, at such time as the additional storage capacity is contracted for: *Provided*, That until such additional storage capacity is contracted for, operation and maintenance costs attributable to the excess capacity shall be funded and added to the construction costs allocated to deferred capacity.

(c) In order to assure a realization of the fish and wildlife enhancement benefits contemplated by this Act, the Secretary shall adopt appropriate measures to insure the maintenance of a streamflow between Dayton Dam and the mouth of the Walla Walla River that is not less than 30 cubic feet per second unless he determines that a water shortage or other emergencies exist or that lesser flows would be adequate for the maintenance of fish life.

SEC. 2. Irrigation repayment contracts shall provide for repayment of the obligation assumed thereunder with respect to any contract unit over a period of not more than fifty years, exclusive of any development period authorized by law. Construction costs allocated to irrigation beyond the ability of the irrigators to repay shall be charged to and returned to the reclamation fund in accordance with the provisions of section 2 of the Act of June 14, 1966 (80 Stat. 200), as amended by section 6 of the Act of September 7, 1966 (80 Stat. 707).

SEC. 3. The conservation and development of the fish and wildlife resources and the enhancement of recreation opportunities in connection with the Touchet division shall be in accordance with the provisions of the Federal Water Project Recreation Act (79 Stat. 213). All costs allocated to the enhancement of anadromous fish species shall be nonreimbursable.

SEC. 4. The interest rate used for purposes of computing interest during construction and, where appropriate, interest on the unpaid balance of the reimbursable obligations assumed by non-Federal entities 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 from fifteen years from date of issue, adjusted to the nearest one-eighth of 1 per centum.

SEC. 5. For a period of ten years from the date of enactment of this Act, no water from the project 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. 6. There are hereby authorized to be appropriated for construction of the new works involved in the Touchet division, \$16,630,000 (January 1965 prices), plus or minus such amounts, if any, as may be required by reason of changes in the cost of construction work of the types involved therein as shown by engineering cost indexes and, in addition thereto, such sums as may be required to operate and maintain said project.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., March 4, 1969.

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. 743, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Touchet division, Walla Walla project, Oregon-Washington, and for other purposes." The bill is identical to S. 485, 90th Congress, as passed by the Senate.

We recommend that the bill be enacted with the amendment set forth herein.

The Touchet division of the Walla Walla project would be located in southeastern Washington. The principal facility of the division would be the Dayton Dam which would impound a reservoir of 52,600 acre-feet of water, the maximum feasible at the site. The dam and reservoir would be operated to provide irrigation, municipal and industrial water supply, outdoor recreation, fish and wildlife enhancement, flood control, and water quality control.

Irrigation water would be supplied initially to approximately 9,960 acres of land. A full supply would be provided to 3,520 acres, and a supplemental supply to 6,440 acres that are now irrigated from diversion works on the Touchet River downstream from the damsite, but suffer from seasonal deficiencies in water supply. The lands proposed to be irrigated are of high quality and very well suited to sprinkler irrigation.

Assurance of a full irrigation water supply may be expected to produce a shift in irrigable land use from forage crops to row crops, such as vegetables, for canning and freezing. Water for irrigation will be diverted from the river below the dam into existing distribution systems owned by the irrigators. No distribution facilities are proposed to be constructed in connection with the project.

The Touchet division plan of development does not provide any facilities or storage capacity in Dayton Reservoir specifically for water quality control purposes. The reservoir operating regulations would provide water releases from the reservoir for irrigation and fish and wildlife enhancement sufficient to assure adequate control of water quality during the months of May through September. Maintenance of 30 c.f.s. for fishery purposes during other months is expected to be adequate in quantity to assure a resultant quality within the criteria for all project purposes. There is, therefore, no basis for an allocation of costs to water quality control, and the financial analyses and economic justification presented in the feasibility report (H.R. Doc. No. 155, 89th Cong., 1st Sess. (1965)) have been modified accordingly.

The plan described in the feasibility report cited above has been modified to the extent of increasing the design capacity of the spillway at the proposed Dayton Dam in recognition of new hydrologic data and modern practices. The cost estimates have been adjusted to reflect the new spillway design and updated to cover construction cost increases since 1962. This has resulted in changes in the economic and financial analyses of the division.

At January 1969 costs for these facilities the construction cost is estimated at \$22,774,000, allocated among functions as follows:

Irrigation	\$9,014,000
Flood control	1,004,000
Municipal and industrial	150,000
Fish and wildlife enhancement	12,261,000
Recreation	195,000
Highway improvement	150,000
Total	22,774,000

The economic justification for the Touchet division is demonstrated by a comparison of total benefits to total costs (for 100 years at $3\frac{3}{4}\%$ interest) of 1.72 to 1. The ratio based on direct benefits only is 1.47 to 1.

The bill would authorize construction of Dayton Reservoir to the maximum practical capacity of the site as proposed in our project report. This would result in an annual water yield in excess of immediate demands. This additional water supply can serve future irrigation or municipal water requirements. The poten-

tial irrigable lands in the valley far exceed the area which could be irrigated with this water. Based upon the supposition that the water will ultimately be used for irrigation, the deferred costs for unassigned space in the reservoir, amounting to \$4,741,000 exclusive of funded operation and maintenance costs, have been allocated to irrigation, and are included in the \$9,014,000 figure in the table of allocations above. Costs associated with immediate irrigation uses would total \$4,273,000.

All costs allocated to irrigation would be reimbursable. Paying in accordance with their ability, the water users would return \$1,214,500 of the \$4,273,000 of immediate-use irrigation costs over the 50-year repayment period established by the bill. The remainder of the immediate-use irrigation allocation would be repaid from net revenues from the municipal and industrial repayment (\$226,000) and revenues derived from the sale of power marketed by the Federal Columbia Power System (\$2,832,500).

Flood control operation will be based on snow forecast and joint use of 15,000 acre-feet of Dayton Reservoir storage capacity on a seasonal basis. The urgent need for such an operation plan was demonstrated in the December 1964 floods in the Pacific Northwest and those which occurred in January 1969. Joint operation of the reservoir for flood control and conservation will require the establishment and operation of a hydrometeorologic network of snow courses, gages, and forecasting equipment. This network is included in the costs of the division allocated to flood control. Pursuant to reclamation law, the flood control allocation is a nonreimbursable cost.

The city of Dayton, Washington, has indicated its intent to purchase 1,000 acre-feet of water annually from Dayton Reservoir for municipal and industrial purposes. Five hundred acre-feet would be used during the first 10 years of project operations, and the full 1,000 acre-feet thereafter. Costs allocated to municipal and industrial water supply would be repaid within 50 years with interest at the rate specified in section 4 of the bill, subject to the deferral provisions of the Water Supply Act of 1958, as amended. Revenues from this source in excess of the repayment obligation would be applied to reduction of the irrigation repayment obligation.

As the only sizable lake in the area, Dayton Reservoir is expected to be a popular recreation attraction. Recreation uses of the division land and water areas will include boating, swimming, water skiing, camping, picnicking and hunting. Costs allocated to recreation have been treated in accordance with the Federal Water Project Recreation Act (Public Law 89-72).

Potentially significant benefits to anadromous fish species exist at the Touchet division. The project plan of development seeks to capitalize upon the opportunities presented. The Dayton Reservoir will store enough water to enable releases to be made to re-establish anadromous fish runs in the Touchet River. Temperature control over these releases, which is essential, would be maintained by building Dayton Dam with outlet works at several levels. Among the special facilities proposed to be built for anadromous fishery enhancement are a trap, hopper, and tramway to carry upstream migrants over the dam and a collector system for downstream migrants. In the way of local benefits the reservoir would create a lake sports fishery; also, waterfowl hunting opportunities are expected to materialize on project lands.

The recreation and fish and wildlife enhancement costs of the Touchet division would be assigned to the reimbursable or nonreimbursable category as follows:

Recreation:

Reimbursable (50 percent of separable costs)-----	\$96, 000
Nonreimbursable (joint costs, plus 50 percent of separable costs) _	99, 000
Total -----	195, 000

Fish and wildlife enhancement:

Reimbursable (50 percent of separable costs attributable to benefits realized at the project)-----	952, 000
Nonreimbursable (joint costs, separable costs attributable to enhancement of anadromous fish, and 50 percent of separable costs attributable to benefits realized at the project)-----	11, 309, 000
Total -----	12, 261, 000

A letter has been received from the Port of Columbia County (Columbia County Port District) expressing its willingness to assume the responsibility for administering the land and water areas for recreation and fish and wildlife enhancement and to assume the non-Federal costs in accordance with the Federal Water Project Recreation Act.

Since the Department's feasibility report was completed, the State of Washington has upgraded its highway design standards. The road which must be relocated around Dayton Reservoir, therefore, will be of a higher standard than the existing road. The incremental cost of that improvement, estimated at \$128,000, would be nonreimbursable under provisions of the Flood Control Act of 1962.

To reflect the escalation of construction costs and the design changes described herein, we recommend that line 17, page 4 of S. 743 be amended to read: "division, \$22,774,000 (January 1969 prices), plus or minus".

A statement of personnel and other requirements that enactment of this legislation would entail is enclosed in accordance with the provisions of the Act of July 25, 1956, Public Law No. 84-801, 70 Stat. 652.

Time has not permitted securing advice from the Bureau of the Budget as to the relationship of this report to the program of the President.

Sincerely yours,

RUSSELL E. TRAIN,
Under Secretary of the Interior.

[Enclosure]

TOUCHET DIVISION, WALLA WALLA PROJECT, WASHINGTON-OREGON

Estimated Additional Man-Years of Civilian Employment and Expenditures for the 1st 5 Fiscal Years (As required by Public Law 84-801, 70 Stat. 652)¹

	1st year ²	2d year	3d year	4th year	5th year
Estimated additional man-years of civilian employment:					
Executive direction.....					
Administrative services and support:					
Administrative officer.....					
Clerical and stenographic.....		3.0	3.0	2	1.0
Total, administrative.....		3	3	2	1.0
Substantive (program):					
Engineering aids and technicians.....		6.0	6.0	6	2.0
Engineers.....					
Inspectors.....					
Other personnel.....					
Total, substantive.....		6.0	6.0	6	2.0
Total, positions.....		9.0	9.0	8	3.0
Total, estimated additional man-years.....		4.8	8.2	6	1.5
Estimated additional expenditures:					
Personal services.....	³ \$200,000	\$193,550	\$310,900	\$333,700	\$120,500
All other.....		1,106,450	9,689,100	8,916,300	1,418,500
Total, estimated expenditures.....	200,000	1,300,000	10,000,000	9,250,000	1,539,000

¹ Salaries based on scales effective July 1, 1968.

² 1st-year activity will utilize general investigation personnel and details from other offices.

³ Advance planning.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., March 18, 1969.

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

DEAR MR. CHAIRMAN: This supplements our legislative report of March 4, 1969, on S. 743, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Touchet division, Walla Walla project, Oregon-Washington, and for other purposes" in which we indicated that time had not permitted securing clearance from the Bureau of the Budget.

In that report we recommended that all costs assigned to anadromous fisheries enhancement be nonreimbursable. We want to point out, however, that the Department does not consider this approach to be a continuing policy to be applied to all future projects because further consideration needs to be given to this matter.

The Bureau of the Budget now advises that there would be no objection from the standpoint of the Administration's program to the report of March 4, 1969, and the recommendations contained therein.

Sincerely yours,

RUSSELL E. TRAIN,
Under Secretary of the Interior.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., March 7, 1969.

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

DEAR MR. CHAIRMAN: This is in response to your letter of February 18, 1969, requesting the views of the Bureau of the Budget on S. 743, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Touchet division, Walla Walla project, Oregon-Washington, and for other purposes."

The purpose of the bill is stated in its title.

The Department of the Interior, in a report being submitted to your committee, recommends an amendment to reflect an increase in construction costs.

The Bureau of the Budget would have no objection to enactment of S. 743 if amended as recommended by the Department of the Interior. No commitment, however, can be made as to when any estimate of appropriation would be submitted for construction of the Touchet division, if authorized by the Congress, since this would be governed by the President's budgetary objectives as determined by the then prevailing fiscal situation.

Sincerely yours,

WILFRED H. ROMMEL,
Assistant Director for Legislative Reference.

The CHAIRMAN. We are privileged this morning to have two Congressional witnesses, one from the House and one from the Senate. Senator Magnuson, who is a cosponsor of both bills and my senior colleague, will appear now, then be followed by Congresswoman Catherine May.

Senator Magnuson.

STATEMENT OF THE HONORABLE WARREN G. MAGNUSON, A U.S. SENATOR FROM THE STATE OF WASHINGTON

Senator MAGNUSON. Thank you, Mr. Chairman.

I appreciate this opportunity, and as you pointed out, S. 742 is a bill to amend the June 12, 1948 act, which would provide for the construction, operation, and maintenance of the Kennewick division.

This bill has been introduced by the distinguished chairman and myself in three or four Congresses now, and it was approved by the Interior committee in the 90th Congress, and passed by the Senate.

The purpose of the Kennewick division's extension is to provide water for irrigation for approximately 6,300 acres of land in Benton County, Wash. This land is located in the Columbia River Valley, in the southeastern part of the State.

Most of the land now lying within the Kennewick extension is dry sagebrush land, and has been useful only for livestock grazing.

With the advent of irrigation of this land, we will be able to produce what we call row crops, and the specialty crop of grapes. This has long been known as a grape country and such soft fruits as cherries, peaches, prunes, and apricots. The surrounding area presently produces some of the finest juice grapes in the country.

But more important than that, the Kennewick extension land is quite near the developing tri-city area of Richland, Kennewick, and Pasco, and while this population center has a very good future growth potential, it is now undergoing severe strains of shifting from a nuclear weapons economic base at the Hanford Atomic Plant to a more diversified economy. This is part of the program to rehabilitate the area, due to the change in the nuclear weapons policy. Until the full potential of nuclear diversification has been developed, and the planned fast flux test facility has been developed—a nuclear breeder reactor—this area is going to be facing a number of economic problems.

Especially is this true in the phasing out of this matter. So, for the maximum economic benefit to the local communities, immediate authorization and construction of the Kennewick extension is needed. Delay would probably result in an economic benefit when it would be less needed. The economic slack needs to be taken up now.

The Touchet project is a multi-purpose project east of this area. It is a division of the Walla Walla project, it is an important addition to the area's reclamation—and I underline reclamation—and conservation activities within the State in this area.

The Touchet River, now uncontrolled, will, through this project, assume a significant role in the economy of the entire region. The proposed Dayton dam will curb destructive floods, control water pollution, and provide full irrigation for at least 10,000 acres, making fruit and vegetable production possible in an area now devoted mainly to wheat.

The reservoir will also provide municipal and industrial water for the city of Dayton and will create the only sizeable lake in the area for swimming, boating, and sport fishing.

Salmon facilities included in the project will produce approximately 40,000 salmon for harvest in the Pacific Ocean and lower Columbia River annually. Thus fishermen from the entire northwestern seaboard will share in the benefits of this project.

Each portion of the proposal has a favorite benefit-cost ratio, the overall ratio being 2.77 to 1 over a 100-year period.

The long term advantages that the Touchet project will bring to the region, coupled with its favorable economic stance and approval by departments and agencies involved, make it a proposal I am pleased to support. I would hope that Congress can act expeditiously to make this project a reality.

