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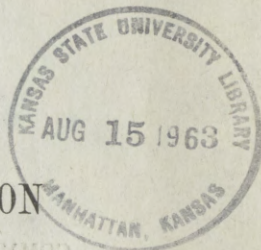
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GOVERNMENT

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HEARING
BEFORE THE
SUBCOMMITTEE ON
IRRIGATION AND RECLAMATION



OF THE
COMMITTEE ON
INTERIOR AND INSULAR AFFAIRS
UNITED STATES SENATE

EIGHTY-EIGHTH CONGRESS

FIRST SESSION

ON

S. 178

A BILL TO MAKE CERTAIN PROVISIONS IN CONNECTION
WITH THE CONSTRUCTION OF THE GARRISON DIVERSION
UNIT, MISSOURI RIVER BASIN PROJECT, BY THE
SECRETARY OF THE INTERIOR

JUNE 6, 1963

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



U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1963

20-240

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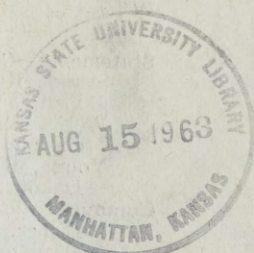
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GARRISON DIVERSION UNIT, MISSOURI RIVER BASIN PROJECT

THURSDAY, JUNE 6, 1963

U.S. SENATE,
SUBCOMMITTEE ON IRRIGATION AND RECLAMATION
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 3110, New Senate Office Building, Senator Quentin N. Burdick presiding.

Present: Senators Moss, Burdick, Allott, and Jordan.

Also present: Senators McGovern and Young.

Staff members present: Jerry Verkler, staff director; Roy M. Whitacre, professional staff member; and Stewart French, chief counsel.

Senator BURDICK. The subcommittee will come to order.

The hearing this morning is called to consider S. 178, a bill to make certain provisions in connection with the construction of the Garrison diversion unit, Missouri River Basin project, by the Secretary of the Interior.

Nearly 2 years ago on June 21, 1961, this committee conducted hearings on S. 280, similar to the measure now before the committee. That legislation was favorably considered by both the subcommittee and the full committee and reported to the floor of the Senate.

This bill, as did the last one, supplements an existing authorization to fit a new plan of development. The first phase is proposed to irrigate 250,000 acres of land. In addition to providing water, it would furnish the following benefits: pollution abatement; flood control; drainage; municipal and industrial water supplies; as well as fish and wildlife and recreation benefits.

Without objection, I will include in the record at this point a copy of S. 178, the departmental reports, and a press release of the President of the United States dated June 21, 1961.

(The documents referred to follow:)

[S. 178, 88th Cong., 1st sess.]

A BILL To make certain provisions in connection with the construction of the Garrison diversion unit, Missouri River Basin project, by the Secretary of the Interior

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the general plan for the Missouri-Souris unit of the Missouri River Basin project, heretofore authorized in section 9 of the Flood Control Act of December 22, 1944 (58 Stat. 887), as modified by the report of the Secretary of the Interior contained in House Document Numbered 325, Eighty-sixth Congress, second session, is confirmed and approved under the designation "Garrison diversion unit," and the construction of a development providing for the irrigation of two hundred and fifty thousand acres and other project purposes shall be prosecuted by the Department of the Interior sub-

stantially in accordance with the plans set out in the Bureau of Reclamation report dated November 1962 supplemental report to said House Document 325.

Sec. 2. In connection with the carrying out of the plan for the Garrison diversion unit, the Secretary is authorized to make provision for the conservation and development of the fish and wildlife resources of the area in accordance with the authorities and procedures of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661, et seq.): *Provided*, That no land for the conservation and development of the fish and wildlife resources of the area shall be acquired with funds authorized to be made available pursuant to this Act unless the acquisition thereof has been approved by the Garrison Diversion Conservancy District or the Oahe Conservancy Sub-District in their respective States.

The Secretary is authorized to construct recreational facilities essentially as described in aforesaid House Document Numbered 325, and to withdraw or acquire by such means as he considers in the public interest, additional lands required therefor if the State of North Dakota, or a political subdivision thereof, or a public entity agrees to operate and maintain such recreational facilities for a period of at least twenty years. After twenty years of State or local operation and maintenance, the Secretary is authorized to convey to the State, or to a political subdivision thereof, or to a public entity, without monetary consideration, the recreation facilities, including land therefor, to be used, operated, and maintained by the State, or political subdivision, or public entity exclusively for public park, recreation, and conservation purposes. Except for works and areas which will be administered by an agency of the Department of the Interior, provision of specific facilities for these purposes shall not be undertaken by the Secretary until suitable agreements have been made with State or local agencies respecting, among other things, administration and the bearing or sharing of appropriate operation and maintenance costs. Appropriate shares of the Federal costs of constructing, operating, and maintaining the Garrison diversion unit shall be allocated to the purposes specified in this section and shall be nonreimbursable and nonreturnable as are certain other purposes of the project under the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof and supplementary thereto).

Sec. 3. Notwithstanding the existence of any reservation of right-of-way for canals under the Act of August 30, 1890 (26 Stat. 371, 391; 43 U.S.C. 945), the Secretary is authorized to pay just compensation to the owners of private lands west of the one hundredth meridian, for all lands or interest in lands required for right-of-way purposes for the Garrison diversion unit.

Sec. 4. The Garrison diversion unit shall be integrated physically and financially with the other Federal works constructed or authorized to be constructed under the comprehensive plan approved by section 9 of the Act of December 22, 1944, as amended and supplemented. The Secretary shall give consideration to returning to the Missouri River to the fullest extent practicable such of the return flows as are not required for beneficial purposes.

Sec. 5. The interest rate used for computing interest during construction and interest on the unpaid balance of the capital costs allocated to interest-bearing features of the project shall be determined by the Secretary of the Treasury as of the beginning of the fiscal year in which construction is initiated, on the basis of the computed average interest rate payable by the Treasury upon its outstanding marketable public obligations, which are neither due to callable for redemption for fifteen years from date of issue.

Sec. 6. 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.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., June 5, 1963.

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

DEAR SENATOR JACKSON: This responds to the request of your committee for the report of this Department on S. 178, a bill to make certain provisions in connection with the construction of the Garrison diversion unit, Missouri River Basin project, by the Secretary of the Interior.

The Department recommends enactment of the bill if amended as suggested hereafter.

The primary effect of this bill is to modify the Missouri River Basin project authorizations to accommodate the special conditions of the Garrison diversion unit. The bill is consistent with the findings and recommendations for a plan of irrigation development set forth in the Department's report on this unit which was transmitted to the Congress on February 3, 1960, and printed as House Document No. 325, 86th Congress. Enclosed, as a part of this report, is the Department's "Supplemental Report on the Garrison Diversion Unit (Initial Stage—250,000 Acres)" dated November 1962, and revised May 1963; incorporated in that report as an appendix is a report of the Bureau of Sport Fisheries and Wildlife, "Fish and Wildlife Resources in Relation to the Garrison Diversion Unit (Initial Stage—250,000 Acres)" dated November 14, 1962. This supplemental report brings up to date the costs, benefits, and economic and financial analyses; it supersedes the Department's supplemental report dated January 1961, which was submitted to the Congress on June 20, 1961.

The specific tracts of land to be irrigated under the 250,000-acre plan are portions of the 1,007,000 acres originally contemplated as the ultimate development of the project. The physical plan of service to the lesser area will be similar to the original proposal for ultimate development, except that some of the principal supply works will be built to smaller capacity, and only those distribution works required to serve the tracts of land and selected for development will be built. Selection of the lands to be served under the unit will be made on the basis of continuing detailed studies of the various tracts of irrigable land, and the desires of the States of North and South Dakota and the prospective water users as evidenced by the formation of irrigation districts and negotiation of repayment contracts.

Before construction is initiated the Department will require that contracts be executed among the United States, the Garrison Diversion Conservancy District, and the irrigation districts to insure the sufficiency of annual water revenues, combined with the revenues available to the conservancy district, to pay the operation, maintenance, and replacement costs of the principal supply works and the distribution, lateral, and drainage systems of the area for which service is proposed. This requirement would be met when contracts to serve about one-half of the 250,000-acre development have been executed. Thereafter, as additional tracts are brought into production, an increasing portion of the annual payments will be available for repayment of construction costs allocated to irrigation.

The estimated total construction cost of the project has increased from the previously reported \$183,000,000 to \$212,383,000. This increase is the result of variations in the construction cost index, improved quality of data deriving from more detailed investigations, and evolution of design concepts which have been adopted by the Bureau of Reclamation.

"Policies and Procedures in the Formulation, Evaluation, and Review of Plans for the Use and Development of Water and Related Land Resources," a statement approved by the President on May 15, 1962, and printed as Senate Document 97, 87th Congress, provides, among other things, for the allocation of joint project costs to recreation and for computation of the interest rate to be used in economic analyses in accordance with a prescribed formula. These precepts were incorporated into the recently completed economic analyses and are reflected in the attached supplemental report (along with the increased cost estimate).

The Department suggests that the following amendments be made the bill:

A. Insert ", municipal and industrial water, fish and wildlife conservation and development, recreation, flood control," after the word "acres" on page 2, line 1.

B. Insert "(Revised May 1963)" after the figures "1962" on line 5, page 2. This change will conform the reference in the bill to the title of the supplemental report as revised in May 1963.

C. Strike section 2, and substitute therefor the following:

"Sec. 2. The Secretary is authorized, as a part of the Garrison diversion unit, to construct, operate, and maintain public recreation facilities, including access roads, to acquire or withdraw from entry or other disposition under the public land laws such adjacent lands or interests therein as are necessary for present and future public recreation use, and to provide for public use and enjoyment of the same and of the water areas of the unit; these undertakings shall be coordinated with the other unit purposes. The Secretary is authorized to enter into agreements with State, or local public agencies, or other public entities for the operation, maintenance, or additional development of project lands or facilities or to dispose of project lands or facilities to State or local agencies or other public entities by lease, transfer, exchange or conveyance, upon such terms and conditions as will best promote their development and operation in the public interest for recreation purposes. The costs of the undertaking described in this paragraph, including the costs of investigation, planning, operation and maintenance and an appropriate share of the joint cost of the Garrison diversion unit shall be nonreimbursable."

This suggested amendment eliminates an unnecessary reference to the Fish and Wildlife Coordination Act (16 U.S.C. 661) which is applicable to the project without further legislation. Also eliminated is the veto over land acquisition which the bill would give to the Garrison Diversion Conservancy District and the Oahe Conservancy Subdistrict. The Department believes that the concept of multiple purpose project development would be defeated if local organizations were possessed of the power effectively to defeat the plan for fish and wildlife conservation and development which is an integral part of the overall unit plan. Moreover, allocation of costs and benefits and calculations of economic feasibility are predicated upon realization of all purposes of the unit through completion of planned development; removing from the Secretary of the Interior the power to place the entire unit plan into effect would adversely affect the economic justification of the unit.

D. For purposes of clarification—

(1) Delete the words "the Secretary is authorized to pay" from lines 24 and 25 on page 3;

(2) Delete the words "to the owners of private lands" from line 25 on page 3, and line 1 on page 4, and substitute therefor the words "shall be paid for all lands or interest in lands";

(3) Delete the words "for all lands or interest in lands required for right-of-way purposes" from lines 1, 2, and 3 on page 4, and substitute therefor the words "required for ditches and canals."

Section 3 will then read as follows:

"Sec. 3. Notwithstanding the existence of any reservation of right-of-way for canals under the Act of August 30, 1890 (26 Stat. 371, 391; 43 U.S.C. 945), just compensation shall be paid for all lands or interest in lands west of the one hundredth meridian required for ditches and canals for the Garrison diversion unit."

Fish and wildlife measures in the Department plan for the unit include acquisition of land, construction of dams, levees, dikes, ditches and related structures on these lands, and provision for supplying and transporting necessary water to the fish and wildlife areas. These measures will mitigate waterfowl losses and provide benefits to fish and wildlife. The costs for these measures are included in the total costs of the Garrison diversion unit. Since all of the measures for fish and wildlife will be for the prevention of loss and damage to, or development and improvement of, these resources, and since the benefits will accrue to the public at large and will not be readily identifiable with any particular group or groups of beneficiaries, I find, in accordance with the Fish and Wildlife Coordination Act, that the following costs allocated to fish and wildlife are non-reimbursable: (1) costs of land acquisition; (2) costs of construction of dams, levees, dikes, ditches, and related water-control structures on acquired lands; (3) costs of supplying and transporting necessary water to fish and wildlife areas; and (4) joint project costs.

The costs of further improvements to the fish and wildlife areas, including necessary roads, fencing, planting, and buildings and their operation and maintenance will be borne by the Fish and Wildlife Service or by the State fish and game agency having responsibility for administration of the area, and not from appropriations for the construction and operation of the Garrison diversion unit.

It must be emphasized that some fundamental repayment questions concerning the Missouri River Basin project are under study by this Department, and, since that study is not yet completed, its results were not considered in making this report. The "Supplemental Report on Garrison Diversion Unit (Initial Stage—250,000 Acres)" represents only the latest revision of the costs, benefits, and economic and financial analyses.

A statement of personnel and other requirements that enactment of this bill would entail is enclosed in accordance with the provisions of Public Law 801, 84th Congress.

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

Sincerely yours,

STEWART L. UDALL, *Secretary of the Interior.*

Estimated additional man-years of civilian employment and expenditures for the 1st 5 years of proposed new or expanded programs

	1st year	2d year	3d year	4th year	5th year
Estimated additional man-years of civilian employment:					
Executive direction:					
Executive.....			1	1	2
Clerical.....			1	2	3
Total, executive direction.....	0	0	2	3	5
Administrative services and support:					
Accountant.....	1	2	6	9	14
Clerical.....	2	5	22	30	51
Property management.....	3	6	15	20	34
Records maintenance.....	2	6	16	26	38
Total, administrative services and support.....	8	19	59	85	137
Substantive (program):					
Engineering aids.....	19	20	40	54	70
Engineers.....	34	40	80	100	140
Geologist.....	5	6	14	20	25
Others.....	9	10	20	30	32
Total, substantive.....	67	76	154	204	267
Total, estimated additional man-years of civilian employment.....	75	95	215	292	409
Estimated additional expenditures:					
Personal services.....	\$550,000	\$644,000	\$1,440,000	\$1,950,000	\$2,725,000
All other.....	1,450,000	9,356,000	18,560,000	23,050,000	33,275,000
Total, estimated additional expenditures.....	2,000,000	10,000,000	20,000,000	25,000,000	36,000,000

EXECUTIVE OFFICE OF THE PRESIDENT,

BUREAU OF THE BUDGET,

Washington, D.C., June 6, 1963.

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

DEAR MR. CHAIRMAN: This is in response to the committee's request for the views of the Bureau of the Budget on S. 178, a bill to make certain provisions in connection with the construction of the Garrison diversion unit, Missouri River Basin project, by the Secretary of the Interior.

The purpose of this bill is to authorize construction of the Garrison diversion unit as a part of the Missouri River Basin development of the Bureau of Reclamation.

The President, on June 21, 1961, announced his support of the Garrison diversion irrigation development in the upper Missouri River Basin. Legislation to authorize the Garrison project was considered by the 87th Congress but was not enacted. We accordingly favor the enactment of appropriate legislation to authorize the development, but have certain concerns with this project proposal.

The Department of the Interior has prepared a revised supplemental report on the Garrison diversion unit which is being submitted to your committee as an enclosure to the Department's report on S. 178. The revised supplemental report was submitted to the Bureau of the Budget for review on May 31, 1963. The closeness of this date to the committee's scheduled hearing on the legislation, on June 7, has precluded a full review of the revised report. The following views should therefore be regarded as not necessarily final.

The revised report differs in many significant respects from the supplemental report furnished to this Bureau when authorizing legislation was under consideration in the previous Congress. In particular, the report proposes a non-reimbursable cost allocation to recreation estimated at \$12,122,000, including joint costs allocated to this purpose.

Pursuant to Presidential instructions, the concerned executive branch agencies have been studying cost allocation, cost-sharing and reimbursement policies for water resources programs, including interest rates and cost sharing for recreation and fish and wildlife associated with Federal water resources developments. These studies are nearing completion and it is expected that the agencies will make their recommendations to the President in the near future.

It is also noted that the project report proposes the acquisition of land and water areas for waterfowl habitat, which raises a further matter under review in the executive branch on which there may be subsequent recommendations differing from those presented in the current proposal. Under present arrangements, acquisition of lands needed for the migratory waterfowl program is accomplished from a fund specifically designated for this purpose, financed by the purchase of duck stamps, and recently augmented by advance appropriations from the Treasury under the provision of the "wetlands" legislation of October 4, 1961 (Public Law 87-383). Development and management of these lands is supported by appropriation of general revenues. We have asked the Department of the Interior to review its future plans for the migratory waterfowl program indicating an appraisal of the role that refuge lands at water resource projects would play in the total program. We have also asked the Department to review ways of planning and financing land acquisition for migratory waterfowl within a single source of funds. We are hopeful of an early conclusion of these discussions.

At the request of the House Interior Committee, the Department of the Interior is also currently engaged in a study of repayment questions concerning the Missouri Basin project. This study should provide a basis for determining the adequacy of Missouri Basin Power revenues to repay the Federal irrigation costs in the basin, including the Garrison diversion unit.

Section 3 of the bill would provide authority to pay just compensation for lands required for irrigation canals notwithstanding reservations of rights-of-way in the act of August 30, 1890. The desirability of general legislation to accomplish this purpose is presently under consideration in the executive branch. However, we would not object to the ad hoc authorization proposed in S. 178 pending completion of executive branch consideration of this matter.

The Department of the Interior in its report on S. 178 recommends against provisions in the bill that would give local interests a veto power over Federal land acquisitions for fish and wildlife. The Bureau of the Budget concurs in the views of the Department in this regard.