I thank you for the privilege of appearing.

The CHAIRMAN. Thank you, Senator Magnuson.

Senator MAGNUSON. I will put my statements in the record in full.

The CHAIRMAN. The entire statement will appear in the record, if you will leave a copy for the reporter.

(The statement referred to follows:)

STATEMENT OF HON. WARREN G. MAGNUSON, A U.S. SENATOR FROM THE STATE OF
WASHINGTON

KENNEWICK DIVISION EXTENSION

Mr. Chairman, I appreciate this opportunity to appear before the Subcommittee on Irrigation and Reclamation of the Senate Committee on Interior and Insular Affairs.

I am here today to request early Committee approval of Senator Jackson's S. 742, a bill to amend the act of June 12, 1948 (62 Stat. 382), in order to provide for the construction, operation, and maintenance of the Kennewick division extension, Yakima project, Washington, and for other purposes. This legislation is identical to bills introduced by Senator Jackson and co-sponsored by me in the 88th, 89th and 90th Congress and which were approved by the Interior Committee and passed by the U.S. Senate.

The purpose of the Kennewick division extension is to provide water for the irrigation of 6,300 acres of land in Benton County, Washington. This land is located in the Columbia River Valley in the southern part of the State of Washington.

Most of the land now lying within the Kennewick extension area is dry sagebrush land, useful only for livestock grazing. With the advent of irrigation this land will be able to produce row crops of beans and potatoes and specialty crops of grapes, sweet cherries, prunes, peaches, and apricots. The surrounding area presently produces some of the finest juice grapes in the country.

The Kennewick extension land is quite near the developing Tri-City area of Richland, Kennewick, and Pasco. While this population center has a very good future growth potential, it is now undergoing the severe strains of shifting from a nuclear weapons economic base at the Hanford Atomic Plant to a more diversified economy. Until the full potential of nuclear diversification has been developed and the planned Fast Flux Test Facility (a nuclear breeder reactor) has been developed, this area is going to be facing a number of economic problems.

For maximum economic benefit to the local communities immediate authorization and construction of the Kennewick extension is needed. Delay would probably result in an economic benefit when it would be less needed. The economic slack needs to be taken up now.

I would like to close my statement with the note that this project has an extremely high benefit-to-cost ratio of 3.5 to 1. It is a financially sound project of exceptional merit.

TOUCHET DIVISION

The multipurpose project for the Touchet Division of the Walla Walla project is an important addition to the irrigation, recreation, and conservation activities within the State of Washington. The Touchet River, now uncontrolled, will through this project assume a significant role in the economy of the entire region. The proposed Dayton Dam will curb destructive floods, control water pollution, and provide full irrigation for at least 10,000 acres, making fruit and vegetable production possible in an area now devoted mainly to wheat.

Backwaters will also provide municipal and industrial water for the city of Dayton and will create the only sizable lake in the area for swimming, boating and sport fishing. Salmon facilities included in the project will produce annually approximately 40,000 salmon for harvest in the Pacific Ocean and lower Columbia River. Thus, fishermen from the entire northwestern seaboard will share in the benefits of this project.

Each portion of the proposal has a favorite benefit-cost ratio, the overall ratio being 2.77 to 1 over a 100-year period.

The long-term advantages that the Touchet project will bring to the region, coupled with its favorable economic stance and approval by departments and agencies involved, make it a proposal I am pleased to support. I would hope that Congress can act expeditiously to make this project a reality.

The CHAIRMAN. Mrs. May, we are delighted to welcome you to the committee. As both of these projects are in Congresswoman Catherine May's district, we welcome her testimony.

STATEMENT OF HON. CATHERINE MAY, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF WASHINGTON

Mrs. MAY. Thank you, Senator Jackson.

I would like to submit both of my statements in their entirety for the record.

Of course, I do appear today as a Representative for the congressional district in which both of these projects are located, and I will be brief, because Senator Magnuson has already stated the details, important details concerning these two projects, and subsequent witnesses, of course, will put in more of the details that the committee might desire.

I might just say that the status of both of these projects should be probably part of the consideration here. There has been a new formula, I understand, on benefit-cost ratio.

I have corrected my own original statements under the new formula, and that is all now updated. The project I am now speaking of is the Kennewick, and it has an outstanding benefit-cost ratio of about 2.8 to 1, and as the Senator has said, the total investment would be approximately \$6.14 million.

Now legislation similar to that before the subcommittee today has several times passed the Senate, but it was not until just prior to the adjournment of the 90th Congress that subcommittee hearings were held in the House.

Action at that time was then deferred to the 91st Congress, but with assurance that this Kennewick project would be among the first to receive committee consideration this year, and I am hopeful that full congressional authorization will not be delayed any further, and that of course the required departmental reports on the House bill, my two companion bills, will be forthcoming shortly, and as soon as we have cleared the way finally for House committee full hearings.

We have, as you can imagine, a great deal of backing throughout the State, as well as from the Washington reclamation associations for this particular project.

Now on the Touchet division, and here, again I have corrected my statement from the report that has come up. The benefit-cost ratio is 1.7 to 1 for all benefits and 1.47 to 1 for direct benefits only.

And I would like to just say that recently events out in this area of my district have pointed up the tremendous need for this project, mainly right now because of its potential protection against the kind of severe flood damage that occurred in this area in December of 1964, in January of 1965, and in January and February of this year.

It also as has been indicated, is urgently needed for domestic and industrial water supply for the city of Dayton, and the lower Touchet Valley.

Now you are going to hear in just a moment from the Honorable Vernon Marll, Commissioner of Columbia County, in which the project is located, and also, president of the Touchet Valley Irrigation District.

I don't think anyone has worked more diligently or longer for this project, and the people that it will serve, than has Mr. Marll, and I would like the committee to know that Mr. Marll certainly has good

reason to believe that the Touchet project, once constructed, will solve a great many problems in this area, particularly those concerned with the seasonal flood damage.

Mr. Marll has devoted countless hours, working with all our agencies out there, as well as local citizens, in coordinating emergency efforts that have been required to combat these floods.

He has done a remarkable job, but I imagine, like everyone else, he is growing weary of it, especially since it is estimated that over \$350,000 in tangible flood damage in just the past 2 months alone has occurred out there, and \$300,000 of the damage out in this area these last 2 months could have been prevented, had the Dayton Dam been constructed.

Now here I would like to just finally touch on the status of the pending legislation in the House of Representatives. After several years of delay in committee consideration, a subcommittee hearing was scheduled and held, again just prior to the adjournment of the 90th Congress.

Full hearings, early in the 91st Congress, have been pledged by the chairman of the Irrigation and Reclamation Subcommittee as well as the chairman of the full Committee on Interior and Insular Affairs, and the way will be paved for these hearings on the House side as soon as the required departmental reports on the House bill are received.

And hopefully, assuming favorable action on the Senate side, then it looks like this might be the session in which we get the full green light for these two important projects.

The CHAIRMAN. Thank you, Mrs. May, for your very fine statement. Any questions?

Senator ALLOTT. Mrs. May, it is nice to see you. I have no questions.

The CHAIRMAN. Thank you very much, Mrs. May, and we are delighted to have you with us this morning.

(The statement referred to follows:)

STATEMENT OF HON. CATHERINE MAY, A U.S. REPRESENTATIVE IN CONGRESS FROM
THE STATE OF WASHINGTON

KENNEWICK DIVISION EXTENSION

Mr. Chairman and Members of the Subcommittee, I am Catherine May, Representative in Congress for the Fourth Congressional District of the State of Washington. As the sponsor of H.R. 1215, a bill similar to S. 742, I am here to support the Kennewick division extension, Yakima project.

It is my purpose to be very brief, Mr. Chairman.

The Kennewick division of the Yakima project was authorized by the Act of June 12, 1948, and the existing Kennewick division today serves about 19,000 acres of land. The proposed Kennewick division extension would utilize the extra capacity that was built into the main canal at the time of construction, to provide for the irrigation of about 7,000 acres of land in addition to that presently irrigated. This will be accomplished through the construction of additional new works. When irrigation water is available to these additional acres, crops will be converted from dry land wheat, sagebrush and grasses for livestock grazing to the growing of feed and general row crops, plus some fruit and specialty crops.

This project has an outstanding benefit-to-cost ratio of about 2.8 to 1. The total investment would be approximately \$6.7 million.

Legislation similar to that before the Subcommittee today have several times passed the Senate, but it was not until just prior to the adjournment of the 90th Congress that subcommittee hearings were held in the House. Action was deferred

to the 91st Congress, but with assurance that this project would be among the first to receive Committee consideration this year. Thus full Congressional authorization should not be delayed further. I am hopeful the required Departmental reports on the House bill will be forthcoming shortly to clear the way for House committee hearings.

Authorization of the Kennewick division extension of the Yakima project has been urged by the Governor of the State of Washington, the State Legislature, the Washington State Reclamation Association, and other organizations and individuals in addition to those of us in Congress interested in beneficial use of our water resources.

Thank you.

TOUCHET DIVISION

Mr. Chairman and Members of the Subcommittee, I am Catherine May, Representative in Congress for the Fourth Congressional District of the State of Washington, and sponsor of H.R. 1216, to authorize the Touchet division of the Walla Walla project in my District. H.R. 1216 is similar to S. 743, and I am here to support this proposed project.

The Touchet division is an excellent project with a benefit-to-cost ratio of about 1.72 to 1 for all benefits and 1.47 to 1 for direct benefits only.

The Dayton Dam and Reservoir on the Touchet River, about six miles upstream from the City of Dayton, will regulate the undependable flows of the river. Irrigation water for about 10,000 acres of farmland will be provided, the area will be protected from the kind of severe flood damage that occurred in December of 1964, in January of 1965, and in January and February of this year, and a needed domestic and industrial water supply will be available for the City of Dayton and the lower Touchet Valley.

I am pleased to note that standing by to testify today is the Honorable Vernon Marll, Commissioner of Columbia County and President of the Touchet Valley Irrigation District. No one has worked more diligently or longer for this project and the people it will serve than has Mr. Marll. And I would like the Committee to know that Mr. Marll has good reason to believe that the Touchet project, once constructed, will solve a great many problems in the area, not the least of which is the repeated seasonal flood damage that I have already touched upon. Mr. Marll has devoted countless hours and days in working with numerous local citizens, groups, organizations, and State and Federal agencies, in coordinating emergency efforts to combat these floods. He has done a remarkable job. But like everyone else in the Touchet Valley, I imagine he is growing weary of it, especially since it is estimated that of the over \$350,000 in tangible flood damages in just the past two months alone, \$300,000 of this damage would have been prevented had the Dayton Dam been constructed.

Now for just a moment I would like to discuss the status of the pending legislation in the House of Representatives.

After several years of delay in committee consideration of this project in the House, a subcommittee hearing was scheduled and held just prior to the adjournment of the 90th Congress. Full hearings early in the 91st Congress were pledged by the Chairman of the Irrigation and Reclamation Subcommittee and the Chairman of the full Committee on Interior and Insular Affairs. The way will be paved for early hearings on the House side as soon as the required Departmental reports on the House bills are received.

Thank you very much.

The CHAIRMAN. Out of order, before calling on Mr. Stamm, I thought to follow Mrs. May with the representative here from the Touchet Valley Irrigation District. Mr. Vernon Marll is the president of the Touchet Irrigation District, and is also a county commissioner for Columbia County, where the dam will be located. He has, as Mrs. May mentioned, long been active in behalf of this project, and we are delighted, Mr. Marll, to welcome you before the subcommittee. You have a prepared statement. Why don't you just go right ahead and read that statement, please?

**STATEMENT OF VERNON MARLL, DIRECTOR, TOUCHET VALLEY
IRRIGATION DISTRICT AND COUNTY COMMISSIONER OF
COLUMBIA COUNTY, WASH.**

Mr. MARLL. Thank you, Mr. Chairman.

My name is Vernon Marll. I am a farmer at Dayton, Wash., president of the Touchet Valley Irrigation District and county commissioner for Columbia County, Wash.

I appreciate this opportunity to be here and voice support for Senate bill 743, which would authorize construction of the Touchet division.

I had the privilege of presenting a similar statement before this committee in August of 1967 in favor of Senate bill 485, and your favorable action on that bill was most appreciated by those of us living in the Touchet Valley.

Just a week ago, I chaired a meeting of local interests in the valley to discuss the urgent need for authorization of the Touchet division. Official representatives of the cities of Dayton and Waitsburg, Columbia and Walla Walla Counties, the Port of Walla Walla and other organizations were present at that meeting.

I am representing these interests today, as well as those of the irrigation district. I want to mention, too, that various Federal and State agencies have given us valuable technical assistance.

When last I was here, I mentioned the longstanding need for and widespread interest in obtaining irrigation water to help make fuller use of our land and to diversify our cropping patterns. I also discussed the urgent need for valleywide flood control and a reliable municipal water supply for the city of Dayton and plants processing agricultural products in the area. I expressed the desire of those of us living in the valley to see needed recreational facilities provided and the salmon run in the Touchet and Columbia Rivers protected and developed as a part of the project.

Gentlemen, the need for this project becomes more urgent each year. The serious problems that have created the need for improved management of water and land resources in the valley are more apparent now than ever before. These problems have come full circle in the past 4 years.

We witnessed the disastrous floods of December 1964 and January 1965 during which our personal safety was imperiled and millions of dollars of damage done to our farmlands, roads, bridges, and other improvements.

We know that Dayton Dam could have reduced damages caused by these floods by more than \$1 million.

Then just this January we were again hard hit by flood. For 3 days Touchet River flood waters cut away at our farm lands, roads, bridges, and for the second time destroyed the diversion structure which supplies the city of Dayton with a large part of its water supply.

As of this date, the residents of Dayton must rely solely for water on a deep well that was constructed to provide an auxiliary water supply only.

The tangible damages that resulted from the flood this year totaled well over \$350,000 and set us back once again in our efforts to improve the valley.

Dayton Dam, had it been in operation, would have prevented some \$300,000 of this damage, according to the Corps of Engineers.

Intangible losses occurred too, for the flood scarred the terrain and destroyed fish and wildlife habitat. These losses can't be evaluated in terms of dollars at present.

In the years between these floods we have had critical shortages of water for our crops. We have seen the Touchet River vary from flood levels to practically a trickle in summer.

During the 1968 growing season for example, we had a disastrous crop drought. Estimates are that at least 50 percent of our pea crop was lost and the quality of all the crops in the area that we did harvest was below normal. We lost most of the production from our pastures. We would prefer to shift our production to crops for which there is a ready market. With our present, unregulated water supply, we see no possibility of further diversifying our cropping program.

In 1964 we took a step forward toward improving this situation by the formation of our irrigation district. The vote establishing the district was an overwhelming 97 percent. We feel that the events of the past 4 years demonstrate better than our words the vital need for development of the Touchet District.

The proposed Dayton Dam and Reservoir will effectively regulate the Touchet River to benefit the residents of the Touchet Valley, the State of Washington, and the Nation.

The Touchet Valley is our home; we want to improve it, and by so doing increase our contribution to the economy. The means by which these improvements can be made are beyond our private assets and it is our hope that, with your kind consideration, development of the Touchet Division will be authorized by this Congress so that its benefits can be realized in the near future.

Thank you for your time and attention.

Mr. Chairman, I would like to refer to a set of pictures each member of your committee has before you. These signs depict the scene of some of the flooded areas in January. I would also like to introduce this letter from the Corps of Engineers supporting the statements I have given you today.

(The data referred to follows:)

FEBRUARY 27, 1969.

Mr. VERNON MARLL,
Dayton, Wash.

DEAR Mr. MARLL: The following information regarding the Touchet Division of the Walla Walla project was developed as requested by Mr. Spearman. I believe our estimates will closely approximate those developed at your meeting in Waitsburg, if allowance is made for some double counting and items, such as, reduced property values which cannot be used in our evaluation.

The estimate of damage caused by the January 1969 flood on the Touchet River is \$350,000. This includes approximately \$110,000 in emergency expenditures by Federal, State and local agencies.

If the Dayton Dam and Reservoir project had been in operation approximately \$300,000 in damages would have been prevented, including savings of Federal expenditures of \$18,000 for emergency flood fight and \$51,000 for emergency clearing and snagging. If the proposed Waitsburg channel improvement project had also been completed, practically all damages could have been prevented except for a minor amount in the rural areas along the lower reaches.

These estimates were made on short notice from information readily available and are subject to change.

Sincerely yours,

HOWARD A. PRESTON,
Chief, Planning Branch.

Mr. MARLL. Thank you very much.

The CHAIRMAN. Thank you, Mr. Marll. That is a very helpful statement and we appreciate the fine work that you have done for the Touchet Valley Irrigation District as its president, and your long-time interest in this project.

The Chair would like to place in the record at the conclusion of Mr. Marll's remarks various letters from governmental, civic, business, and other groups who have indicated their support of the project, also a letter from the Kennewick Irrigation District and a letter from the Governor of the State of Washington, the Honorable Dan Evans, in support of both projects.

The CHAIRMAN. I don't believe there is any need on my part to ask any questions. Mr. Marll, because this project has been gone over previously and the record is quite clear, and we will incorporate by reference all the previous testimony. I think the significant point is that the floods keep reoccurring, and they are becoming more disastrous as time goes on. Is that a fair summary?

Mr. MARLL. That is right.

The CHAIRMAN. The flood part of the problem, of course, would be alleviated by the building of the dam. The project covers the supplemental water for additional irrigation as well as provide a very outstanding recreational opportunity in that area.

Any questions of Mr. Marll?

Senator ALLOTT. No, I have none.

Senator JORDAN. Just one question.

The CHAIRMAN. Yes, Senator Jordan.

Senator JORDAN. Mr. Marll, is there any change in the watershed? It seems to me these floods in the Touchet River are getting more frequent, especially in the last few years. I have been over there, and I have seen the devastation that this flood brought in 1964. What changes, if any, are there in the watershed that make these floods more frequent than they were 20, 30, or 40 years ago?

Mr. MARLL. Senator, I believe perhaps they have come to our attention more, is one reason. As far as the condition of the watershed, there is a great area that the Touchet drains. It is a large part of the National Forest, many private farmlands, timberlands, and there has been some logging, it is true. But as far as the actual cause, it is perhaps beyond definite decision at the present time. There have been many conservation efforts made back in the mountains.

We have encouraged, through the Soil Conservation Service, the conservation of soils of different types, the logging practices, and so forth. We have tried to encourage private and Government logging activities to conform to the best practices, so as to conserve the soil.

As to the causes of the different floods, I just could not say exactly.

Senator JORDAN. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Jordan.

Thank you, Mr. Marll. We want to express our appreciation for your coming such a great distance to be here. You have been very helpful to the committee this morning.

Mr. MARLL. Thank you very much, Mr. Chairman.
(The communications previously referred to follow:)

STATE OF WASHINGTON,
OFFICE OF THE GOVERNOR,
Olympia, February 26, 1969.

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

DEAR SENATOR JACKSON: It is with great pleasure that I learned of the introduction of S. 743, and further that your committee has scheduled a hearing on March 4, 1969, for authorization of the Touchet Division, Walla Walla Project, Washington.

This office has been aware of the multiple benefits that would accrue to the area and the region from this project and is keenly interested in its approval and early construction.

Both storage and regulated releases are vitally necessary to the optimum development of the Touchet Valley for municipal and irrigation supplies. Such supplies are currently limited to uncontrolled stream flows, which, most frequently, do not coincide time-wise with existing water-use requirements. The city of Dayton, which has historically depended on the Touchet River for its main supply, has had to rely on supplemental water from two wells during the period of high demand. With the destruction of the city diversion dam by the January, 1969 flood, the need for the project to provide a firm supply to satisfy both current and future added municipal and industrial water demands becomes even more critical.

Further, flood control and recreation are highly important factors to the continued social and economic progress in this southeastern portion of the State of Washington.

Interregional considerations of significant magnitude are also associated with this project and should be emphasized. These relate to the utilization of the rivers and streams of Washington State as major suppliers of salmon stock to the Pacific Ocean fishery, and I concur that it is appropriate to allocate a calculable nonreimbursable benefit for fish and wildlife purposes where these extend beyond the project area. With a minimum flow of 30 c.f.s. made possible through the project's principal feature at Dayton Dam, our biologists advise that the Touchet River watershed is capable of providing spawning areas to a potential escapement of 5000 spring Chinook and 5000 Coho salmon annually.

The commercial and sports catch of salmon incubated and reared in the Touchet system could contribute to the fishery resource for a distance of at least 400 miles downstream from the Dayton Dam site to the mouth of the Columbia River. In addition, project benefits would extend off the Washington coast and adjacent areas, providing a harvest value in Touchet River salmon resources of \$14,750,000 over a 50-year project life.

We also recognize that this project could provide substantial benefits in the steelhead fishery of the Columbia River system, as well as an additional and much-needed fishing lake and game-fish environment in the southeast Washington area.

In view of these broad benefits, I sincerely hope the committee will report favorable on this measure.

Sincerely,

DANIEL J. EVANS, Governor.

KENNEWICK, WASH., March 4, 1969.

Senator HENRY M. JACKSON,
Senate Office Building,
Washington, D.C.:

The Kennewick extension and Touchet projects bills that you introduced are of particular interest to the Richland Rod and Gun Club we oppose the Kennewick extension project on the basis that the Yakima River is in no condition to have additional water withdrawn from it until adequate stream flow in the lower Yakims is provided through the Bumping Lake project we are opposed to anything which would aggravate an already disgraceful situation we see the

Touchet project as beneficial to all interests and we therefore support it it is important to point out that benefits to wildlife and in particular to anadromous fish in on maintaining a higher minimum stream flow that the present a letter further elaborating on these subjects will be forthcoming.

Yours truly,

JERRY R. MCBRIDE,
Legislative Chairman, Richland Rod & Gun Club.

KENNEWICK IRRIGATION DISTRICT,
Kennewick, Wash., February 28, 1969.

HON. HENRY M. JACKSON,
*Senate Office Building,
Washington, D.C.*

DEAR SENATOR JACKSON: On behalf of the Directors of the Kennewick Irrigation District, I wish to reaffirm their support for the passage of S 742 and to thank you for your many efforts in obtaining authorization for the Kennewick Division Extension.

The addition of the 6,300 acres will certainly provide many economic advantages to our District.

Very truly yours,

CALVIN R. LIEBEL,
Secretary-Manager.

PASCO, WASH., *March 3, 1969.*

Senator HENRY JACKSON,
Washington, D.C.:

We wish to reconfirm our stand on the Kennewick division extension. Hopefully bill in the House will be approved this time. Thanks for your continued interest.

BALCOMBE & MOE, INC.

BOARD OF COUNTY COMMISSIONERS,
Walla Walla, Wash., February 24, 1969.

HON. HENRY M. JACKSON,
U.S. Senate, Washington, D.C.

DEAR SENATOR MAGNUSON: The Board of Walla Walla County Commissioners pledges its full support to the testimony of Commissioner Vernon Marl of our neighboring Columbia County.

He will be testifying on behalf of the Touchet Valley Dam in Southeastern Washington. The recurring history of disastrous floods alone should be sound reason for its construction.

The economic benefits derived from the irrigation of many more thousands of acres and the importance of water supply for existing irrigated farms are endless.

For these and many other reasons we urge the approval of the United States Senate for this project.

Respectfully,

HOWARD BARNES.
JAMES A. STONECIPHER.
EUGENE V. KELLY.

CITY OF DAYTON,
Dayton, Wash., February 28, 1969.

HON. HENRY M. JACKSON,
*Chairman, Interior Insular Affairs Committee,
Washington, D.C.*

DEAR SENATOR JACKSON: The City of Dayton gives its full support to the Dayton Dam Project on the Touchet River. In four years the City of Dayton has experienced two floods, one being 1964-1965 and the recent one of 1968-1969 neither of which would have occurred had we had the dam. Each of these floods has caused thousands of dollars of damage to municipal property and property of the residents of our city.

Additionally, the dam would provide our City with an adequate water supply and the plan for the dam includes a certain amount of water storage for Dayton's municipal purposes.

We urge your and your committee's favorable consideration of the Dayton Dam Project.

Respectfully yours,

PAUL G. NELSON, Mayor.

CITY OF WAITSBURG,

Waitsburg, Wash., February 28, 1969.

Senator HENRY M. JACKSON,
Interior and Insular Affairs Committee,
Washington, D.C.

DEAR SIR: We are writing at this time to thank you for your continuing support of the Touchet Division of the Walla Walla Project and to let you know the City of Waitsburg is solidly behind you in your effort to get the project under way.

Our city is still cleaning up from the third flood in the last five years. The money that has been provided by Federal, State and Local governments; by private land and home owners, for temporary measures to control this damage, would go a long way toward the cost of the flood control phase of the Touchet Division. We realize the dam itself will not avert all of the flood potential but will minimize the damages to be expected from any future floods. The frequency of these floods have had a very depressing effect on property values in this area. In some instances as much as 15 to 20 percent.

We are also looking forward to the economic benefits to be derived from this project, particularly from the irrigation phase. We have large canneries at Waitsburg and at Dayton, 10 miles distant. At the present time these plants operate only about 90 days out of the year. With additional water for irrigation, it is hoped row crops will be developed that will double the operating time of the canneries, thus providing a much better economy for the two cities. Also, with the wheat surplus and declining market, this would be quite a boost for a number of dry land wheat farms.

We would also benefit considerably from the recreation and fisheries phase of the project, as well as better water quantity and quality. During the last two rather dry summers the flow of the Touchet in the late summer and fall has been very low, causing the water to become warm and stagnant almost to the point of posing a health problem. On the lower reaches of the Touchet the channel is nearly dry in the late summer, curtailing irrigation and making it very difficult for the downstream migration of young steelhead.

We will be looking forward with great interest the results of the hearing before your committee.

Sincerely,

ALBERT LAND, Mayor.

PORT OF WALLA WALLA,
Walla Walla, Wash., February 26, 1969.

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

DEAR SENATOR JACKSON: I have been asked to write to you in behalf of the Commissioners of the Walla Walla Port District in regard to the forthcoming Touchet River Project Hearings. We would like this letter introduced in the hearings of your committee as showing complete support of this project by the Port of Walla Walla.

For many years this project has been studied thoroughly and the many benefits are obvious. However, we feel several items are of prime importance to this area and are essential to the growth of southeastern Washington. These are, of course, domestic water for the cities of Dayton and Walla Walla; flood control to eliminate the many millions of dollars of damage that has occurred in past years; and, of course, the additional irrigated land this project would offer. As an added bonus, there are the untold benefits of recreation that would come with the completion of this program.

We respectfully and sincerely urge that all necessary steps be taken to bring about the authorization and construction of this project at the earliest possible date.

Sincerely,

RICHARD M. WHITE,
General Manager.

COLUMBIA COUNTY,
OFFICE OF BOARD OF COUNTY COMMISSIONERS,
Dayton, Wash., February 28, 1969.

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

SIR: During the hearing on March 4 before the Senate subcommittee on water and power, Mr. Vernon Marl will appear to testify on the need for a dam on the Touchet river. Mr. Marl is a Director in the Touchet Valley Irrigation District and a County Commissioner of Columbia County.

As a county government, we wish to express ourselves concerning the benefits to be derived by the construction of the Touchet River Dam.

The reservoir created could supply a controlled flow of water for irrigation of some 10,000 acres of land in Walla Walla and Columbia counties.

Due to disastrous floods in December 1964, January 1965, then again in January 1969, we foresee good flood control by having a minimum of stored water in early December of each year. This would handle the excess flow.

The well that supplements the city water supply coming from the Touchet river normally produces 850 gallons per minute. The dry year of 1968 reduced production to 625 gallons per minute. This well was deepened and yet the water level dropped 90 feet.

The Green Giant Company requires 1½ million gallons of water per day during their canning season. A great percentage of the volume needed is secured from the city water supply. The point we wish to make here is that impoundment of water behind a dam would create a subterranean action, thereby keeping the ground water level higher throughout the territory.

The lake so formed would, also, benefit a large area as a recreational site.

Very truly yours,

ROY CADMAN,
Chairman.

HUGH JACKSON,
Board of County Commissioners.

WAITSBURG COMMERCIAL CLUB, INC.,
Waitsburg, Wash., February 25, 1969.

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

DEAR SENATOR JACKSON: The Waitsburg Commercial Club, representing business and civic interests of our farming community, is highly encouraged by the word that hearings have been scheduled for March 4 on the bill to authorize construction of the Touchet division of the Walla Walla project.

This project is of vital interest and importance to our area. The flood control capacity of such a project would remove the threat of floods which have, with discouraging frequency, devastated the entire valley. From the point of irrigation we all visualize the growing of new row crops which will enable our local Green Giant Cannery to process new food items. Other benefits which would accrue with the realization of this project would be the development of recreational facilities centering on the reservoir and the re-emergence of the Touchet-Walla Walla River system as a salmon-spawning ground.

We are certain you will continue to work diligently on behalf of this legislation. Should there be any way we can assist, at any time, please let us know.

Sincerely,

IVAN K. KEVE, *Secretary.*

COLUMBIA COUNTY SPORTSMEN'S ASSOCIATION,
Dayton, Wash., February 27, 1969.

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

DEAR SENATOR JACKSON: The members of Columbia County Sportmen's Association have, at numerous meetings, voted in full support of this Project.

The Touchet River supported a natural migration and spawning cycle of Chinook salmon in the early 1900's. This was destroyed by excessive use of

irrigation water which prevented the returning salmon to reach their spawning beds. One important phase of the Touchet Dam is to provide an adequate flow of water on a year-round basis. This not only will supply adequate irrigation water, but will make it possible to restore Chinook salmon into the Touchet River. Re-establishment of this natural resource will benefit the commercial salmon industry as well as the recreational facilities and related businesses.

The Touchet River has been subjected to devastating floods in three instances within the past four years. Damage to farm lands has been very substantial. Bulldozer work has been necessary to return the river to its original channel. The river bed for many miles has been changed to a sluice with resulting loss of good stream texture necessary to supply food and protection to trout and anadromous steelhead. Another important phase of the Touchet Dam is to provide flood control. This protection would provide a controlled stream flow at normal volume to prevent flooding.

We urge your continued support of the Touchet Division of the Walla Walla project.