Sincerely yours,

PHILLIP S. HUGHES,
Assistant Director for Legislative Reference.

DEPARTMENT OF AGRICULTURE,
Washington, D.C., June 10, 1963.

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

DEAR MR. CHAIRMAN: This is in reply to the request from your committee, dated February 4, 1963, for the views of this Department on S. 178, a bill to make certain provisions in connection with the construction of the Garrison diversion unit, Missouri River Basin project, by the Secretary of the Interior.

This Department would have no objection to enactment of the bill.

This Department commented in November 1957 on the plan for development of the Garrison diversion unit contained in House Document No. 325, 86th Congress, 2d session. Those comments, together with a reply from the Secretary of the Interior, are included in that document.

We note that S. 178 refers to the Missouri-Souris unit of the Missouri Basin project authorized by the Flood Control Act of 1944 and modified by the report of the Secretary of the Interior contained in House Document 325, 86th Congress, 2d session. From the supplemental report of the Bureau of Reclamation dated January 1961, we also note that the Bureau proposes a further modification of the Garrison diversion unit with initial development limited to 250,000 acres. We understand that this report was prepared in answer to requests for additional information when the project was considered in 1957 and 1959. The supplemental report sets forth a plan of development providing for irrigation of 250,000 acres, municipal and industrial water supply for 15 towns and cities, 24 areas for fish and wildlife conservation, recreation development at 7 major water impoundments, flood control and incidental drainage of nonirrigable lands, and other benefits. Water for irrigation and the other planned uses will be diverted by pumping from Garrison Reservoir. The diversion system extends from Garrison Reservoir to, and including, Lonetree Reservoir, a regulating impoundment in the headwaters of the Sheyenne River.

This Department is in general accord with the principle of multiple-purpose use of water resources. The Garrison diversion unit project is designed to initiate the use for irrigation of water stored in the Garrison Reservoir as was anticipated when the Garrison Reservoir project was originally authorized by the Flood Control Act of 1944 and to supply some water for recreation, municipal, industrial, and fish and wildlife purposes. Present facilities limit the use of the reservoir primarily to flood control, power generation, and navigation.

The authorized Missouri Basin project contemplated extensive irrigation development in North Dakota and other upper basin States to compensate for loss of productive lands inundated by main-stem reservoirs. This part of the irrigation phase of the Missouri River Basin project appears to be in accord with plans for utilization of the water and land resources of the basin and equity to the upper basin States.

Most of the land to be irrigated by the proposed project is now farmed without irrigation. Crop production varies greatly by years. The principal crop is wheat and the area depends upon a one-crop economy. If a sound irrigation economy is developed, this acreage of wheat may be expected to be reduced as livestock and livestock products and more profitable cash crops are grown. Experience has shown that very little wheat is grown on a fully developed irrigation project. This gradual transition should be accomplished over a period of years without disruption of the local economy.

It would appear to be desirable to develop the potential irrigable lands by increments such as the proposed 250,000 acres initial development. Additional irrigable acres could be evaluated separately to determine what additional development, if any, would be justified.

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

Sincerely yours,

ORVILLE L. FREEMAN, *Secretary.*

[For immediate release, June 21, 1961, Office of the White House Press Secretary]

President John F. Kennedy today announced his support of the Garrison diversion irrigation development in the upper Missouri River Basin. Administration approval of the project was transmitted to the Congress by the Department of the Interior in the form of a report from Secretary Stewart Udall and by testimony before a Senate subcommittee by Assistant Secretary for Water and Power Kenneth Holum.

The irrigation project, located principally in North Dakota, will, when completed, enable the farmers of the area to diversify their crops and as a consequence stabilize the economy of the region. Completion of the project, to serve 250,000 acres initially, will not bring additional land into crop production, but will make it possible for the area's farmers to change from dry farming of wheat which is in surplus to varied crops including those which will support cattle raising and yield higher incomes.

The Garrison diversion for irrigation was authorized nearly 17 years ago. Since then most of the flood control, navigation, and power features of the project have been constructed with a loss of valuable fertile farmland in North Dakota and South Dakota. Action on the irrigation project would fulfill a long-standing obligation to the people of these States. More land, now dry farmed, would be irrigated to replace the fertile lands that have been submerged. The project will also provide the area with valuable fish and wildlife and other recreational benefits.

In commenting on the project, the President made the following statement, "As indicated in my message to the Congress on natural resources, 'Wise investment in a resource program today will return vast dividends tomorrow, and failures to act now may be opportunities lost forever.' The Garrison diversion project is an excellent illustration of the principle. The investment to be made now in the upper Missouri River Basin will in the future bring to the people of the Dakotas and the Nation at large great benefits in the form of a sound agricultural economy, improved recreational facilities, and perhaps most important of all, the region will be able to retain and support its greatest resource, the young people who have in recent years been forced to leave farms in the areas in alarming numbers."

The cost of the stage of the Garrison diversion unit proposed for construction would be \$183 million to be expended over a period of 10 or more years.

Senator BURDICK. I have a statement which I will submit for the record at this point.

(The statement referred to follows:)

STATEMENT OF HON. QUENTIN N. BURDICK, A U.S. SENATOR FROM THE STATE OF NORTH DAKOTA

Mr. Chairman and members of the subcommittee, several times previously I have appeared in behalf of the reauthorization of the Garrison diversion unit. Since a strong case will be developed by seven witnesses from North Dakota, I am going to be brief.

The Garrison diversion project has the full support of the administration, including a personal endorsement from the President. In adopting a wise and sound program for utilization of land and water resources, as is possible under the Garrison diversion unit, we can materially enhance the economic growth of the entire upper Midwest region which is lagging behind the national growth rate.

The Garrison diversion project would accomplish these objectives by diversifying and stabilizing agriculture, providing municipal and industrial water supplies, encouraging fish and wildlife programs, and providing areas of recreation.

I wish to remind the Congress that North Dakota sacrificed, in the interest of the Missouri River Basin program, 551,000 acres of good farm and ranch land for the construction of the Garrison and Oahe main-stem reservoirs. Ultimate construction of the Garrison diversion unit will compensate only in part for this permanent loss of the land and resultant loss of tax revenues.

The authorized Missouri River Basin project provided benefits for every State involved. North Dakota was to receive extensive irrigation development, of

which the Garrison diversion unit is the major feature. The first 15 years of basin development has emphasized main-stem reservoir construction, with benefits for flood control, navigation, and pollution abatement accruing primarily to lower basin States.

Irrigation has not kept pace with other authorized project purposes. Irrigation phases of the basin project, with particular emphasis on development in North Dakota, should proceed as planned without further delay, in equity to our State which has given up and lost so much valuable land to main-stem reservoirs.

In undertaking the Garrison diversion project, the Federal Government would be making an investment that would pay for itself many times over. Studies indicate that over a 50-year period the increased income from individual farmers in the project area would yield Federal income tax revenues \$160 million higher than at present. Combined with \$25.5 million that would be returned to the Government from the irrigators and conservancy district, 98 percent of the cost allocated to irrigation would be covered. In addition, more than \$160 million will be available from surplus power revenues. These returns in the Federal Treasury far exceed the investment in the project.

I should like to emphasize that no new land would be placed in agricultural production by this project. The land sought to be irrigated already is in crop. There will be a crop replacement in the area, with crops not in surplus. The North Dakota State University estimates that 85,000 acres presently devoted to wheat and other small grains would be diverted to forage and other livestock feed products. Experience on irrigated acres indicates furthermore that importation of feed grains often is necessary to provide the livestock industry based on irrigation with adequate supplies.

The people of North Dakota are solidly in support of this project. This is demonstrated by enactment of legislation authorizing 25 counties to levy taxes to help pay construction and operation costs. Eight irrigation districts containing over 370,000 acres of irrigable lands have already been formed and organized. These landowners are now waiting for water to serve their irrigation potentials. Twenty-nine statewide organizations and 207 local groups have endorsed the project.

The points that I have touched upon briefly will be further developed in the testimony of Gov. William L. Guy, Senator Milton Young, Representative Don Short, Representative Hjalmar Nygaard, Roy A. Holand, LaMoure, N. Dak., chairman of Garrison Diversion Conservancy District; Milo W. Hoisveen, State engineer; and Howard Pare, Tolna, N. Dak., president of North Dakota Irrigation District Directors Association.

Also filing statements will be:

North Dakota Farmers Union, E. W. Smith, president.
 North Dakota Farm Bureau, Clark Robinson, president.
 North Dakota Stockmen's Association, Karnes Johnson, president.
 North Dakota Agricultural Experiment Station, Arlon Hazen, Director.
 North Dakota Water Users Association, Oscar N. Berg, executive vice president.
 North Dakota Association of Rural Electric Cooperatives, Helgi Nygren, president.
 North Dakota League of Municipalities, Theodore Hardmeyer, president.
 North Dakota Wildlife Federation, Otto Maercklein, president.
 Greater North Dakota Association, John Gunkelman, president.
 North Dakota Game and Fish Department, Russell Stuart, commissioner.
 North Dakota Economic Development Commission.
 North Dakota Association of Soil Conservation Districts, Lee Christianson, president.
 North Dakota County Commissioners' Association, R. C. Nelson, secretary.
 North Dakota Bankers' Association.
 Mississippi Valley Association, James Smith, vice president.
 National Reclamation Association, William Welsh, manager.
 Great Northern Railway Co., E. M. Gregory.
 Northern Pacific Railway Co., L. S. MacDonald, director, agricultural development department.