G. C. ZIER, *Secretary.*

KIWANIS CLUB,
Dayton, Wash., February 28, 1969.

HON. HENRY M. JACKSON,
Interior and Insular Committee,
Washington, D.C.

DEAR SENATOR JACKSON: The Dayton Kiwanis Club will appreciate any effort made by you to expedite an early approval of the Touchet Valley project.

Continued delay will only result in extended loss in valuable land, homes, and property; and of course, the Irrigation Project.

With kindest regards for your personal effort, we remain,

Very truly yours,

Col. WESLEY E. CALKINS, *President.*

DAYTON LIONS CLUB,
Dayton, Wash., February 28, 1969.

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

GENTLEMEN: We the members of the Dayton Lions Club, an active service club in the town of Dayton, Columbia County, Washington, wish to avouch our full support towards the passing of the Dayton Dam Project on the Touchet River.

It has become most evident that our local area needs this dam, not only as an agriculture improvement, but most imminently we wish to avow the need of this project to avert future floods of the nature and frequency we have had in the past four years, most recently this past January 4-5-6, 1969.

We would sincerely appreciate your help, consideration and support as it pertains to the successful implementation of this project.

Sincerely yours,

KENNARD LITERAL, *President.*

CHAMBER OF COMMERCE,
Walla Walla, Wash., February 24, 1969.

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

DEAR SENATOR JACKSON: We are gratified that the bill to authorize the Touchet River (Dayton) Project as proposed by the U.S. Bureau of Reclamation has again been introduced in the Senate, and that similar action is being undertaken in the House of Representatives by Mrs. Catherine May. It is our desire that this letter be included in the hearing record of your Committee as evidence of the wholehearted and continuing support of the Walla Walla Chamber of Commerce.

The people of Touchet River Valley have actively sought this project for many years, as the appropriate means to control the repeated damaging floods and conserve the annual flood waters that now run unused into the ocean.

The project will provide much needed irrigation water throughout the valley, bringing a firm supply to lands now inadequately supplied as well as a substantial

additional acreage; provide urgently needed security against floods at Dayton, Waitsburg, Prescott and Touchet as well as farm lands adjoining the river.

The project will also insure an adequate municipal water supply to the city of Dayton; improve quality of the flowing waters the full length of the river; provide good water-based recreational opportunity, now absent in the locality; and assist in the re-establishment of the migratory fish now tributary to the Columbia River.

There will be other benefits, both local and far reaching, in terms of resource development, employment and community growth. We are sure this project, the first in this area, will yield continuing benefits over the years and will mark the beginning of much needed water storage development in this section of South-eastern Washington. The recent floods experienced, as well as those of 1964-65 have again reinforced the obvious need for protection against repeated floods, which the project can provide, together with local channel works.

The Agriculture and the Economic Development Committees in particular, as well as the Walla Walla Chamber of Commerce as a whole, have encouraged and supported this proposal actively since investigations were initiated in the 1950's. We offer our continued support in any way possible, and do respectfully urge that all necessary action be taken to authorize the Touchet River Project, looking to early construction of this worthy development.

Sincerely yours,

DAYL GRAVES, *President.*

CHAMBER OF COMMERCE,
Dayton, Wash., February 26, 1969.

Senator HENRY M. JACKSON,
Chairman, Interior and Insular Affairs Committee,
Washington, D.C.

DEAR SENATOR JACKSON: First, permit us to extend our thanks to you for your perseverance and continued support of the Touchet Division of the Walla Walla Project for these many years.

We of the Dayton Chamber of Commerce, speaking directly for the business community and indirectly for the entire citizenry, ask sincerely that the Touchet Division of the Walla Walla Project receive prompt and favorable action.

The need is now . . . the need was never greater.

Dayton and the Touchet Valley suffered heavily in 1964-65 from floods. Just four years later, not 20 years later as was the prediction, a similar flood has raised havoc in the community and in the valley.

The past year of 1968 saw semi-drought conditions strike the area. Crops . . . asparagus, apples, wheat and green peas . . . were heavy hit. The City of Dayton and the city's prime industry, the Green Giant Company, felt the drought as water supplies became critical.

These are just two reasons why the entire community would like to see this long-standing project reach culmination. With the favorable benefit-to-cost ratio declared for the Touchet Division and the many other related benefits, this project is highly justified.

We again ask your personal support and the support of the sub-committee and the full committee in advancing this legislation to authorization and construction.

Thank you for both your time and your assistance.

Sincerely,

A. P. MONTGOMERY, Jr., *President.*
C. A. SHARPE, Jr., *Secretary.*

WAITSBURG, WASH., February 28, 1969.

HON. HENRY M. JACKSON,
Chairman, Senate Interior and Insular Affairs Committee, U.S. Senate, Washing-
ton, D.C.

DEAR SENATOR JACKSON: My name is Glen Hofer, and I am a home and crop-land owner within the boundaries of the Touchet Valley Irrigation District in southeastern Washington. My property is located near the City of Waitsburg, and I wish to represent to your committee the popular support prevalent throughout the entire community for the water storage project proposed in S. 743.

Our section of the Touchet Valley, already the site of a vegetable canning and freezing industry, would benefit substantially from the considerable expansion

in row crop and fruit production that an adequate, consistent water supply would make possible. In addition, the flood control capacity of such a project would remove the threat of floods which have, with discouraging frequency, devastated the entire valley. Three floods since 1964 have been particularly destructive to my fields, completely washing away more than eight acres of irrigated bottom land bordering the Touchet River, and depositing gravel bars and debris on several more acres making them non-productive.

Development of recreational facilities centering on the reservoir created by such a project and the re-emergence of the Touchet-Walla Walla River system as a salmon-spawning ground are further benefits which would accrue with the realization of such a project.

With such positive factors in mind, it is readily apparent that the impact of a Touchet Valley Dam would revitalize the economy of the entire area and help it stand firm against the trend toward centralization of industry and population in urban areas.

My friends and neighbors join me in urging favorable consideration of S. 743.

Sincerely,

GLEN HOFER.

EASTSIDE IRRIGATION DISTRICT No. 6,
Touchet, Wash., February 27, 1969.

VERNON MARLL,
Dayton, Wash.

DEAR MR. MARLL: Will you please pass on to the Senate subcommittee our continued support of the Touchet River project.

This project would give our water users the needed summer water supply that is essential to the full development of this area. It would also help solve our ditch maintenance problem of removing debris from the ditch washed in by flood waters.

Sincerely yours,

LOUIS E. RILEY,
Secretary.
CARL L. HARRIS,
DUANE DODD,
LARS DUNKIN,
Directors.

The CHAIRMAN. Our next witness, and the last witness, is Mr. Gilbert G. Stamm, the Assistant Commissioner of the Bureau of Reclamation. Mr. Stamm, we are glad to welcome you and your associates this year to the committee.

STATEMENT OF GILBERT G. STAMM, ASSISTANT COMMISSIONER, BUREAU OF RECLAMATION, ACCOMPANIED BY JIM CASEY, ASSISTANT CHIEF, PROJECT DEVELOPMENT DIVISION, WASHINGTON, D.C.; RUPERT SPEARMAN, AREA ENGINEER, SPOKANE, WASH.; AND WILLIAM WHITE, BUREAU OF SPORTS FISHERIES AND WILDLIFE

MR. STAMM. Mr. Chairman, I would like to ask, if I may, that Mr. Jim Casey and Rupert Spearman sit at the table with me.

The CHAIRMAN. Very good.

I wonder, before you start your formal statement, if someone would go up to the map and just give a recapitulation of the project. I think this would be helpful.

MR. STAMM. Yes, sir; we will be happy to do that.

The Touchet division map is already up, so we will start with that

one. The Touchet River flows across the northern part of that map, and then drops down into the Walla Walla River. At the present time, there is no control on the Touchet River.

The CHAIRMAN. Please explain where the Walla Walla River goes.

Mr. STAMM. The Walla Walla River flows into the Columbia. The small key map shows the relationship of the Walla Walla River, the Snake River just above it, and the Touchet River.

Senator ALLOTT. The Snake would be north of this map?

Mr. STAMM. Yes. The confluence of the Snake with the Columbia is upstream from the mouth of the Walla Walla River.

The Touchet River comes into the Walla Walla, and then the two together flow into the Columbia downstream from the confluence of the Snake and Columbia Rivers.

The proposal is to construct Dayton Dam and Reservoir on the Touchet River about 4 miles above the town of Dayton, Wash.

The CHAIRMAN. Those floods cover quite an area of the valley.

Mr. STAMM. The reservoir capacity is only about 53,000 acre-feet. It would trap the inflow from several streams, the upstream tributaries, Robinson Creek, Wolf Creek, and the East Fork of the Touchet River. It would, in fact, trap virtually everything except the South Fork, which comes in between the dam and the town of Dayton.

This dam would provide for regulation of the flows in Touchet River, would protect the city of Dayton, the communities downstream of Waitsburg and Prescott, and all of those lands which are in a comparatively narrow band along the river, all the way to the town of Touchet. The town of Touchet is where the Touchet River meets the Walla Walla.

The CHAIRMAN. Would you point out the area that would be irrigated?

Mr. STAMM. The green lands on the map are lands that are presently irrigated, and will receive a supplemental water supply. The yellow lands are irrigable lands within the division that will receive a full water supply.

They will have a greater requirement for water per acre of land than will the green lands. The brown lands are irrigable lands which are not now included within the district, but which may well come in the comparatively near future. There has been considerable interest indicated by owners of those lands.

The CHAIRMAN. Do you want to discuss at this point, too, the salmon rehabilitation program, Mr. Stamm?

Mr. STAMM. Yes, I will be happy to do that. It is all included in my statement, but I will be happy to do that, if you wish.

The opportunity is here to restore the salmon runs in the Touchet River. At the moment, the only anadromous fish which can survive in the river are steelhead whose spawning habits are compatible with the natural flow patterns. The problem with salmon is due in part to the low flows as well as some water quality problems, both of which will be corrected.

There will be outlets placed at several elevations in the dam, so that the temperature of the water can be regulated in the stream. The reservoir will be operated to maintain adequate flows in the stream to pro-

vide for the anadromous fish. There will be fish facilities, a ladder installed at the diversion dam downstream, and facilities installed at the dam in order to collect the fish going upstream to carry them over the dam and into the reservoir above, so that they can get to the spawning areas. There will also be collection facilities to get the fingerlings and carry them downstream. A substantial part of the cost is allocated to fish benefits because of the major benefits this project will have on the anadromous fish runs.

Mr. Chairman, do you want to review the map of the Kennewick extension now, or do you want to proceed?

Senator ALLOTT (presiding). Why don't you go ahead with the Touchet first, and the Dayton Dam, and then take the other one?

Mr. STAMM. Yes, sir.

The departmental report on this bill has been hand carried to the committee this morning. We realize this is very late. The report has been made available to the committee without the benefit of approval by the Bureau of the Budget.

This is certainly a policy that I know the committee frowns on, and we do, also, but the Department is considering a number of policies with regard to irrigation projects, and there just was not time in this case to clearly consider and clarify its many policies.

Nevertheless, I feel sure that in this case, that this particular project is not involved in any major way in any policies under consideration and, therefore, the Department does recommend enactment of the bill.

The Walla Walla project will encompass ultimately several divisions, which together will conserve and utilize the water resources of the entire Walla Walla River Basin, which straddles the boundary between the States of Oregon and Washington.

Today, however, we are concerned only with the Touchet division, which is entirely in the State of Washington. It will put the waters of the Touchet River to beneficial use for irrigation, municipal and industrial water, fish and wildlife enhancement, recreation, and also will provide much needed flood control.

The Touchet River now has no reservoir regulation.

Every year, in the pattern of all tributary streams, in the Pacific Northwest, it floods its valleys in the spring, and by late summer the flow is drastically diminished.

Although some lands were irrigated a century ago, only 5,000 to 6,000 acres have been developed to date, and much of this land does not have a full water supply.

Irrigation from the river has been primarily by simple gravity diversion, but in recent years the acreage served by pumping has increased.

Water rights on the river have been adjudicated and a complex system of priorities has been established.

It is proposed to build Dayton Dam and Reservoir on Touchet River about 4 miles upstream from Dayton, Wash. The dam would be a rolled earthfill structure about 200 feet high.

The reservoir would have a storage capacity of 52,600 acre-feet, of which 4,400 acre-feet is inactive capacity and will provide a minimum pool for fish; 33,200 acre-feet would be used for conservation storage, for irrigation, municipal water, and fish and wildlife purposes; and

15,000 acre-feet for joint storage to be used seasonally for flood control and conservation.

Reservoir right-of-way required for all project purposes totals 1,473 acres, all now in private ownership. Of this total, two 20-acre tracts would be acquired specifically for recreation use.

Water would be released from Dayton Reservoir into the Touchet River channel, from which it would be diverted by the irrigators and the city of Dayton through their own facilities.

Irrigation water would be served initially to some 9,960 acres of land, 3,520 acres requiring a full water supply and 6,440 acres requiring supplemental water.

These lands are located in a narrow band along the Touchet River. About 2,000 acres are in two established irrigation districts downstream, near the confluence of the Walla Walla River, and the remainder is in the newly formed Touchet Valley Irrigation District.

The lands are admirably suited to sprinkler irrigation, being about 61 percent class I. Ownerships are generally in small tracts, and no difficulty is anticipated in complying with the excess land provisions of reclamation law.

The dry land proposed to be irrigated is now used mainly for forage crops. Under project conditions row crops would become important, dry farm wheat acreage would be replaced by other crops, and the acreage of specialty crops mainly vegetables for canning and freezing, would increase.

The production of livestock also would increase.

Dayton Reservoir would support a substantial resident sport fishery and provide waterfowl and wildlife habitat.

Water would be released from the reservoir as needed to maintain anadromous fish runs in Touchet River. Facilities for fish enhancement would consist of a trap below the dam, a hopper and tramway to carry upstream migrants over the dam, multilevel outlets in the dam for temperature control, and a fish collector system for downstream migrants.

Recreation facilities would include boat ramps and docks, sanitary facilities, access roads and parking areas, and overnight camp units. The reservoir and wildlife areas would be fenced to protect wildlife cover from livestock trespass and to aid in regulating hunter use.

The city of Dayton, Wash., has indicated its interest in participating in the project by purchasing 1,000 acre-feet of water annually from Dayton Reservoir. The estimated use for this purpose is 500 acre-feet for the first 10 years, and the full 1,000 acre-feet thereafter.

Flood control is an important purpose of the Touchet Division. The reservoir operation plan is based on runoff forecast and joint use of a portion of the storage space for flood control and conservation on a seasonal basis.

A hydrometeorological network of snow courses, gages, and forecasting equipment would be operated in conjunction with the division. Unpredictable rain floods having high peak and low volume runoff frequently occur in the basin.

These could generally be controlled in Dayton Reservoir.

The December 1964 and January 1965 floods in the Touchet River

Basin were especially destructive, and the floods of this past January 1969, inflicted additional widespread damages.

The estimated peak flow at the Dayton damsite in January 1965 was approximately $3\frac{1}{2}$ times the previous record. Many homes, irrigation and municipal water diversion facilities, highways and bridges, and a section of the Northern Pacific Railroad were extensively damaged in the narrow river valley.

Silt and debris deposition in urban and rural areas was widespread. The entire river basin was declared an emergency flood disaster area.