Senator BURDICK. Our next witness is Senator McGovern. We will be glad to hear from you now.

STATEMENT OF HON. GEORGE MCGOVERN, A U.S. SENATOR FROM
THE STATE OF SOUTH DAKOTA

Senator MCGOVERN. Mr. Chairman and members, I am pleased to testify as a member of the Senate Interior Committee, although not a member of the subcommittee that is meeting today on behalf of S. 178 which refers to the Garrison irrigation unit and I am particularly pleased to be seated this morning between the two distinguished sponsors of this legislation: Senator Burdick and Senator Young of North Dakota.

This measure, if enacted, would authorize 250,000 acres of development—the initial stage of the Garrison diversion project of the Missouri River system. I note from the reports that 220,000 acres of this initial stage are now in organized irrigation districts. Of the remaining 30,000 unorganized acres to be authorized, possibly 20,000 acres in Brown and Marshall Counties in my State of South Dakota may be included. I am hopeful, first of all, for committee approval of the project and, secondly, for consideration of the areas in South Dakota, which form a part of the proposed project. I hope the Bureau of Reclamation may proceed as rapidly as possible to develop this entire area including the affected counties in northern South Dakota.

The Missouri River dams have now inundated almost one-half million acres of rich North Dakota land. The further development of downstream dams and reservoirs has resulted in effective flood control measures. Power output from the Garrison project now flows throughout the upper Midwest. Mindful of the multiple-purpose nature of the Missouri Basin program, I hope we can now give to irrigation development the attention it deserves. It has lagged substantially behind other multiple features. Justification to the people of North Dakota is now essential in effecting an equitable division of Federal benefits.

North Dakota presently depends on an economy directed by the seasons and the weather. Rainfall historically is neither plentiful or dependable. The grain produce of the State is primarily a cash crop and is in large measure centered on production already in surplus. Yet studies show that much of the land is irrigable—and that proper land management with irrigation can offer farmers a new opportunity to raise high-value diversified crops for a competitive market. It can promote through diversification of new farm products and industry a new concept of life for the people.

Municipal and industrial water supply for 14 towns and cities is now necessary to insure the proper diversification of industry which will most surely follow the expanding agricultural economy resulting from irrigated farmlands in this Garrison unit.

I am most impressed with the potential future of the upper Midwest, now available through the completion of the large dams in the Missouri River Basin. But as matters now stand, we are losing almost a thousand farm families from South Dakota annually. The trend toward fewer and larger farms can only be reversed by creating the tools that enable farmers to make a livelihood on modest family-type farms. Irrigation supplants certainty of moisture for uncertainty, substitutes the bountiful land for marginal, permits the diversification of crops not in surplus, and increases the yield of needed high-return products.

In short, the full exploitation of the irrigated system integrated with new opportunities for industrial processing of new agricultural products, and development of recreational facilities attendant to the lakes and reservoirs, truly makes for a renewed land, a renewed economy, and a better life.

I am indeed enthusiastic in my support for this legislation in my neighboring State of North Dakota. I am also enthusiastic that a part of this 250,000-acre project can likely fall into two of the most productive counties in my own State of South Dakota.

The authorization of the initial stage of this project is amply justified by Bureau studies. The most recent appraisals of cost-benefit ratios show this project with a total benefit rating of 2.51 on a 100-year analysis. This rating, when equated with the clear and present need for project authorization, should leave little cause for hesitancy.

Mr. Chairman, I am happy to endorse S. 178 and urge its approval.

Senator BURDICK. Thank you, Senator McGovern. I might say that it is not entirely our project, because at least a portion of the project is in South Dakota.

Senator MCGOVERN. That is correct.

Senator BURDICK. Are there any questions, Senator Jordan?

Senator JORDAN. I wish only to compliment Senator McGovern. We appreciate your testimony here this morning. You have made a fine statement for the project before the committee.

Senator MCGOVERN. Thank you very much.

Senator BURDICK. Our next witness is Senator Milton R. Young of North Dakota.

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

Senator YOUNG. Mr. Chairman and members of the committee, Senate bill 178, sponsored by Senator Burdick and myself from North Dakota, and Senators Mundt and McGovern, of South Dakota, is the most important piece of legislation affecting my State to be considered by Congress for a long, long time. North Dakota has, for almost 75 years, diligently sought a means to divert water from the Missouri River to central and eastern North Dakota. Although many proposals were advanced in the first half century of this effort, it was the authorization of the Missouri River Basin project by Congress in the Flood Control Act of 1944 that gave the needed impetus to the proposal.

The interest and support of North Dakota for a Missouri River diversion project was greatly intensified during the drought period of the 1930's when the importance of water was so dramatically emphasized. The Red River of the North, at that time supplying water for two of North Dakota's largest cities as well as two important cities on the Minnesota side, had practically dried up. During much of the 1930's, and many times since, we have had severe drought periods that had a tremendous adverse effect on all of our agriculture. You can better realize the importance of water and irrigation to North Dakota when you consider that we have often had years of marginal rainfall, and this when agriculture represents more than 80 percent of all of our income. Irrigation is badly needed in North Dakota to stabilize our farm and other income.

The Bureau of Reclamation investigations of the diversion project have resulted in certain recommended modifications to the original authorization of diversion from the Missouri River in the Flood Control Act of 1944. I wish to emphasize, Mr. Chairman, that this project has been authorized and all we are seeking is the modifications proposed by the Bureau of Reclamation. The Bureau of Reclamation recommends modifications to the plan originally proposed insofar as the point of diversion and the location of lands to be served are concerned. These investigations have also determined that the project is engineeringly sound and economically feasible. Today we are asking for your approval of the changes to the originally authorized Missouri River diversion project in North Dakota, now designated the Garrison diversion unit, so that we can proceed with its development. By approving the new modified plan you will contribute immeasurably to the economic health of North Dakota, as well as to the upper Great Plains region and the Nation as a whole.

The Missouri River Basin project, as it evolved and was authorized by Congress in 1944, recognized the needs of all the basin as well as the contributions each of the States would, or could, make to the project and the economy of the Nation. Beneficial use of water for irrigation and municipal and industrial purposes in the upper basin States was an integral part of the plan and represented their primary interest, just as flood control and navigation represented the principal interest of the lower basin States. To accomplish these objectives it was also recognized that large upstream main-stem dams and reservoirs would be required to control and store floodwaters. There was no alternative but to flood millions of acres of valuable river bottom land in the upper basin States for these reservoirs. In North Dakota over 550,000 acres, some of our best land, were acquired for the Garrison and Oahe Reservoirs.

It was our understanding from the start that this great loss in acreage would be partially offset by irrigation that was possible through development of the Garrison diversion unit. When the Senate Appropriations Committee was considering funds to start the construction of Garrison Dam, I told the committee, and this appears in the hearings of the committee, that if North Dakota did not one day attain a sizable irrigation project, Garrison Dam and Reservoir itself would be a net loss to North Dakota. We were willing to make this sacrifice, but always with the understanding that the Pick-Sloan promise of irrigation was equally important as the other benefits to be accrued from the Missouri River Basin program such as flood control, hydroelectric power, and navigation.

By far, the greater part of the major benefits accruing from the Garrison Dam to date, which include flood control, navigation, and power benefits, accrue to areas outside of North Dakota. Irrigation development in the upper basin, North Dakota's principal interest, has not kept pace with other project functions. Approval of S. 178, which will authorize an initial 250,000-acre phase of the potential million-acre Garrison diversion unit, will pave the way to correct this situation.

The multiple-purpose Garrison diversion unit will serve a number of important needs. In addition to providing water for irrigation and municipal and industrial uses, new recreation opportunities will

be available, and fish and wildlife resources will be enhanced. The project costs allocated to each function appear to be reasonable, particularly when compared to the extensive benefits that will be derived from each of the important services from the project. Over 80 percent of the total investment required for the Garrison diversion unit is reimbursable and will be repaid to the Federal Treasury by the water users, the Garrison Diversion Conservancy District, and surplus Missouri Basin power revenues. The 250,000-acre initial phase of the Garrison diversion unit has a very favorable 2.54-to-1 benefit-cost ratio as reported in the Bureau of Reclamation supplemental report on the project dated November 1962.

The citizens of North Dakota are solidly behind the Garrison diversion unit. Virtually every statewide organization in North Dakota, including farm, civic, and conservation organizations, as well as the Greater North Dakota Association, counties, municipalities, chambers of commerce, and other local farm and civic groups, have endorsed and support the project.