Damages of \$1,290,000 would have been prevented had Dayton Reservoir been in operation during those floods. In recognition of this new hydrologic data and in conformance with modern engineering practice we have redesigned the spillway at the dam at some increase in estimated cost.

Dayton Reservoir would be a popular recreation attraction, as it would be in the only sizable lake in the general area. The National Park Service prepared a recreation plan for the reservoir including facilities for boating, swimming, water skiing, camping, picnicking, and hunting.

Dayton Reservoir is designed to the maximum economic capacity of the site and will provide the practical limit of control of the water resource. The average annual water yield through storage regulation will exceed the initial water requirements by about 23,700 acre-feet annually.

Potential irrigable land in the valley however far exceed the area which could be irrigated with that amount of water and there are indications that the deferred yield will be subscribed shortly.

Future needs of the city of Dayton and other municipalities may also require some of this water.

Based upon its experience working with the provisions of the Federal Water Pollution Control Act Amendments of 1961, the Department of the Interior has considered possible changes in the role of water quality in the evaluation of Federal projects.

The Department has proposed to the Water Resources Council and the Bureau of the Budget a revised analytical procedure and cost-sharing arrangement.

While our recommendation has not been adopted for general use within the executive branch its precepts have been reflected in our analyses of the Touchet Division.

We submit that an adequate quantity alone of water may not be sufficient to produce benefits to irrigation, municipal and industrial water supply, fish and wildlife, or recreation unless the water is also of suitable quality.

It therefore follows that measures to provide suitable quality for one or more of these purposes creates benefits for that purpose.

Accordingly, we would ascribe all benefits to the purpose requiring quality enhancement and seldom would it be necessary and economic to ascribe benefits to water quality as such.

Costs would be allocated in the customary manner, and there being no benefits ascribed to water quality there would not be any cost so allocated. Since there are well established statutory principles for all

water resource uses in which quality is a parameter our policy assumes that existing provisions of law and policy would govern reimbursement.

During the vegetable processing season from May to September of each year, cannery wastes escaping to the Touchet River cause a reduction of dissolved oxygen in the stream that is critical on anadromous fish passage and spawning.

The irrigation releases from Dayton Dam would be sufficient in quality and quantity to correct this seasonal situation and thereby result in an improved fish environment leading to fish and wildlife enhancement benefits.

This being the only economic detriment of adverse water quality in the Touchet River in the preproject condition, the benefits should be expressed as fish and wildlife enhancement benefits.

The net effect on the Touchet River division is to eliminate the previously claimed water quality benefits, to reduce the benefit-cost ratio, and to shift the cost previously allocated to water quality to the other purposes.

Senator ALLOTT. Could I ask you a question there, Mr. Stamm?

Mr. STAMM. Yes, sir.

Senator ALLOTT. Do I understand the situation to be that these people are now dumping cannery wastes into the river?

Mr. STAMM. They have been; yes, sir.

Senator ALLOTT. I don't mean right now at this minute, but during the canning season?

Mr. STAMM. Yes, sir.

Senator ALLOTT. Well, Mr. Marll is shaking his head the other way. What about that, Mr. Marll?

Mr. MARLL. Mr. Chairman, I have very close contact with the Dayton sewage disposal plant; in fact, my brother operates the city sewage disposal plant, and it has won the highest recommendations of the State of Washington in sewage disposal. I think you will find that there has been a lot of work done on this very matter of water pollution. I don't like to cause any dissension, I am very close to each one of you fellows and with the Bureau of Reclamation, but I do know that they are working very hard on this matter, and we have studied this very much.

(Subsequent to the hearing, the following additional information was received:)

DAYTON, WASH., March 4, 1969.

Mr. VERNON MARLL,
Dayton, Wash.

DEAR VERNON: Regard to your telephone call concerning the waste water at our Dayton and Waitsburg Plants.

The plant waste passes over a link belt shaker which is equipped with a fine screen, at least 30 mesh per square inch, which separates the solids from the liquid. The solids are then transported to a disposal area for storage then can be used for livestock feed or if not used for feed the waste is put into a pit which is covered with soil at the end of the processing season.

The liquid waste is disposed of by pumping to a field located outside the City Limits where it is used for irrigation. The water is applied to the soil by an overhead sprinkler system.

If by chance, our pumping system should fail, the waste water is disposed of by going through the City sewer system, this would be for only a very short period of time.

This waste disposal system was put into operation at our Dayton plant many years ago with the aid and assistance of personnel from the State Pollution Control Commission.

This has been an excellent means of waste disposal, we have had no problems with contamination of local streams in our area, and also no loss of plant production.

R. R. RICHTER,
Plant Superintendent.

WATER POLLUTION CONTROL COMMISSION,
Spokane, Wash., March 7, 1969.

Mr. VERNON MARLL,
*Chairman, Touchet Valley Irrigation District,
Dayton, Wash.*

DEAR MR. MARLL: The following comments are offered as a status report on water quality conditions in the Dayton-Waitsburg area with particular regard to the industrial waste situation. We have also taken the liberty of enclosing a copy of our recent letter to the Spokane office of the Bureau of Reclamation in which we have briefly outlined the industrial waste sections of the Washington Water Pollution Control Law.

The two industries of primary concern to water quality conditions are the Green Giant Company vegetable processing plants in Dayton and in Waitsburg. The Dayton plant utilizes a maximum of 2,500,000 gallons of water per day, when operating, and process asparagus and peas. Normally, their season runs from the middle of April through the middle of July. The Waitsburg plant utilizes a maximum of 2,550,000 gallons of water per day and processes asparagus, peas, lima beans and cauliflower. Their season usually runs from June through the middle of October with lima beans and cauliflower being the later product. We might also point out that lima beans and cauliflower are somewhat minor compared to the asparagus and pea runs and, therefore, use considerably less water.

For several years now, both of these plants have disposed of their waste water by sprinkler irrigation. This method of disposal is now gaining wide acceptance and has proven to be quite adequate throughout Eastern Washington. Briefly, the sprinkler operation consists of applying the waste water to agricultural land where seepage and evaporation consume the water. Application rates are controlled so that runoff to nearby water courses does not occur. These same application rates control seepage and we have not been able to detect any interference with underground waters as a result of this type of waste water disposal. We necessarily should point out that the operations in Dayton and Waitsburg have an excellent record of operation and we are not aware of any problems connected with these facilities.

Prior to the installation of the sprinkler facilities, water quality problems did exist in this area. We now believe that these problems have been corrected and adequate facilities are now being utilized to control and prevent such recurrences.

Both the towns of Dayton and Waitsburg have adequate domestic sewerage systems and provide secondary treatment prior to discharging to the Touchet River drainage system. This is an adequate degree of treatment, and we do not anticipate the necessity of requiring further treatment or changes to the existing system to enhance water quality conditions in the receiving streams.

The above-mentioned entities are the primary potential sources for water pollution problems in the Touchet River valley. As pointed out, they all adequately control their wastes, and the primary water quality problem in the river at this time is siltation from erosion and flooding.

This would seem to be the extent of our comments at this time, however, we would be most happy to discuss any of these situations in further detail should you so desire.

Yours very truly,

JAMES P. BEHLKE, *Director.*
THOMAS G. HAGGARTY, *Regional Engineer.*

Senator ALLOTT. What I am really trying to find out is if the water enhancement is going to depend entirely upon the additional amounts of water dumped in the river?

Mr. STAMM. Well, I mention this in particular, Mr. Chairman, because initially, the feasibility report for this project did recognize some water quality benefits, and some costs allocated to it. We found on more careful analysis, that the need to improve water quality normally serves some other purpose than just water quality itself.

Either water is not suitable for irrigation, or it is not suitable for municipal purposes, or it is not suitable for fish. Therefore, if you need to improve quality, the cost of improving that quality and the benefit should go to the end use, rather than to quality as of itself. I was talking about the cannery, not the sewage disposal plant—

Senator ALLOTT. That is what I was asking about.

Mr. STAMM. The cannery, during the canning season discharges some partially treated wastes in the river which reduce the quality to a point that the quality is adverse to anadromous fish.

Now because of the emphasis on water quality control, there will be, in all future installations, very rigid control of the quality of the effluent from any expansion of the plants. Also there has been a concerted effort to improve the treatment at the existing facilities, so that the effluent from any existing facilities also will be cleaned up. The primary purpose of my explanation was to explain why, in the feasibility report, which was printed, we had costs allocated to water quality, and now we do not.

Even if the quality deterioration, based on past practice from the cannery, continued to prevail during the season when the effluent goes into the river, water releases for irrigation will be sufficient to dilute it, so that it would be satisfactory for the anadromous fish runs.

Senator ALLOTT. Well, this still does not get at the basic question I am concerned with.

In the South Platte in Colorado, canneries, sugar beet factories, have had to go to some considerable expense to get away from dumping their wastes into the river. I think this is the first approach, rather than just getting more flow. The point is to clean up the water and make it acceptable.

Mr. STAMM. We agree with you.

Senator ALLOTT. As a matter of fact, the pressure from the Federal Government as well as the State Government upon these various facilities has been so great that they have had to do considerable extra work the last few years.

Mr. STAMM. We agree with you completely.

The estimated cost of constructing the Touchet division is \$22,774,000 at January 1969 prices. The language in section 6 of S. 743 should be amended to provide for the appropriation of that amount. The effect of the current costs, benefits, and policy decisions discussed above compared with the feasibility reports is demonstrated in the tabulation attached to this statement.

The CHAIRMAN. I think it would be well to put the tabulation at this point in the record and follow with your explanation of the figures.

(The data referred to follows:)

ECONOMIC AND FINANCIAL ANALYSIS, TOUCHET DIVISION

	Feasibility report (April 1962 costs)	Current analy- sis (January 1969 costs)
Construction cost allocation:		
Irrigation.....	\$5,347,000	\$9,014,000
Flood control.....	738,000	1,004,000
Municipal and industrial.....	114,000	150,000
Fish and wildlife enhancement.....	7,972,000	12,261,000
Recreation.....	187,000	195,000
Water quality control.....	1,351,000	0
Highway improvement.....	0	150,000
Total.....	15,709,000	22,774,000
Annual equivalent costs:		
Construction costs.....	528,600	818,600
Operation and maintenance.....	72,300	78,700
Total.....	600,900	897,300
Annual equivalent benefits:		
Irrigation.....	806,500	816,500
Flood control.....	42,200	49,500
Municipal and industrial.....	11,400	11,400
Fish and wildlife.....	657,000	656,900
Recreation.....	19,400	19,400
Water quality control.....	135,200	0
Adjustment.....	-7,800	-7,800
Total.....	1,663,900	1,545,900
Benefit-cost ratios:		
Total benefits.....	¹ 2.77:1	² 1.72
Direct benefits only.....	¹ 2.34:1	² 1.47
Reimbursement:		
Irrigation allocation.....	\$5,347,000	\$9,014,000
Deferred capacity.....	2,813,000	4,741,000
Initial irrigation.....	2,534,000	4,273,000
By water users.....	³ 1,298,500	⁴ 1,214,500
Net M. & I. revenues.....	⁵ 300,000	⁶ 226,000
Federal Columbia River revenues.....	⁷ 935,500	⁸ 2,832,500
Municipal and industrial allocation.....	114,000	150,000
By M. & I. water users.....	114,000	150,000
Fish and wildlife allocation.....	7,972,000	12,261,000
Federal share.....	7,340,000	11,309,000
Non-Federal share.....	632,000	952,000
Recreation allocation.....	187,000	195,000
Federal share.....	109,000	99,000
Non-Federal share.....	78,000	96,000

¹ 100 years, 3 percent.² 100 years, 3¼ percent.³ 51 percent.⁴ 28 percent.⁵ 12 percent.⁶ 6 percent.⁷ 37 percent.⁸ 66 percent.

Mr. STAMM. In accordance with reclamation law, the costs allocated to irrigation would be reimbursable without interest. The water users in the initial development would pay a total of \$1,214,500 in 50 years or about 28 percent of the cost allocated to the initial development of the irrigation. This amount of repayment is based on three levels of charges; \$5.40 per acre for those lands having no present irrigation supply; \$3.80 per acre for those having a partial but seriously deficient supply; and \$1 per acre for those having a reasonably good supply with shortages only in mid and late season.

A development period of 10 years is recommended for the lands which have no existing water supply rights and a lesser period for those which have a partial but seriously deficient water right.

The remainder of the irrigation allocation associated with the initial development—\$3,058,500—would be repaid from revenues derived from the Columbia River Federal power system and the sale of municipal and industrial water.

The allocated costs for deferred use reservoir storage capacity amount to \$4,741,000 all of which is tentatively allocated to irrigation. If the deferred use storage capacity is not contracted for within the repayment period, that cost would be repaid from power revenues.

Costs allocated to municipal and industrial water supply would be repaid with interest as provided by the Water Supply Act of 1958.

The municipal and industrial water rate is expected to be \$10 per acre-foot plus annual operation and maintenance costs. The city of Dayton will divert directly from the river, using its own facilities.

This division contemplates establishing new populations of salmon in the Touchet River, where steelhead are now the only anadromous species which can survive.

To this end the plan includes year around releases of water from the reservoir specifically to maintain an adequate flow of water of suitable temperature from the proposed dam to the mouth of the river, mechanical means of permitting adult salmon to pass the dam on their way to upstream spawning areas, and specially designed outlet facilities to permit young fry to swim safely past the dam on their way to the sea.

These releases would also maintain the quality of water in Touchet River during the nonirrigation season. The costs associated with conservation and enhancement of anadromous fish total \$9,082,000, of which \$6,243,000 is associated with separable facilities and \$2,839,000 with joint facilities.

Total costs allocated to fish and wildlife enhancement total \$12,261,000. We find that \$11,309,000 would be nonreimbursable and the remainder of the allocation, \$952,000 plus \$62,000 interest during construction, would be reimbursable with interest.

Costs allocated to recreation total \$195,000 of which \$96,000 plus \$7,000 interest during construction would be reimbursable with interest.

The Port of Columbia County has informed us that it is willing to assume the responsibility of administering and cost sharing the land and water areas for recreation and fish and wildlife enhancement at the Dayton Dam and Reservoir in conformance with the provisions of the Federal Water Project Recreation Act.

Since the feasibility report was completed, the State of Washington has upgraded its highway design standards. The road which must be relocated around Dayton Reservoir therefore will be to a higher standard than the existing road, and the incremental cost of that improvement, estimated at \$150,000 would be nonreimbursable under provisions of the Flood Control Act of 1962.

The Touchet division is a thoroughly justified and feasible multiple purpose reclamation development. Its economic justification is demonstrated by the favorable total benefit-cost ratio of 1.72 to 1.

The direct benefit-cost ratio would be 1.47 to 1.

The potential water users are completely in accord with the plan of development and are prepared to contract for water service.

I recommend that the committee act favorably on S. 743 with the amendment that has been proposed.

Now as I mentioned in the statement, there is attached a tabulation which gives the detail on the economic and financial analysis for the project.

Senator BURDICK (presiding). Mr. Stamm, you say that the water user's cost would be, on page 7, \$1,214,000, initial development. Are the

costs for water users under this bill in your projection the same as it was in 1965?

Mr. STAMM. Yes, sir; this is based on ability to pay analyses, and the water user reimbursable cost remains the same.