The North Dakota Legislature created the Garrison Diversion Conservancy District which now includes 25 counties in the State to further the project. This district has the authority to contract for certain aspects of the project and finance these contracts through a general tax levy that will be spread over all property in the counties in the district. The ability to tax indirect beneficiaries to the extent contemplated through the Garrison Diversion Conservancy District is a unique feature of this district.

The farmers who own irrigable land have voluntarily organized eight irrigation districts in the Garrison diversion unit area. These districts and the Garrison Diversion Conservancy District have substantially agreed to contracts that will be negotiated with the Bureau of Reclamation for the construction and operation of the project.

Although the legislation before this committee will authorize only one-fourth of the originally proposed project, I very strongly urge its enactment. We ask for only our fair share of the benefits from the overall Missouri River Basin project, and the opportunity for our State to make its full contribution to the growth and strength of our Nation.

I earnestly hope that this committee will take favorable action on S. 178.

Senator BURDICK. That is a very fine statement. I want to point out one important fact contained in your statement. You refer to the authorization given to this project in 1944 and you refer to this as a modification of that.

Senator YOUNG. That is right.

Senator BURDICK. We have an existing authorization with the modification?

Senator YOUNG. Yes, sir. You will recall that many people in North Dakota thought that the modification was not necessary. I am not so sure whether it was necessary. The project was authorized as many other projects were. Many of these projects were constructed since that time without any further modification, but we were willing to go along with the modification and it resulted in a favorable benefit-cost ratio.

Senator BURDICK. Senator Jordan, any questions?

Senator JORDAN. Senator, this modification brings it up to date. In the light of the experience that we have had back a few years with all of this modification, all that it does is to bring the plans up to date?

Senator YOUNG. It does cover some different acreage. There was a diversion on Snake Creek. The original plan covered the river into Montana, close to the northern border.

Senator JORDAN. Yes. Thank you.

Senator BURDICK. It reduces it from 1 million to 250,000 acres?

Senator JORDAN. I know it said that. This is a very good statement, Senator. You have made a comprehensive analysis of the problem.

Senator YOUNG. Thank you.

Senator BURDICK. Our next witness is Congressman Don L. Short, from North Dakota.

We will be glad to hear from you now, sir.

STATEMENT OF HON. DON L. SHORT, A REPRESENTATIVE IN CONGRESS FROM THE SECOND CONGRESSIONAL DISTRICT OF THE STATE OF NORTH DAKOTA

Representative SHORT. Mr. Chairman and members of the committee, I appreciate the opportunity your committee has so graciously provided for me to appear here today in the company of my colleagues in the Congress, the Governor of North Dakota and this group of distinguished citizens of North Dakota in support of the Garrison diversion project.

Specifically, Mr. Chairman, I am here in support of S. 178 introduced by yourself and Senator Young and Senator McGovern on the Senate side, and on the House side by Congressman Nygaard and myself who has introduced identical legislation.

In the interest of saving time, I will be very brief and leave the details to others regarding the characteristics of this project which will mean so much to the economy of our State. Many of those here today have spent years of time and effort to bring about the implementation for North Dakota of the irrigation part of the Garrison project.

The Garrison diversion irrigation unit will be the principal benefit to North Dakota from the development of the Missouri River Basin. Power is being generated, it is true, at the Garrison Dam, but a major portion of this power is used outside of North Dakota. To emphasize the fact that North Dakota is not enjoying any unusual benefit from generous amounts of cheap hydroelectric power, we have only to note that, during the month, ground will be broken to build one of the largest steam-generating plants in the whole Midwest area almost within sight of the Garrison hydroelectric installation.

Boating, fishing, and other water recreation is enjoyed around the Garrison Reservoir and these recreational benefits are substantial, but they hardly offset the sacrifice North Dakota has permanently made in the interest of harnessing and controlling the mighty Missouri.

The dramatic aspect of the Missouri Valley development so far as the State of North Dakota is concerned, is the loss we have sustained, rather than the benefit we have received. I don't use the word "dramatic" loosely because it is a dramatic development when a State

gives up nearly 200 miles of beautiful and productive river valley, comprising a total of over 550,000 acres, to permanent flooding. Included in this total acreage were tens of thousands of acres of the finest land in North Dakota.

This valley provided the dependable feed base land, the water and the winter shelter for a substantial part of the range livestock economy of North Dakota.

Mr. Chairman, I mention these adverse effects on my State, where I have spent my life and which I love very much, not to detract from the overall value of the development of the Missouri River Valley but to emphasize that North Dakota did not hold back in making a necessary sacrifice for the greater good. North Dakota knew she was making a contribution. She was given positive assurance with the passage of the 1944 act that she would also receive some benefits from irrigation. To date, North Dakota not only has not received these benefits, but we find ourselves here today asking for reauthorization of a project that we thought was authorized for all practical purposes nearly 20 years ago. I am sure it is not necessary for me to point out to you what implementation of this irrigation project can mean to the economy of our State.

North Dakota, it seems to me, has made a very generous contribution toward the Missouri River Basin project. Now, we are asking for some help in obtaining our just share of the benefits from this great program. We are only asking for congressional approval of that part of this overall project that was once authorized by Congress and in the minds of the citizens of our State always a part of the Missouri River Basin project.

Thank you for scheduling this hearing on this most important development to North Dakota. I sincerely hope you will give your approval to the Garrison diversion unit.

Senator BURDICK. Thank you, Mr. Short, for a very excellent statement.

Senator Jordan?

Senator JORDAN. No questions.

It is nice to have you with us, Congressman Short.

Representative SHORT. Thank you, sir.

Senator BURDICK. Thank you.

Representative SHORT. Thank you.

Senator BURDICK. Our next witness is Representative Hjalmar C. Nygaard of North Dakota.

It is always a privilege to welcome a member of the House Interior Committee to the Senate Interior Committee.

**STATEMENT OF HON. HJALMAR C. NYGAARD, A REPRESENTATIVE
IN CONGRESS FROM THE FIRST CONGRESSIONAL DISTRICT OF
THE STATE OF NORTH DAKOTA**

Representative NYGAARD. Mr. Chairman, and members of the committee, as a member of the House Committee on Interior and Insular Affairs and also a member of the Subcommittee on Irrigation and Reclamation, it is a pleasure for me to appear before the Senate Interior Committee in support of S. 178, the Garrison diversion project.

North Dakota has an important stake in the development of the Missouri River Basin. Historically the Missouri River has always been regarded as an assured water supply in North Dakota. The interest in diverting water from the Missouri River goes back over 70 years to the early discussions of bringing water from that stream to Devils Lake and eastern areas of the State.

It became necessary for affected landowners in the Missouri River Basin in North Dakota to give up over half a million acres of valuable agricultural land in order to provide for the reservoirs behind the Garrison and Oahe Dams. This proved to be a distinct and serious economic loss in several ways. It reduced the acreage of fertile river bottom lands and good grazing lands for the dominant livestock production in that area. It also greatly reduced the tax base of the many affected governmental units which means a permanent loss of tax revenues.

Not only does interest in Missouri River water diversion go back many years, but the actual groundwork for the diversion program was laid in conjunction with the authorization and construction of the Garrison Dam and Reservoir. An estimated \$70 million of Federal funds have been spent on structures directly related to the Garrison diversion unit proposal. This includes auxiliary features and portions of the cost of main structures of the basin project which also will serve the irrigation development. The major benefits from these will not be realized until they are placed in service and ultimate use thereof is realized.

One of the principal objections we hear to a project of this type is that it would add to agricultural surpluses. It should be pointed out that with regard to Garrison diversion this is a fallacy.

In the first place, development of this 250,000-acre project is estimated to take about 30 years to complete. At the end of that time the national population will be from 220 to 260 million according to some estimates. At the same time our Nation will be losing from 1 to 1¼ million acres of good agricultural land each year for highways, airports, industries, and other manmade facilities. It should be recognized that we must provide for the more efficient use of our agricultural lands. Irrigation certainly is one means of doing this.

Furthermore, irrigation will bring major diversions of land use. Over half of the land in the project now devoted to small grain farming is expected to be used for raising feeds so that livestock feeding will take its proper place in North Dakota's agriculture economy.

Through the years North Dakota has periodically suffered from severe drought. All of us are familiar with the economic losses that result both directly and indirectly from such conditions. The reduction in our agricultural income, which is basic to our economy, adversely affects all citizens of the State.

Prolonged drought in a feed area often results in disposition of livestock in quantities which have depressing effects on markets. As a result the livestock industry in the Nation as a whole suffers.

Industrial development in North Dakota is often restricted because of the very limited water supply available. The assured water supply that can be made available through this project can materially improve the opportunities for agricultural processing industries in the State.

The lands which will be irrigated under the Garrison diversion program will not be new lands but will be lands which are presently used in agricultural production. Garrison diversion is no effort to reclaim desert land; it is simply an effort to stabilize moisture conditions over a part of North Dakota.

The plan for the Garrison diversion unit does not include provision for the production of hydropower. It is a multiple purpose water resources project that will provide a much needed water supply for beneficial use in a large section of North Dakota.

Senator BURDICK. Thank you, Congressman Nygaard.

Senator Jordan?