Senator BURDICK. Well now this project has increased from \$16,630,000, as of 1965 prices, and now is over \$22 million.

Mr. STAMM. Yes, sir.

Senator BURDICK. But "cost to water users," you mean is the same now, as the rest of the costs incurred?

Mr. STAMM. The additional reimbursable cost would be charged to the basin account, and would be repaid from power revenues.

Senator BURDICK. In other words, the project today has more non-reimbursables in it than the project in 1965.

Mr. STAMM. Yes, sir.

Senator BURDICK. What percentage of the total project is nonreimbursable?

Mr. STAMM. It appears that——

Senator BURDICK. Would you say that 60 percent nonreimbursable would be about right?

Mr. STAMM. Well, because of the large allocation to anadromous fish and wildlife benefits, the percentage of nonreimbursable costs is quite high. Of the total cost, for example, the nonreimbursable cost to fish and wildlife alone is \$11,309,000 and to recreation is \$99,000 so that over \$11 million of the \$22 million is nonreimbursable to those two functions. It is more than 50 percent nonreimbursable.

Senator BURDICK. I said 60 percent.

Mr. STAMM. That is probably getting pretty close.

Senator ALLOTT. The relationship of \$12,261,000 to \$22,774,000, is it not?

Mr. STAMM. Sir?

Senator ALLOTT. Isn't the relationship of \$12,261,000 to \$22,774,000? Which comes pretty close to Senator Burdick's statement?

Mr. CASEY. The nonreimbursable construction cost is slightly less than 50 percent nonreimbursable.

Senator BURDICK. Less than 50 percent?

Your fish and wildlife is 50 percent. It is over 50 percent.

Well, at least before the record is closed, will you supply the percentage of it which is nonreimbursable?

Mr. STAMM. We surely will. We have all the figures here. We just don't have them added up properly. I am surprised we don't have them at our fingertips, but we certainly will put into the record the total percentage of this which is reimbursable and nonreimbursable.

(The data referred to follows:)

REIMBURSABLE AND NONREIMBURSABLE COSTS OF THE TOUCHET DIVISION, WALLA WALLA PROJECT

Function	Reimbursable	Non-reimbursable	Total
Irrigation (initial).....	\$4,273,000	0	\$4,273,000
Irrigation (deferred).....	4,741,000	0	4,741,000
Municipal and industrial.....	150,000	0	150,000
Flood control.....	0	\$1,004,000	1,004,000
Fish and wildlife.....	952,000	11,309,000	12,261,000
Recreation.....	96,000	99,000	195,000
Highway improvement.....	0	150,000	150,000
Total.....	10,212,000	12,562,000	22,774,000
Percentages.....	45	55	100

Senator ALLOTT. We are at somewhat of a disadvantage too, because the figures that we had to go on were only roughly the same figures that you have presented to us this morning.

Mr. STAMM. I realize that, and I can give you a breakdown of the increases. The total project cost estimate at the last hearing before this committee was \$18,230,000. There have been increases since then.

One million five hundred and ten thousand of the increase is due to indexing up construction costs from 1967 to 1969; \$158,000 of it is due to increases in the estimated cost of right-of-way acquisition; all of the right of way is in private ownership today, and all must be acquired.

One million six hundred and forty thousand is due to the modification of the spillway, at the dam, to provide the capacity necessary to pass the maximum probable flood, based on our latest hydrological data.

Other cost increases relate to adjustments in contingency items, pay increases, administrative items, and a variety of lesser matters.

We find on many projects the construction costs continue to go up year by year, and right-of-way costs have skyrocketed in many areas. These are things we can't avoid.

Senator BURDICK (presiding). Do you have many projects that have this high a ratio of nonreimbursable costs?

Mr. STAMM. Not very many. This is due to the anadromous fish aspect. A very large part of the nonreimbursable cost is due to anadromous fish.

Senator BURDICK. Any questions from the members of the committee?

Senator ALLOTT. Yes, I have quite a few.

You have a storage reservoir of approximately 53,000 acre-feet?

Mr. STAMM. Yes, sir.

Senator ALLOTT. I believe the 1,473 acres is the maximum area that this would cover, which is a little over 2 sections of land.

Mr. STAMM. Yes, sir.

Senator ALLOTT. What is the discharge of the Touchet River at the point it goes into the Walla Walla, the annual discharge?

Mr. STAMM. This is quite erratic. I would like for Mr. Spearman to answer that.

Mr. SPEARMAN. We have had peaks, and they were speaking of these floods here earlier. The 1964 flood was 9,300 cubic feet per second, and the January 1965 flood was 7,000 cubic feet per second, and this year's flood was 6,300 cubic feet per second. These were the peak discharges during those floods.

Now I might add that this December 1964 flood, the high one, was about three and a half times the maximum record up to that date, which set a new record in flood. All three of these floods have exceeded the previous flood of record. The flow gets down, in the summertime, practically dries up, or does dry up in some sections, because of diversions from the river.

Senator ALLOTT. Well it is not necessary for my question. I will ask it another way. What is the discharge of the various tributaries on the Touchet River at the site of the dam, or at Dayton?

Mr. SPEARMAN. These records I was giving you were at the site of the dam.

Senator ALLOTT. Now again what is the annual total discharge of the river in acre-feet?

Mr. SPEARMAN. The average annual runoff there is 89,770 acre-feet.

Senator ALLOTT. How much of that is consumed in direct irrigation today?

Mr. STAMM. During the irrigation season virtually all of it. The stream is adjudicated, and the water is diverted by present irrigators. Those with the poorer rights are without water in the middle of the latter part of the irrigation season, so virtually all of the flow is taken from the river during the irrigation season.

Senator ALLOTT. All right, you have 6,000 irrigated acres at the present time, someone said.

Mr. SPEARMAN. Probably between 10 and 15,000 acre-feet might be the consumptive use. We don't have exact diversion records, but it is a rather small amount because so much of the annual flow comes off in these floods, and goes to waste.

Senator ALLOTT. Well let's keep on with this thought. You have 6,000 acres of irrigated land. What is the annual application in acre-feet per acre?

Mr. SPEARMAN. Under our project it would be three and a half acre-feet.

Senator ALLOTT. What is it now?

Mr. SPEARMAN. Up to whatever they can get in their system. I think their rights probably are based on approximately $3\frac{1}{2}$ to 5 acre-feet duty. There are some lands in the valley that do get a full water supply, that are not included in the project.

Senator ALLOTT. Well, what is the full water supply, per acre?

Mr. SPEARMAN. Per acre, three and a half acre-feet.

Senator ALLOTT. Three and a half acre-feet not 5.

Mr. SPEARMAN. Five acre-feet would be our diversion requirement for the farm delivery of three and a half acre-feet.

Mr. STAMM. It would be three and a half acre-feet at the farmer's headgate.

Senator ALLOTT. All right. Apparently you only have 89,000 acre-feet discharge at Dayton in a year. You have a reservoir that will hold 53,000 acre-feet. You have an annual use at the present time of 21,000 feet.

Mr. SPEARMAN. May I add, Senator, that we would not control the South Fork with this dam, and there is quite a runoff through it. I gave you the runoff of the whole system, and not just the North Fork. So we would develop all of the waters that can be developed on the North Fork with this reservoir.

Senator ALLOTT. Well, I am trying to get at this simple point. You have 4,400 acre-feet of inactive capacity, which is a mere puddle, and I can't see where you get the huge recreation value that is ascribed to this out of a puddle of 4,400 acre-feet of water.

Mr. STAMM. Of the total cost of the reservoir, the allocation to recreation is comparatively small. It is in the range of about \$195,000, as I recall.

The reservoir, of course, would be operated in order for the conservation pool to be full at the beginning of the irrigation season, which is also generally the beginning of the recreation season. The reservoir level would be pulled down during the irrigation season

of course, and it might well be at the end of the recreation season, which would correspond pretty much with the end of the irrigation season, that there would be mud flats around the reservoir and there would be some complaints among the recreationists, because of the small size of the pool.

Senator ALLOTT. Would the anadromous fish go through the pool and on up the rivers to spawn?

Mr. STAMM. Yes, sir; spawning areas would be upstream from the reservoir.

Senator ALLOTT. Some 40,000 fish a year was mentioned here. I presume that it is just a guesstimate, but you are spending \$12 million to develop a theoretical fishrun which does not exist.

Mr. STAMM. We have in the room, Mr. Chairman, Mr. Bill White from the Bureau of Sport Fisheries and Wildlife. These figures and these estimates of fish benefits are all provided by that Bureau, as you know. With your permission, perhaps he should come to the table and answer your questions.

Senator ALLOTT. Certainly.

Mr. WHITE. Senator Allott, we studied this very carefully with biologists of Washington State. Based on historical knowledge of the runs which had been there, before they were destroyed years ago and based on the availability of spawning area, in the main stream, and the tributaries above the dam, it is the consensus of the fishery experts concerned that the project will produce 40,000 anadromous fish a year, coho and Chinook salmon. It is their further consensus, on the basis of present catches in relation to the production in the Columbia River system, that about 30,000 of these fish will be caught each year by commercial and sport fisheries. We believe it is more than a guess, Senator.

Senator ALLOTT. You don't get anything out of the commercial fishermen for the fish. We are putting up \$12 million here to provide the fish.

Mr. WHITE. That is right, sir. It would be impossible to distinguish these fish from other fish in the Columbia River system, and we estimate that about 75 percent of the fish would be caught in the open ocean.

They would be caught by residents of California, Oregon, and Alaska, as well as by residents of Washington. They would also be caught to some extent by Canadians, so it would be rather hard to assess a commercial fisherman for these particular fish.

Senator ALLOTT. Well, it would be nice if we could get the Government to supply the raw products for other industries in this country free, such as we are doing for the commercial fishermen here. Do you know of any other instance where this is done?

Mr. WHITE. There is a somewhat comparable situation with respect to migratory waterfowl, which may be produced in one State, but taken in a number of other States. The Federal Government does finance the cost of waterfowl enhancement in this same way.

Senator ALLOTT. Is anyone shooting waterfowl commercially in this country, that you know of?

Mr. WHITE. No, sir; but as far as recreational use is concerned, the situation is quite comparable to the recreational use of anadromous fish.

Senator ALLOTT. Well it is hard for me to divide these fish into \$12 million and see where you get the value.

I see you have a contract, Mr. Stamm, with the city of Dayton. I want to go to that statement here.

As I understand it, first, to get back along the line of questions, the crop year is May to September.

Mr. STAMM. Approximately. Maybe a little longer than that.

Senator ALLOTT. Well, roughly.

Mr. STAMM. Yes.

Senator ALLOTT. That area. Now at the present time, at the present moment, when does the water supply in the river go down to the place where there is not a sufficient supply in the river to fulfill the normal demands on the river?

Mr. STAMM. I would assume that in many years as early as June there is insufficient water in the river to meet all of the irrigation requirements.

As I mentioned, the stream has been adjudicated, and some rights hold up longer than others, but those with the poorest rights would very likely in some years be out of water in June, but usually in July.

Senator ALLOTT. So you essentially have a flood river here, in which the main supply of the river is diminished or depleted by the first of June, then.

Mr. STAMM. Yes, those with poorer water rights would be out of water. Those with better water rights would have rights that would hold up throughout June, and into July, and some years, into August. You are exactly right, in that it is a river that floods in the flood season, and the flow diminishes in the summer, and the flow does not hold up long enough to meet the needs for irrigation.

Senator ALLOTT. Well, what, for example, would be the discharge at Dayton in an average month of July?

Mr. STAMM. To meet irrigation requirements?

Senator ALLOTT. To meet irrigation requirements. That is all there is below Dayton?

Mr. STAMM. Well, the flow necessary for irrigation requirements would also meet all other requirements in July.

Mr. SPEARMAN, what is your proposed discharge in July?

Mr. SPEARMAN. The minimum annual of record at the dam site was $15\frac{1}{2}$ cubic feet per second.

Mr. STAMM. Does the question assume discharges with the dam?

Senator ALLOTT. No, without the dam.

Mr. SPEARMAN. This was without the dam.

Senator ALLOTT. So you get down to a minimum of $15\frac{1}{2}$ cubic feet per second at the dam.

Mr. SPEARMAN. And at points below that, where they are making irrigation diversions, why it goes to practically zero.

Senator ALLOTT. So you have a $15\frac{1}{2}$ -second discharge in July, to serve 6,000 acres, 6,000 irrigated acres, of which some have a senior priority in various grades and dates of priority and demand.

Is that right?

Mr. STAMM. Yes, sir; in minimum years.

Mr. SPEARMAN. That is right, sir.

Senator ALLOTT. Now referring to page 7 of your statement, you have a charge of \$5.40 per acre for lands having no present irriga-

tion supply, \$3.80 per acre for those having a partially but seriously deficient supply. Upon what basis can you distinguish or justify a difference in the charge for irrigation water as a supplementary supply and as primary supply, a new supply?

Mr. STAMM. Well, in average years the land with no water supply would require about $3\frac{1}{2}$ acre-feet per year delivered, and those in the second category would require perhaps not more than 2 acre-feet, and those with a nearly adequate supply would need to be supplemented perhaps by only a half acre-foot per year.

So these rates recognize the differences in the requirements of the user for water on a quantity basis.

Senator ALLOTT. And the man who has a reasonably good supply gets up to the amount that is needed by him for \$1 an acre-foot.

Mr. STAMM. Yes, \$1 an acre. He has very little dependence on the project. He only needs a little supplemental water in the fall.

Senator ALLOTT. Why should he pay less than the man in either of the other two categories you classified here?

I have been in irrigation all my life, and I can't see the justification for selling water to a man who has a relatively senior priority, no matter what system it is based on in Washington—and I am not sure what the law is there—but I can't see any sense or any justification for making this discrimination between the man who has a good supply, a man who has a moderately good supply, and a man who is getting a totally new supply.

Mr. STAMM. Well, this, Mr. Chairman, has been done in many cases in the West. There are cases where a man with almost a fully adequate supply would perhaps be unwilling to participate in the project, if he were going to have to pay the same rate per acre for water as the man that had no water right whatsoever.

In water service contracts, of which the Bureau has many, the water is marketed on the basis of an acre-foot charge.

In many other areas it is marketed on a per acre basis. The older lands and the folks that were there and had established preproject natural flow rights are given recognition of their water right in establishing the rates per acre. This prevails in many, many projects in the West.

Senator ALLOTT. Where?

Mr. STAMM. Well, the Kennewick, to which we will direct our attention soon, is in this situation. The Kennewick highlands existed before the Federal project was ever authorized, and their rate of payment is different from the lands that came in under the 1948 Kennewick project authorization.

Senator ALLOTT. Well, here Mr. Stamm, I was reading into your statement something that was not there, but it makes your statement even more flagrant from my own point of view, and this is just one point of view. But you have \$1 per acre, not acre-feet, \$1 per acre for those having reasonably good supply.

Now after all, this is a reclamation project. We have been in one sense generous, I think, with our irrigators.

They do not pay interest, and we perhaps never would have developed the West if we had had reclamation on any other basis.

But why do you sell this water upon the basis of per acre, rather than an acre-foot?

It takes $3\frac{1}{2}$ acre-feet, it has been testified here, to grow a crop on this land. So a man who has no present water supply and who develops some of that land colored in yellow on the map—it takes $3\frac{1}{2}$ acre-feet—and you charge him only \$5.40 an acre, he is going to irrigate his land for \$1.60 per acre-foot. I don't think you can show me anywhere where any reclamation project has given a man water at that cost.

Mr. STAMM. Well, I realize that in this case we are providing stream regulation only. We are not providing his diversion facilities, nor his distribution system. This is the cost for release of water at the dam. In most reclamation projects, as you know, we provide the diversion facilities, the canals and laterals, the drainage system, all as part of the Federal cost, and all also part of the water users' obligation to repay.

In this case, he bears these costs, completely independent of the Touchet division costs.

This is only water released in the river. If you look at the storage cost alone on our other projects, you would find the cost per acre-foot of water released at the dam is substantially less than the cost delivered to the farmers' headgate. We have computed the average cost of water on the land for the farmers to be about \$17 per acre.

(The following data on the average cost of irrigation for a farmer on the Touchet Irrigation District under project operation was furnished after the hearing:)

	<i>Dollars per acre</i>
Proposed annual water charge; for full service land-----	5.40
Power for pumping and sprinkler pressure-----	7.90
Interest and equity on investment in irrigation facilities-----	1.65
Repairs -----	.33
Depreciation -----	1.53
Operating Interest-----	.24
Total -----	17.05

Senator ALLOTT. Well, there are a lot of reclamation projects we have had here before us, in which people did provide their own diversions, in which they provided their own lateral systems, and I can never recall in the 12 years I have served on this committee, any such absurd—and I do think it is absurd—cost for irrigation water.

For example with respect to the construction of Frying Pan, which as a reclamation project, back as far as 1948, which is 21 years ago, the farmers committed themselves to the payment of \$5 per acre-foot for supplemental water.

Mr. STAMM. I would be happy to review, if you wish the rates of charge that have been suggested or put into practice in similar situations in the past 10 years. I can't tell you offhand how many there may be, but these charges are based on an analysis of water user repayment capacity. We use a standard procedure throughout the West on all projects, and have for sometime, and so the results come up with a water user repayment capacity, based on standard analyses. We have not altered those procedures in connection with this project or any other specific project.

Senator ALLOTT. Now on the M. & I. the city of Dayton has diversion facilities in the river?

Mr. STAMM. Yes, sir.

Senator ALLOTT. And they buy it at \$10 per acre-foot?

Mr. STAMM. Yes, sir.

Senator ALLOTT. Can you show me any other place where M. & I. water is purchased at \$10 per acre-foot?

Mr. STAMM. Yes, sir.

Senator ALLOTT. Where?

Mr. STAMM. What is the Fryingpan rate, Mr. Casey?

Mr. CASEY. It is the same as the irrigation rate, \$5.60, plus delivery cost.

Senator ALLOTT. What?

Mr. CASEY. It is the same as the irrigation rate.

Senator ALLOTT. What is the same?

Mr. CASEY. The municipal and industrial rate. At the lake or at the river, as the case may be. Aqueduct delivery and conveyance costs, of course, are in addition to that.

The wholesale rate at the lake.

Senator ALLOTT. The Fryingpan has an ad valorem tax in addition to the water charge, however. Now we have had several of these bills before us, in the last 3 years, in which the M. & I. water runs as high as \$30 and \$35.

Mr. STAMM. Yes, sir; there have been some, but on the Colorado River project, out of Navajo, for example, the rate \$7 an acre-foot for municipal and industrial water.

Out of Yellowtail Reservoir in Wyoming the municipal and industrial rate is \$11 above the dam and \$9 below the powerplant.

Some of the older contracts in California have municipal and industrial rates of \$9 to \$10. These rates are going up, particularly in areas where the M. & I. water supply is more difficult to develop.

Senator ALLOTT. Well, now just one last question. On this project, the authorization is \$22,774,000 as I have it here.

Almost \$23 million.

Mr. STAMM. Yes, sir.

Senator ALLOTT. And of that amount the total reimbursement for irrigation is only \$4,273,000, or less than one-fifth of the total.

Mr. STAMM. Yes, sir. That is the cost allocated to the initial 9,960 acres of land to be served. About 28 percent of that is to be repaid by water users, and the remainder by power.

Senator ALLOTT. And by power?

Mr. STAMM. By power revenues; yes, sir.

Senator ALLOTT. Is there a power facility in conjunction with this?

Mr. STAMM. No, sir, but there is the Federal Columbia River Power System account, which was authorized by the Congress several years ago.

Senator ALLOTT. Now I have a note here prepared by Mr. Cook of the staff. It says it appears that approximately \$5 million of irrigation costs are not scheduled for reimbursement?

Mr. STAMM. That is the deferred use.

Senator ALLOTT. That is what?

Mr. STAMM. That is related to the deferred capacity, deferred use of capacity in the reservoir.

Senator ALLOTT. What does that mean?

Mr. STAMM. It means that the dam would be built to take advantage

of the full physical capability of the site, and it will provide initially more conservation space than we initially have commitments for from water users. The water yield of this deferred space, however, will be marketed to the water users and landowners along the river, as the districts expand, and we gain additional customers.

Senator ALLOTT. Isn't it customary to have contracts for the sale of the water before you authorize a reclamation project?

Mr. STAMM. Normally we have contracts for the irrigation aspects before we initiate construction and we will have them for the initial development of the Touchet division. The Congress has, in a number of cases, however, in order to take advantage of the physical dam sites, or for other reasons, authorized us to provide capacity for deferred uses in the initially authorized facilities.

This also is true in the Kennewick division, which this committee will hear today. Additional capacity in the main canal was authorized in 1948, and it is that capacity that will be used for the Kennewick extension.

The Crooked River project in Oregon had extra capacity, Prineville Reservoir was built with about a hundred thousand acre feet of deferred use capacity.

There have been others: in the case of the Tehama Colusa Canal, in the Sacramento River Valley of California, the Congress authorized excess capacity to permit future extension of the canal to serve lands downstream in anticipation of future agricultural use.

The deferred capacity may also be needed for municipal and industrial use along the Touchet River Valley.

Senator ALLOTT. That is all I have, Mr. Chairman.

Senator BURDICK. Senator Jordan.

Senator JORDAN. Thank you, Mr. Chairman.

Mr. Stamm, I have several questions. First of all the increase in cost, I am looking now at your sheet on economic and financial analyses, the last page of the report, comparing the two reports for 1962 costs and January 1969 costs.

The cost of this project has gone up about 50 percent in 7 years. How much of that is attributable to a change in design to accommodate more floodwaters and how much to the inflation of construction costs during that 7-year period?

Mr. STAMM. I have the detail on a sheet here.

The cost for the design modifications of the spillway at the dam is estimated at \$1,640,000.

Senator JORDAN. That is for a change in design?

Mr. STAMM. That is due to the enlargement of the spillway, at the dam; yes, sir.

Senator JORDAN. So then about \$6 million of this is due to the normal increase in costs of construction for that period?

Mr. STAMM. Yes. From 1962 to 1967 the construction costs index alone accounted for over \$2 million of increase, and between April of 1967 and January 1969 it accounts for another million and a half, so three and a half million is due to construction costs index increases alone.

Another increase of about \$400,000 is due to increased right of way costs.

Senator JORDAN. An increase in the cost of the highway replacement?

Mr. STAMM. Yes, sir, about \$230,000 is due to increased costs to meet higher standards of highway relocation.

Senator JORDAN. I suppose added all together that would account for the substantial 50-percent difference?

Mr. STAMM. Yes, sir.

Senator JORDAN. I share Senator Allott's concern about the relatively low cost of this water to the irrigators. I am familiar with this beautiful Touchet Valley.

What is the elevation there, Mr. Stamm?

Mr. STAMM. Oh, it is about 600 or 700 feet.

Mr. MARLL. Mr. Chairman, I believe it is about 1,800. Dayton is 1,600. I believe it is 1,800 feet.

Senator JORDAN. The irrigable lands have an elevation of about 1,800 feet.

Mr. MARLL. Yes. From the damsite on down.

Senator JORDAN. I know the growing season is long, and the soil is very good. It is a silt soil, and I think it is classified mostly as No. 1, is it not?

Mr. MARLL. Yes, sir.

Senator JORDAN. I know the cannery at Dayton is engaged largely in canning of row crops such as table peas, and asparagus—great asparagus country, isn't it?

Mr. STAMM. We would anticipate that there would be some asparagus with a dependable water supply.

Senator JORDAN. I see substantial acreage of asparagus when I go through the valley. My point is that these are big return crops, and I can't understand why new land, class I land, with a long growing season could not stand more than that annual cost of water.

Mr. STAMM. Well, let me expand on that a little, if I may.

I emphasize that this charge would be for water released from the dam and merely put into the river. The total cost to the farmer, we estimate, is about \$17 an acre.

Senator JORDAN. An acre?

Mr. STAMM. An acre; yes.

Senator JORDAN. That is still \$5 an acre-foot; isn't it?

Mr. STAMM. Yes, sir.

Senator JORDAN. Yes; that is still \$5. And that is still very cheap for that class of land, for that elevation, for the type of produce that you can raise on that land; is it not?

Mr. STAMM. Well, I think it is reasonable. The rates are reached through our standard procedures. Now we have not updated our payment capacity analyses for the last 2 years.

These rates come out of payment capacity analyses that were prepared 2 years ago, and it is possible, if these were reviewed today, we might come up with higher figures.

Senator JORDAN. Well, I think they ought to be updated. That land is not comparable to land at an elevation over a mile high, say 5,000 to 7,000 feet, that can only grow small grains and maybe hay crops. This same standard should not be applied across the board to land

of this character and this elevation that can produce this kind of crops. I hope you will review it, because I think it is inexcusably low.

Now, you are still using the rate of $3\frac{1}{4}$ percent, I see.

Mr. STAMM. Yes, sir.

Senator JORDAN. When are you going to change?

Mr. STAMM. Well, a directive requires us to change all of our analyses that have not yet been transmitted to the Congress, so those that are still in the Department of Interior, and are yet to be submitted, will be changed before they are submitted. Those that are already before the Congress are not required by our directive to be reevaluated. However, we know of your interest, and we have taken a look at this project, under the new interest rates.

Senator JORDAN. What would happen to this project under $4\frac{5}{8}$ -percent interest?

First let me ask, what interest rate are you applying now to new projects?

Mr. STAMM. Three and one-quarter percent.

Senator JORDAN. To new projects?

Mr. STAMM. No; three and a quarter is the interest rate that was used in evaluating this project.

Senator JORDAN. All right.

Mr. STAMM. At the time it came up.

Senator JORDAN. All right. What rate will be used for projects that come after this?

Mr. STAMM. Four and five-eighths percent.

Senator JORDAN. Have you applied a $4\frac{5}{8}$ -percent rate to this project?

Mr. STAMM. Yes, sir.

Senator JORDAN. And what results did you show with respect to its economic feasibility?

Mr. STAMM. Well, this one still has a favorable ratio, above unity, but it gets pretty close, as a matter of fact. Under the $4\frac{5}{8}$ -percent interest rate, the ratio of total benefits to costs is 1.22 to 1, and for direct benefits alone, the ratio is 1.04 to 1.

Senator JORDAN. It is 1.04 under the $4\frac{5}{8}$ rate?

Mr. STAMM. Yes, sir.

Senator JORDAN. For a hundred years?

Mr. STAMM. Yes, sir.

Senator JORDAN. Right on the borderline. If this came under the new rate it would be a borderline project; would it not?

Mr. STAMM. Yes, sir. If there were no modification of benefit evaluation.

Senator JORDAN. Well, if the modification of benefit evaluation were the other way—now I am going to talk to you about fish pretty soon—it would work against you, wouldn't it?

Mr. STAMM. I will ask my benefit-cost ratio expert to answer that, Mr. Casey.

Mr. CASEY. If I understand the question, if in the benefit evaluation study, the benefits go down, rather than up.

Senator JORDAN. Well, if we can—

Mr. STAMM. I think the Senator may be asking if the anadromous fish feature were not a part of this project—

Senator JORDAN. That is right.

Mr. STAMM. What would the benefit-cost ratio likely be?

Senator JORDAN. Yes. You don't need to calculate it.

Mr. CASEY. I have all the fish and wildlife benefits here, Senator Jordan, which are about 40 percent of the total benefits being claimed.

Senator JORDAN. That is right.

Mr. CASEY. So that, using the 1.04 ratio as a reference point, it would become 0.6 to 1. Specific costs of fishery facilities should also be eliminated from the ratio.

Senator JORDAN. Yes. You all know that the Federal Government now is paying 6 percent for 90-day Treasury notes, $6\frac{1}{4}$ percent, I should say, for 90-day Treasury notes, and I am sure you are aware that the Federal Government is borrowing money, 3- and 4-year bonds at the rate of 6 percent and upward. This \$12 $\frac{1}{4}$ million that is called nonreimbursable by reason of its being for fish and wildlife enhancement, in order to accommodate a speculative 40,000 salmon, have you ever calculated what that would cost the Federal Government at 6-percent interest? It would be \$720,000 in interest alone for 40,000 fish. An interest cost on that enhancement factor of \$720,000 a year is \$30 a fish, with no reduction in the principal.

Is that approximately right?

Mr. STAMM. I assume so; yes.

Senator JORDAN. Does anyone disagree?

Mr. WHITE. No; I have not analyzed those figures.

Senator JORDAN. Well, I will go through it again with you. It is very simple arithmetic. For \$12 million at 6-percent interest a year the annual interest cost would be—you say it. What would it be?

Mr. WHITE. I believe you said it would be \$720,000.

Senator JORDAN. Would you agree?

Mr. WHITE. Yes, sir.

Senator JORDAN. You are talking about making life happier for 40,000 fish. How much is that a fish, if the annual cost is \$720,000 interest?

Mr. WHITE. I believe it would be \$18 a fish. It would still be high.

Senator JORDAN. \$18.

Mr. WHITE. Yes, sir if the entire \$12 million is assigned to salmon enhancement.

Senator JORDAN. This is not the total cost of the fish. We keep appropriating money for every dam downstream for fish and wildlife enhancement. If this \$18 had to bear its share, pro rata, of the cost of the other dams downstream, how much do you suppose it would amount to?

Mr. WHITE. The downstream costs for fish passage and propagation have already been incurred and represent sunk costs. By adding only the salmon enhancement costs of \$6,243,00 at the Touchet project, an anadromous fishery benefit of about \$456,000 can be realized each year.

Senator JORDAN. Well, will someone sometime, I think in your Department, give us an idea, an estimate, of the dollars we are putting into enhancement of fish and wildlife on all of these dams, and evaluate it against the total resources of the fish that we are accommodating?

Mr. WHITE. We will be glad to provide that for you, Senator Jordan.

Senator JORDAN. What is the total value of the fish that are spawned in Columbia River waters? Do you know?

Mr. WHITE. It has been estimated in the past at \$18 million a year, as I recall. We shall be glad to review the matter and provide the latest figure for the record.

Senator JORDAN. I wish you would, and then could you go through the various projects—and this might be a cooperative project with the Bureau of Reclamation and perhaps others—to find out how much we are spending annually to accommodate this \$18 million value resource.