Senator JORDAN. I was interested in some of your figures here, the figure of 500 thousand acres of farmland, which was largely bottom land, which was inundated by the reservoirs behind these two dams, Garrison and Oahe.

Representative NYGAARD. Yes; that is correct.

Senator JORDAN. And these 250,000 acres upon which you will put the water is only one-half of the amount that was lost to your economy by inundation from the reservoirs, is it not?

Representative NYGAARD. That is correct, sir. And it will not return 50 percent of the loss that we have suffered as a result of the inundation. I believe that if the figures were to be used in their entirety, plus certain figures, rather than one-half million it would be 550,000 acres that have been inundated.

As I indicated, if we were putting nonagricultural land into irrigation I think that maybe it would show that we were reviving a greater portion of the lost economy. However, we are stabilizing and improving the economy of the existing agricultural land. Therefore, it is our feeling, this being the first stage of the diversion, that we must complete the full project of 1 million acres over a period of years in order to regain the economy that we have already lost.

Senator JORDAN. Thank you, Congressman Nygaard, for a very interesting statement.

Senator BURDICK. I, too, want to compliment the Congressman on his statement.

The tax lost from the 550,000 acres is gone forever, is it not?

Representative NYGAARD. That is true. The tax base that was suffered in the loss of the 550,000 acres, of course, will not be regained. The improved economy on the 250,000 acres, over a period of time, may to some extent recover a portion of that, both in income taxes to the Federal Government, income taxes to the State, as well as increased personal property on real estate values in the areas to be irrigated.

Senator BURDICK. It is, also, a fact that the land that has been taken for reservoir purposes was irrigable land and could have been irrigated out of the river.

Representative NYGAARD. That is true, Senator. And besides that there is another factor that enters into the loss of this particular land, being river bottomland, and this being quite rolly terrain adjacent to the rivers, and in this particular area the farmers were producing the forage for their livestock and their winter quarters were on the lower levels and in the areas that were inundated; therefore, the high areas that were used for grazing, the value of those were reduced by the loss of the sustaining feed areas that were inundated by the two dams.

Senator BURDICK. Thank you very much.

Representative NYGAARD. Thank you.

Senator BURDICK. I have just been advised that Senator Mundt is detained in the Appropriations Committee elsewhere in the building, but that his statement will be made a part of the record at this point. (The prepared statement of Senator Mundt follows:)

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

Mr. Chairman, I want to thank you for this opportunity to submit this statement as a part of the hearing record on S. 178, the legislation for modification and authorization of the Garrison diversion unit, which I have cosponsored with my senatorial colleagues from North and South Dakota, Senators Young, Burdick, and McGovern.

We, in South Dakota, are hopeful that this legislation will move expeditiously through the Congress since initiation of activity on the Garrison diversion unit means much to the economy of our area of the country. We, in South Dakota, have a continuing and direct interest in the development of all Missouri River Basin projects. We know that with the full development of all phases of the project in this great basin, there is projected a new era of economic opportunity and growth for this great region of the country. Development of the total Missouri Basin program will not only greatly stabilize the agricultural economy in a large section of the Midwest but will also provide new opportunities for industrial growth and economic security.

While most of the Garrison diversion unit lies in North Dakota we in South Dakota do have a tangible interest in the program since the Oakes section extends into Brown and Marshall Counties in the north-central part of South Dakota and effects about 56,000 acres of South Dakota farmland. Our farmers still have tragic memories of the dry thirties and other drought years and are most interested in developing methods for the conserving of water and the utilization of it for irrigation purposes. With the construction of the projects on the Missouri River and the retention of the water behind the huge dams, we now can devote our talents and our energies to finding ways to utilize this water for new irrigation projects to diversify our farming operations, for recreation purposes, for municipal water supply, and other uses. In our State, where a semiarid climate at times prevails, we must at every opportunity preserve and utilize all the water we can at every opportunity.

Further, in looking forward, we hope that the lessons to be learned from development on the Garrison diversion unit can also go hand in hand with our development program on the Oahe diversion unit so that our two Dakotas can truly become the land of infinite variety in the production of agricultural commodities resulting in a stabilized economy for, not only the farmers of the area, but for the small business entrepreneurs up and down the main streets of our small towns and for all the people of this highly important area.

I would also like to have inserted in the record a telegram from Mr. Fred H. Holscher, the chairman of the Oahe Conservancy Subdistrict board of directors which supports this legislation.

PIERRE, S. DAK., June 5, 1963.

Senator KARL E. MUNDT,
Senate Office Building,
Washington, D.C.:

Understand hearings are to be held June 6 before Senate subcommittee of Interior and Insular Affairs Committee relative to a bill authorizing the Garrison diversion unit in North Dakota. This is to advise that the Oahe Conservancy Subdistrict board of directors support the Garrison diversion unit and urge favorable consideration.

FRED H. HOLSCHER,

Chairman, Oahe Conservancy Subdistrict Board of Directors.

Senator BURDICK. Our next witness is the Honorable William L. Guy, Governor of the State of North Dakota.

**STATEMENT OF HON. WILLIAM L. GUY, GOVERNOR, STATE OF
NORTH DAKOTA**

Governor GUY. Mr. Chairman and members of this subcommittee, I am William L. Guy, Governor of the State of North Dakota.

On behalf of all North Dakota I wish to express to you our sincere gratitude for scheduling this hearing on S. 178. This bill will provide certain modifications of the authorization of the Garrison diversion unit, which was originally approved by Congress as a part of the Missouri River Basin project in the Flood Control Act of 1944. We are very happy to have the opportunity to present to you our case in support of this bill.

I have been associated with agriculture at Amenia in Cass County, N. Dak., nearly all my life. Prior to becoming Governor of the State, I operated our family farm there for a period of 13 years. I hold a master's degree in agriculture from the University of Minnesota and for several years taught agricultural economics at the North Dakota State University. I am thoroughly familiar with the uncertainty that every North Dakota farmer faces each year in his operations—an uncertainty that can be attributed to a great extent to the hazards of drought. The only known solution to this problem can be found in irrigation such as is possible under a wide area of central and eastern North Dakota through the development of the Garrison diversion unit.

North Dakota's basic industry is agriculture. Ninety percent of the State's total land area is classified as farmland, and income from agriculture accounts for approximately three-fourths of all wealth created by North Dakota enterprise. Approximately two-thirds of the agricultural income in North Dakota comes from crop production and one-third from livestock and dairy products. When a drought period strikes not only is our agriculture adversely affected but so are all other segments of the economy of North Dakota. This has been proven time and time again throughout the history of our State. Our "boom and bust" economy inherent in our dryland farming operations has resulted in a static or retarded economic growth in North Dakota.

Opportunities for industrial development in North Dakota not associated with farming are severely limited primarily because of the State's geographic location. The fact that North Dakota's economic growth has not kept pace with that of the rest of the Nation is indicated by a number of growth factors. For example, our population from 1950 to 1960 increased only 2 percent compared to 18½ percent for the Nation as a whole. Our personal income during the last 10 years has increased only 41 percent compared to 77 percent for the national average.

North Dakotans have, in spite of their below-average personal income, striven to provide for economic development as well as essential services through State and local units of government. This is indicated by the fact that the ratio of taxes paid to personal income in North Dakota is second highest among all the States of the Nation.

North Dakota has a very keen and a very direct interest in the Missouri River Basin project. We see in the full development of all the units of the project a new era of economic opportunity and growth for this region of our Nation. Garrison diversion unit, North Dakota's primary interest in the total Missouri Basin development, will not only greatly stabilize the agricultural economy in a large section of the State but will also provide new opportunities for industrial growth and economic security. However, until the Garrison diversion unit is developed, I am convinced that the overall impact of the Missouri River Basin project on the economy of North Dakota will continue to be negative. This is due to the fact that North Dakota has been required to give up 551,000 acres of fertile agricultural bottom land for Missouri River main-stem reservoirs.

The negative impact of such a significant loss of one of our most important assets, our land resources, has been emphatically set forth in a study conducted by the North Dakota State University titled "Negative Impacts of the Garrison and Oahe Reservoirs on the North Dakota Economy." Facts pointed out in this study indicate the following: (1) Based on the potential land use of the areas acquired, the direct loss to the North Dakota economy totals \$15.7 million annually because of these main stem reservoirs; (2) the indirect loss related to the severance of the bottom lands from the uplands amounts to \$2.7 million each year; (3) the net annual loss to wildlife habitat is estimated at \$216,000; (4) the value of timber resources lost through reservoir inundation is estimated at \$38,649,000; (5) approximately 217,000 acres of irrigable land are inundated by the reservoirs or subjected to erosion; therefore, the increased contribution that irrigation development of these acres could have made to the economy of North Dakota has been forever destroyed; and (6) an estimated 5,850 million tons of lignite coal was left in the land inundated by these reservoirs.

In addition, it is estimated that 700 farms and ranches were eliminated, 1,250 residents of towns and rural communities were displaced and approximately 2,500 of our Indian population were required to find new homes. These, I am sure you will agree, are significant contributions that North Dakota has made to the overall development of this important river basin project.

When Congress authorized the Missouri River Basin project, in the Flood Control Act of 1944, they recognized the need to mitigate the damages caused by the inundation of these large acreages of land by essential main-stem reservoirs by including, in the overall plan, provision for irrigation development in the upper basin States. The plan for the Garrison diversion unit is a modern and modified version of the original proposal for irrigation development in North Dakota. It has been thoroughly and carefully investigated by the Bureau of Reclamation over a number of years, and has been determined to be engineeringly sound and economically feasible.

The development of the Garrison diversion unit can provide an assured water supply for irrigation of a million acres of land in central and eastern North Dakota, and meet all foreseeable municipal, industrial, and other water needs of many communities in over one-half of the State's area. The development of the Garrison diversion unit will have a greater impact on the agricultural and industrial growth of North Dakota than any other potential development known today.

North Dakota is an exporting State. We welcome the opportunity to export the products of our soil and enterprise; however, we are deeply concerned over the export of our most precious resource—our young people. During the decade 1950-60, the net migration from our State was 106,000 people. A study of the population statistics indicates that a large percentage of the people leaving the State were in the 20-40 year age group, or from the most productive segment of our labor force. These young people, who were educated in North Dakota, left the State primarily because of the lack of opportunity. We are confident that the expanded agricultural and business economy that will result from the Garrison diversion unit will provide the needed opportunities that will encourage many of these citizens to remain in North Dakota.

North Dakotans have long seen the need for the sound development of their land and water resources. For many years they have looked to the Missouri River as a source of water to stabilize the agriculture over a large area of the State. Proponents began their efforts to achieve a Missouri River diversion in North Dakota over three-quarters of a century ago. They have contributed generously of their time and money to bring about such a development. The investments that the State government of North Dakota have made to further the Missouri River Basin project in the State includes about \$2 million that has been made available to the Bureau of Reclamation and other Federal agencies in their investigations. In addition, State agency and local agency expenditures for this project are estimated at \$5 million.

North Dakota's agriculture is based primarily on the production of wheat and other cash grains, many of which are chronically in surplus. These are the crops that are best adapted to North Dakota's dry land farm economy. Much as our farmers desire to diversify their operations and crop production, their opportunities to do so are definitely limited by the rainfall received in our semiarid State. It is difficult to establish a livestock enterprise without assurance of an adequate feed supply from year to year. We recognize the need to shift our agricultural production to those crops consistent with shifting consumer demand, such as meat and dairy products, fruits and vegetables, but we are frustrated in our efforts to do so because of limited rainfall conditions.

We are firmly convinced that irrigation offers the answer to this problem. We know that adequate irrigation water from the Missouri River for North Dakota is now available in the main stem reservoirs on that river. We are seeking a way and means of putting this water to work to solve one of the major problems facing our agriculture.

Irrigation not only will stabilize much of the agricultural economy of our State and permit diversification in crop production but it will also tend to reduce the acreage devoted to the production of crops that are now in surplus. It is contended that the development of the million-acre Garrison diversion unit will result in a reduction of the land devoted to the production of wheat and small grains by over 500,000 acres. Studies indicate that of the 250,000 acres proposed for irrigation development under the initial phase of the Garrison diversion unit, 85,000 acres that are presently devoted to the production of wheat and other small grain crops will be diverted to forage crops that will be utilized in the expanded livestock industry that is expected to

develop. The integration of dry land at a rate of 3 to 4 acres of dry land to 1 acre of irrigation will further reduce the acres devoted to wheat and small grains.

The Garrison diversion unit is not a project which can be constructed in a few years. It will require perhaps 70 or more years to achieve ultimate development of the 1 million acres. The project's flexibility can be noted in the various stages for the initial phase suggested.

Bureau of Reclamation investigations and studies indicate that the originally authorized 1-million-acre development is scattered in various size blocks throughout the project area. These lands are so located that it is feasible to construct smaller segments of the project under an orderly and economical program.

The Bureau of Reclamation and the Department of the Interior have recommended a 250,000-acre initial phase of development. Even this phase would require from 25 to 30 years to complete. I most respectfully urge the early enactment of desirable and needed legislation that will enable the Bureau of Reclamation to undertake the most feasible and practicable initial phase or stage of the Garrison diversion unit.

There are several provisions of the bill, S. 178, which I wish to emphasize. Section 2 provides for the inclusion of fish and wildlife and recreational features of the plan as nonreimbursable items. These are vitally important features of the Garrison diversion unit, and I urge your favorable consideration of their inclusion in the project.

Opportunities for fish and wildlife enhancement through the development of the multiple-purpose Garrison diversion unit are significant. This is indicated by the allocation of project costs to this feature which represents about 10 percent of the total costs. There are 36 major areas and over 50 small areas that can be developed for fish and wildlife purposes included in the project plan. North Dakota is famous for its wildlife resources, particularly its waterfowl. We raise up to 80 percent of the wild ducks produced in the United States.

The assured water supply that will be available in the central and eastern portions of the State through the Garrison diversion unit will materially improve the ability of this area to help maintain the Nation's waterfowl resources.

The importance of recreational development, possible through the Garrison diversion unit, cannot be overemphasized. Opportunities for new recreational areas around major reservoirs and restored lakes are significant, and will fit in well with the present need for expanded outdoor recreational facilities. Nine new major recreational areas can be developed under the 250,000-acre Garrison diversion unit. Included is the plan for restoring and freshening Devils Lake and Stump Lake. When restored, these lakes undoubtedly will be outdoor recreation meccas for thousands of citizens from the northern Great Plains area.

Missouri River water available through the Garrison diversion unit will also provide extensive municipal and industrial benefits. Many communities throughout the project area are stymied in their growth and development at the present time because of inadequate water supplies from both a quality and quantity standpoint. Several of our major cities and a number of our smaller ones as well as the two Air Force bases that have been constructed in North Dakota in

recent years can be assured of adequate water supplies through the project system.

A most important provision of S. 178, which I urge you to approve, is the provision that will authorize the Secretary of the Interior to pay just compensation to owners of private lands west of the 100th meridian for lands needs for right-of-way purposes. Although your committee is familiar with the reservation provided in the Public Land Act of August 30, 1890, I quote it here:

In all patents for lands taken up after August 30, 1890, under any of the land laws in the United States or on entries validated by the act of August 30, 1890, west of the 100th meridian, it shall be expressed that there is reserved from the lands in said patent described a right-of-way for ditches or canals constructed by the authority of the United States (Aug. 30, 1890, ch. 837, sec. 1, 26 Stat. 391).

The 100th meridian passes through the approximate center of North Dakota and divides the Garrison diversion unit about in half. Under the act of 1890 rights-of-way for ditches and canals east of this line must be purchased. West of this meridian, unless otherwise specifically authorized, those tracts required for rights-of-way on lands patented before 1890 must be purchased, but those patented after 1890 need not be purchased. About 75 percent of the land west of the 100th meridian that will be required for project canals, was patented after 1890, and does not have to be purchased. The remaining 25 percent was patented before 1890; therefore, would have to be purchased under the law. Obviously an unfair situation will develop unless authorization to purchase all rights-of-way is given to the Secretary as proposed in S. 178.

It is my opinion that the right-of-way reservation as applied to the Garrison diversion unit goes considerably beyond anything that could have been in the minds of the framers of the act of August 30, 1890. For instance, on the McClusky Canal, the main canal for the Garrison diversion unit, the right-of-way requirement will approach the width of a quarter of a mile in places of deep cut. This might mean taking almost 80 acres out of the farmer's quarter section of land. I am sure that such a canal is a far cry from the simple ditches along river bottom meadows that were irrigation canals of 1890. Then, too, this canal passes through an area of farmland which is not irrigable and where no irrigation is contemplated. To further complicate the situation, approximately 50 percent of the land required for this canal located west of the 100th meridian was patented before 1890; therefore, the act of August 30, 1890, does not apply.

It is my understanding that the Bureau of Reclamation in their cost estimate for the project has provided for the purchase in fee simple of all rights-of-way needed for ditches, canals, and drains. The Bureau feels that title in fee is desirable for reasons of operation and maintenance and because the project canals will serve many other uses besides the irrigation use contemplated by the act of 1890.

I know your committee will recognize and carefully consider the inequitable situation which will arise if some landowners are paid for land needed for rights-of-way and others who might be their neighbors will receive no compensation. I sincerely hope that you will approve and recommend a uniform payment procedure for all lands taken for rights-of-way for the project.

There is widespread support for the Garrison diversion unit throughout North Dakota. This has been indicated in a number of

different ways, including concurrent resolutions that have been approved by the North Dakota Legislature for the past several sessions. The strong support that will be indicated to your committee today from various organizations and agencies throughout the State surely is another indication of the sincere interest of North Dakotans in this important development. At a House Interior Committee hearing held in Devils Lake, N. Dak., in 1957, over 3,000 persons from throughout the project area voluntarily made a trip, in some instances of 200 or 300 miles, to be present in support of the Garrison diversion project. The organization of eight irrigation districts throughout the project area, made on a voluntary basis, by the farmers who own the irrigable land and will have to pay the irrigation water costs shows the support from farmers who will be most directly affected. Our 25-county Garrison Diversion Conservancy District was established in 1955. That district's activities since it was organized and its authority to tax both direct and indirect beneficiaries for project costs further emphasizes the sincerity of our citizens for this project.