Senator JORDAN. I think it would be interesting to know, because it just seems to me that an inordinately high cost, 50 percent of the cost of this project, is credited to enhancement of fish and wildlife, as a very nebulous value in regard to the number of fish that are going to be accommodated in this spawning area.

Mr. STAMM. Well, Senator Jordan, we will be glad to work with the Bureau of Sport Fisheries and Wildlife and supply something for the record in response to your question.

(The data referred to follows:)

The expenditures for anadromous fisheries on the Columbia River system have for the major part been for mitigating the damage to these fisheries caused by blockage of the runs, inundation of spawning areas, and reductions in stream flow. We cannot call this an enhancement program. This salvage operation has maintained salmon runs which, on a net basis, result in some \$13.8 million in annual benefits to sport and commercial fisheries. Capitalized at 3½ percent this amounts to over \$400 million. The related project construction costs for fishery facilities at Federal structures amounts to some \$166.5 million with proportion of these costs being allocated to the project beneficiaries. Additional costs have been incurred by private and public power utilities in recognition of the impact of their projects on fishery habitat. The Touchet project is one of the few opportunities there has been to reverse the trend. While we have called this enhancement, looking back over the years the fisheries are still very much on the losing end.

Senator JORDAN. I think we have got to know what we are doing here. The Federal Government had a \$25 million deficit last year and we had to go into the marketplace and finance it. As I say, the short-term, 90-day Treasury notes are costing 6¾ percent interest on 3- and 4-year bonds, and I think these are some of the things we have to be looking into.

That is all, Mr. Chairman.

Senator BURDICK. If there are no further questions, I presume you can start on the other project.

Mr. STAMM. The other project is the Kennewick division extension, an extension of the Yakima project.

There is a map on the right side, and as I make reference to various facilities and portions of the project in my statement, Mr. Gugel will point them out.

Senator ALLOTT (presiding). Mr. Stamm, I wonder if, using that big map, someone could point out the location of that for me? I am not familiar with this part of the State. Where is this in Washington?

Mr. STAMM. The cities of Kennewick and Pasco are in south-central Washington. Kennewick and Pasco lie on each side of the Columbia River about 4 miles downstream from the confluence with the Yakima River.

The existing Kennewick division is essentially the green lands shown on the map, all laying south of the Yakima River, Yakima project water is delivered through the Chandler Canal to the Chandler powerplant and pumping plant.

At the time the Kennewick division was authorized extra capacity was designed in the main canal for future service to the yellow area on the map, which we will be discussing today, the Kennewick division extension.

Senator ALLOTT. We have been through this project two or three times, have we not, Mr. Stamm?

Mr. STAMM. Yes, sir.

Senator ALLOTT. I think I remember the project. It is lifted out of the main aqueduct by where it says "main relift," it is lifted into the yellow portion on the map by pump at that point, isn't it?

Mr. STAMM. Yes, sir. There is a long siphon across the draw and then there are about four relift pumping plants involved to serve those lands.

Senator ALLOTT. All right. Thank you.

Mr. STAMM. S. 742 would amend the act of June 12, 1948, which was the act providing for the construction, operation, and maintenance of the Kennewick division extension, Yakima project, Washington.

The Secretary's feasibility report on the extension has been printed as House Document 296, 88th Congress. The Department's report on this bill was just cleared by the Bureau of the Budget late yesterday, and was hand carried up here this morning.

The Department recommends enactment of S. 742 with one amendment which would increase the authorization ceiling to reflect modernization of the proposed distribution system.

The Kennewick division extension is designed to provide an adequate water supply for the irrigation of 6,300 acres of land in Benton County, southern Washington.

The Kennewick division is the most recently constructed division of the Yakima project. The Secretary of the Interior was authorized by the act of June 12, 1948, to construct extra capacity in the Kennewick main canal for the future irrigation of approximately 7,000 acres of land.

Major new facilities of the Kennewick division extension would be a third hydraulic pump at Chandler pumping plant, the mile-long Kiona siphon, a distribution system of concrete line canals and pipes, and drainage facilities. Relift pumps and electrical facilities to serve them will also be needed.

Use of concrete-lined canals and pipe for the lateral system in lieu of the open-ditch system originally proposed results in some additional construction costs. The more modern system also will save substantial amounts of water which would otherwise be lost through evaporation and deep percolation.

Nearly all of the lands within the extension are presently dry, supporting only sagebrush and native grasses used for livestock grazing. About 70 percent of the extension acreage to be developed for irrigation would most likely be devoted to feed and general row crops. Specialty crops now being grown on adjoining areas, which might also be grown in the extension area, are mint and asparagus. Grapes, sweet cherries, prunes, peaches, and apricots also are grown.

The water supply for the extension would consist primarily of return flows from irrigated lands upstream supplemented by natural flows of the Yakima River.

In 1931, we obtained a permit for the State of Washington for the Kennewick Irrigation District to divert up to 1,600 cubic feet per second for irrigation and power purposes. This permit fully covers the needs of the extension lands.

As presented in our feasibility report, the construction cost of the

extension, based on January 1962 prices, was estimated to be \$5,250,400.

We have adjusted the construction cost estimate to January 1969 prices and added the pipe distribution system. The construction cost estimate is now \$6,735,000. Provision should be made in the legislation for adjustment of the appropriation ceiling to reflect the new cost estimate.

The current estimated investment costs of \$7,554,700, which includes assigned storage costs, deferred main canal costs, and an irrigation power suballocation, are allocated \$7,421,900 to irrigation and \$132,800 to fish and wildlife.

Annual operating costs are allocated \$50,690 to irrigation and \$910 to fish and wildlife.

The costs allocated to irrigation would be reimbursable without interest. In accordance with the Federal Water Project Recreation Act, the costs allocated to fish and wildlife would be nonreimbursable, as they consist wholly of joint costs.

Annual irrigation benefits total \$884,300 and include direct benefits of \$484,100 and direct public benefits of \$400,200. Annual fish and wildlife benefits amount to \$5,500 and are based on the beneficial effects which irrigation of the extension lands would have on upland game and birds.

The annual equivalent cost of the proposed development amounts to \$364,900. The ratio of all benefits to costs is 2.8 to 1. Using only direct benefits, the ratio is 1.6 to 1.

These ratios are based on the 3 $\frac{1}{4}$ -percent interest rate. The tabulation attached to this statement compares financial and economic data in the feasibility report with the current data.

(The document referred to follows:)

ECONOMIC AND FINANCIAL ANALYSES

	Feasibility report (April 1963 costs)	Current analysis (Jan- uary 1969 costs)
Construction cost allocation:		
Irrigation.....	\$1,115,500	\$6,602,200
Fish and wildlife enhancement.....	134,900	132,800
Total.....	5,250,400	6,735,000
Annual equivalent costs:		
Construction.....	161,230	313,300
Operation and maintenance.....	48,370	51,600
Total.....	210,600	364,900
Annual equivalent benefits:		
Irrigation, total.....	890,900	884,300
Fish and wildlife.....	5,500	5,500
Total.....	896,400	889,800
Benefit-cost ratios:		
Total benefits.....	¹ 4.3 to 1	² 2.8 to 1
Direct benefits only.....	² 1.9 to 1	² 1.6 to 1
Reimbursement:		
Irrigation allocation.....	\$5,115,500	\$7,162,600
Repaid by water users.....	1,914,640	1,688,400
Percent.....	37	24
Federal Columbia River revenues.....	3,200,860	5,474,200
Percent.....	63	76

¹ 100 years, 2 $\frac{7}{8}$ percent.

² 100 years, 3 $\frac{1}{4}$ percent.

³ Do not include the irrigation power suballocation (\$259,300) which will be repaid from irrigation water pumping power charges.

Mr. STAMM. It is proposed that the same general irrigation repayment terms used in the Kennewick division repayment contracts also be applied to the extension.

Because the extension lands are presently undeveloped, a 10-year development period is recommended. Present repayment provisions require that all of the Kennewick division's reimbursable irrigation costs be repaid within 66 years following delivery of water. Therefore, construction payments by extension water users would be made over a 56-year period after the initial 10-year development period.

Water users could pay \$88,420 annually for irrigation service. Or \$14.03 per acre. These revenues, during the 56-year repayment period would meet all annual operating costs and in addition would repay \$1,698,400 or about 24 percent of the capital costs allocated to irrigation. Financial assistance in the amount of \$5,474,200 would be needed to complete repayment of the irrigation allocation.

The foregoing analysis utilizes a recently developed formula for determining an irrigation pumping power rate which assures repayment without interest of an equitable portion of the overall power investment of the Federal Columbia River power system and associated operating costs. This is compatible with the traditional reclamation policy that irrigation investment be returned without interest.

It will not adversely affect the rates or the repayment schedule for the commercial power investment of the system.

We anticipate that the Kennewick Irrigation District will operate and maintain the extension facilities, achieving more efficiency and savings in operating costs to the water users by spreading overhead costs over a greater acreage.

The enactment in the 89th Congress of section 2 of Public Law 89-448, as amended by section 6 of Public Law 86-561, established new procedures and limitations for financial management of the Federal Columbia River power system and the associated Federal projects.

Together these two sections provide a legislative policy under which the construction costs allocated to irrigation on future Federal reclamation projects, to the extent they are beyond the ability of the irrigation water users to repay, shall be charged to and returned within the irrigation repayment period from net revenues derived from the Federal Columbia River power system.

There is strong support for the plan of development among local interests and representatives of the State of Washington. We recommend favorable consideration of the Kennewick division extension and early action toward enactment of S. 742.

Already placed in the record is the financial table which identifies the increases and differences between the feasibility report at 1963 costs and the current analysis at 1969 costs.

Senator ALLOTT. On page 3 of your statement, Mr. Stamm, you say that the annual irrigation benefits total \$884,300 and include direct benefits of \$484,100 and indirect and public benefits of \$404,200. What are these indirect and public benefits?

That is almost 50 percent, by the way, of the annual irrigation benefits.

Mr. STAMM. Mr. Casey?

Mr. CASEY. They are comprised of amounts that stem from increased farm purchases due to irrigation, increased processing and

transportation activity for disposing of the produce from irrigation and the public benefit factor is largely an allowance for increased new farm opportunities. In other words, economic effects that accrue to other than the direct water user.

Mr. STAMM. The direct benefits are a measure of the increased income to the water user himself, in a before and after situation, and all other benefits that accrue to the community come in the indirect and public benefit category.

Senator ALLOTT. Well if, in the calculations, you build up the indirect and public benefits, you increase the possibility of securing a more favorable feasibility figure, do you not?

Mr. STAMM. If you build up the indirect, yes, sir.

Senator ALLOTT. And public benefits?

Mr. STAMM. Yes, it would result in a more favorable benefit-cost ratio on the basis of total benefits to cost.

Senator ALLOTT. Of your total figure here, your total cost is \$7,162,000?

Mr. STAMM. That is the investment cost. That is more than is required in the way of new appropriations, because that includes an allocation from the storage division of the Yakima project, and the sunk cost in the enlargement of the canal that was constructed earlier.

Senator ALLOTT. And there would actually be of that amount, \$1,688,400 or only 24 percent of the irrigation allocation, would be repaid by the water users themselves, right?

Mr. STAMM. Yes, sir.

Senator ALLOTT. And the rest would be charged ultimately and eventually to the Columbia River revenues?

Mr. STAMM. Yes. Actually \$5,474,200 would be the requirement from the Columbia River basin power revenues.

Senator ALLOTT. And since the irrigator does not pay any interest until such time as this amount was repaid from the Federal Columbia River revenues, the Federal Government would be paying interest on that money.

Mr. STAMM. Yes. You are assuming that the funds made available would be borrowed funds, Federally borrowed funds. That is right.

Senator ALLOTT. There; is there any other assumption I can make?

Mr. STAMM. I don't know of any.

Senator ALLOTT. Now that is roughly \$5½ million. When would the first funds be available out of the Columbia River revenues, for the Kennewick division?

Not before 2030, is that right?

Mr. STAMM. While Mr. Casey is looking up that figure, the aid that is authorized from the Columbia River power system by the acts to which I made reference, during the 20 year period, 2017 to 2036 during which time this amount would fall due, is limited to \$600 million of assistance. The total commitment against those revenues, during that same time period, is \$275 million, so there is an uncommitted cushion of \$325 million.

Senator ALLOTT. Well, theoretically there is a cushion. I may be wrong, because I am trusting my memory in this, but in some previous reclamation projects here, it was my recollection that there could be no sums paid out, that all the sums in that fund were committed through the year 2025.

Am I wrong?

Mr. STAMM. That possibly could be right. I will be happy to check those figures. I have not looked at them for several years but my recollection is that all of the financial assistance required for authorized projects and all of the amounts authorized to be repaid from that fund can be covered well within the anticipated revenues and within the time periods required by law.

Mr. CASEY. I have an annual report of the Bonneville Power Administration, which, of course, supervises the Federal Columbia River Power System, for fiscal year 1968 which indicates that the commercial power investment that is now authorized to be made will be amortized in its entirety in the year 2029.

Now there is \$275 million worth of authorized irrigation financial assistance that would have a claim during the same period as the Kennewick and the statutes limit the availability of that to an average of \$30 million a year.

So that would indicate the financial assistance for the Kennewick extension would be available on Bonneville's books when required at the end of the irrigation repayment period.

Senator BURDICK. What does that mean?

When will it be available?

Mr. STAMM. It would be required about 9 years after 2029, which would be 2038.

Senator ALLOTT. Nine years after 2029.

Mr. STAMM. Yes.

Senator ALLOTT. That was something along the lines of my recollection. That is all I have, Senator Jordan.

Senator JORDAN. Just two questions: Have you calculated what the benefit-cost ratio would be on a rate of $4\frac{5}{8}$?

Mr. STAMM. Yes, sir, we have.

Senator JORDAN. Will you give it to me?

Mr. STAMM. On total benefits, the ratio drops down to 2.1 to 1.

On direct benefits only, it drops down to 1.1 to 1.

Senator JORDAN. Thank you. Now on page 4 you say water users could pay \$88,420 annually for irrigation services, or \$14.04 per acre. Now how does this \$14.04 per acre rate differ from the \$5.60 per acre on the other project?

Mr. STAMM. This covers delivery of water to the farmers' headgate.

This not only covers a share of the cost of storage in the Yakima project storage system, but it also includes diversion from the Yakima River into the main canal, the cost of the main canal, the costs of the siphons and the relift pumps, the laterals and canals, down to the farmers' headgate.

Senator JORDAN. Is it broken down with respect to storage and delivery?

Mr. STAMM. I don't have the breakdown, but the amount allocated to storage is pretty small here, because the Yakima storage system was built many years ago, when costs were substantially less than they are today.

Senator JORDAN. Thank you.

Mr. STAMM. It seems to me that the cost of storage is only about \$6

an acre-foot of capacity, which the water users would pay out over a long period of time, so the storage component is fairly small.

But the diversion, distribution, and pumping facilities are more costly.

Senator JORDAN. Thank you, that is all I have, Mr. Chairman.

Senator ALLOTT. Senator Hatfield.

Senator HATFIELD. I have no questions, Mr. Chairman, thank you.

Senator ALLOTT. Anything else?

Any other witnesses?

If not, these meetings will be recessed upon the call of the Chair. Thank you, gentlemen.

(Whereupon, at 12:07 p.m. the subcommittee adjourned subject to call of the Chair.)