The support for the Garrison diversion unit comes not only from State organizations and agencies but also from throughout the Missouri River Basin. As chairman of the 10-State Missouri River States Committee, composed of the Governors and their representatives of the Missouri River Basin States, I have noted strong support from all sections of the basin for the completion of the Missouri River Basin project as it was authorized. Resolutions to this effect have been approved by the Missouri River States Committee on several occasions.

Although major benefits are being realized in the basin through the development of navigation, flood control, pollution control, municipal and industrial water supply, recreation and electric power generation, the important benefit from the project to the upper basin States remains to be realized. That benefit, of course, is irrigation. In urging your approval of this legislation to authorize the construction of the Garrison diversion unit I do so knowing it is an integral and essential part of the overall Missouri River Basin project which is so necessary to the continuing growth and strength of our Nation.

Mr. Chairman, that concludes my statement, but I do have a concurrent resolution from the last session of the North Dakota Legislature in support of this legislation which I would like to introduce into the record.

Senator BURDICK. Without objection, it will be made a part of the record at this point. Thank you for a very fine and complete statement.

(The resolution follows:)

38TH LEGISLATIVE ASSEMBLY OF NORTH DAKOTA

SENATE CONCURRENT RESOLUTION

A concurrent resolution memorializing the Congress to promptly review and approve modifying provisions in connection with the construction of the Garrison diversion unit thereof

Whereas construction of the Garrison and Oahe Dams on the Missouri River has resulted in the loss of more than one-half million acres of good agricultural lands in North Dakota for reservoir purposes which loss can, to a considerable degree, be mitigated through the development of irrigation as proposed under the multiple-purpose Garrison diversion unit; and

Whereas such irrigation development in North Dakota, which was authorized by Congress as a part of the Missouri River Basin project in the Flood Control

Act of 1944 and originally designated as the Missouri-Souris unit, has been modified and redesignated as the Garrison diversion unit as a result of studies of the Bureau of Reclamation as set forth in the report of the Secretary of the Interior contained in H. Doc. 325, 86th Congress, and subsequently revised and updated by the Bureau of Reclamation report of November 1962; and

Whereas exhaustive studies and investigations by the Bureau of Reclamation have determined the Garrison diversion unit to be an engineeringly sound and economically feasible water resources project that will bring many benefits to the State of North Dakota, the region and the Nation through the balanced and stabilized economy that will develop in the project area; and

Whereas S. 178, H.R. 1003 and 1013 that would modify and confirm the authorization of the Garrison diversion unit have been introduced in the current session of Congress by the Members thereof from North Dakota: Now, therefore, be it

Resolved by the Senate of the State of North Dakota, the House of Representatives concurring therein, That the 38th Legislative Assembly of the State of North Dakota, most respectfully and sincerely petitions and urges the Congress of the United States to promptly consider and take favorable action on S. 178, H.R. 1003 and H.R. 1013 to the end that enactment thereof will be accomplished this year; and be it further

Resolved, That the secretary of State is hereby directed to forward copies of this resolution to the chairman of the Senate and House Committees on Interior and Insular Affairs, the members of the North Dakota and South Dakota congressional delegations, the Secretary of the Interior, and the Commissioner of the Bureau of Reclamation.

Filed in the office of the North Dakota secretary of State March 12, 1963.

Senator BURDICK. At this time I will ask the Senator from South Dakota to make an introduction.

Senator MCGOVERN. Mr. Chairman, we have in the hearing room this morning a delegation of young people from South Dakota. Some time ago the Rural Electric Association in our State sponsored a contest for high school students, to give them an opportunity to describe the values of rural electrification in South Dakota, and some 31 winners of that contest were selected for a trip to Washington.

They are here with Mr. and Mrs. Ray Kuhl and Mr. and Mrs. Loren Zingmark, and I think it would be worthwhile to have this delegation of young people stand so that you can see who they are.

Senator BURDICK. Thank you very much. You are welcome here today, and I sincerely hope you can stay for the entire hearing.

Governor, one of the objections that we hear in Washington to all irrigation projects is this: Why do we spend money to develop land when we have a surplus of agricultural production in the country?

Governor GUY. The practical concept of reclamation is of reclaiming acres that are not now agricultural into acres that would be agricultural. Reclamation in this instance is reclaiming acres that have been lost through inundation and are not an addition of new acres into production. And so I think that there is quite a vast difference.

We know there is a shifting demand in consumer demand for farm products, and we think that all agriculture, nationwide, would be willing to flex itself, to adapt itself to the existing demand. We know the demand is shifting from cereal products to meat, dairy products, fruits, and vegetables. And so this project is consistent with the very obvious shifting of consumer demand. Therefore I think it is economically sound and reasonable.

Senator BURDICK. I really should emphasize and point out again, as you say, that this is not a classical reclamation project, since all of the land that is being irrigated is not in agricultural production.

Governor GUY. That is correct. It is not bringing back new land into production. It is simply trying to compensate for land that would have been in production had it not been for these reservoirs.

Senator BURDICK. On page 6 of your statement, you develop the thesis that this project actually will reduce wheat production. You emphasize that.

Governor GUY. That is correct. Almost all livestock units must have a forage part of their combination of enterprises. By the loss of bottom lands we lost the forage part of the livestock units, leaving only the dry land. Dry land is suitable only for cereal crops, principally wheat. By bringing into play irrigation, we are making it possible to reestablish livestock units out of the traditional cereal of wheat economy or dry land farming.

Senator BURDICK. And you think then that the shift to livestock production will reduce the acres in certain areas that are irrigated?

Governor GUY. I do. I think that we in the backbone of the Nation will shift livestock production because of the growth of the population in the western part of the United States. It is shifting eastward, the livestock marketing. In other words, the livestock production that moved to the west coast is shifting—it is shifting eastward all of the time. This means that our upper Midwest States have had to increase their livestock production.

So the project would bring irrigation and livestock production into North Dakota consistent with the very present fact that we are going to be asked to produce more meats, fruits and vegetables, and dairy products in years ahead.

Senator BURDICK. To fortify your argument, I would like to point out that at page 4, section 6 of the bill, there is a prohibition in the legislation itself against the raising of surplus crops for a period of 10 years from the date of authorization. Would that not give the taxpayers further assurances that no surpluses would be permitted on these lands?

Governor GUY. Yes. I think it would, but I think that just plain hard, cold dollars and cents economics would prevent the farmers from using irrigable land in the production of cereal crops. There are other crops that can be grown to much greater profit advantage than cereal crops under irrigation.

Senator BURDICK. And section 6 just gives additional assurance, does it not?

Governor GUY. Yes.

Senator BURDICK. Senator Jordan?

Senator JORDAN. This hearing this morning has been unusual in at least two respects:

First, the distinguished group of witnesses we have had appear before us in support of this project, and secondly, for the first time in my recollection we are having given to us some of the negative impacts of a great river resource development. I am impressed by the statement that you made, Governor Guy, on page 3, about the annual loss to the State of North Dakota by reason of these two great river projects.

You say:

The negative impact of such a significant loss of one of our most important assets, our land resources, has been emphatically set forth in a study conducted by the North Dakota State University titled, "Negative Impacts of the Garrison

and Oahe Reservoirs and the North Dakota Economy." Facts pointed out in this study indicate the following:

(1) Based on the potential land use of the areas acquired, the direct loss to the North Dakota economy totals \$15.7 million annually because of these mainstem reservoirs.

And then you say that the indirect loss related to the severance of the bottom lands from the uplands amounts to \$2.7 million each year.

And that I can understand.

You say further that the net annual loss to wildlife habitat is estimated at \$216,000.

And you further state that the value of timber resources lost through reservoir inundation is estimated at \$38,649,000.

I would guess, then, that you calculate the annual loss to your State by reason of these two projects to be in the neighborhood of \$20 million. Would that be a fair statement?

Governor GUY. I think that our average annual cost of loss to the economy by the loss of the basic production unit, when multiplied in the normal process in all segments of our economy will approximate \$15 million a year.

Some of these other figures are investment, until they are mined or taken advantage of and perhaps cannot be listed as an annual loss, but they will eventually, of course, accrue to an annual loss.

Senator JORDAN. Yes.

Governor, at what point in the development of this project would you calculate that you would recover the amount of your present \$15 million loss—the figure that you have given—would you do it in this first quarter of 1 million acres?

Governor GUY. This first quarter of a million acres—it will be 30 years before it is complete—and we will have lost nearly \$1 million by that time, over that period of 30 years. And so I would say that we can never recover our total contribution to the Missouri Basin development throughout the entire Missouri Basin until the 1-million-acre project is completed.

It looks like almost an endless contribution by the State of North Dakota to the Missouri Basin development.

Senator JORDAN. That is an unusual situation. We do not often have that kind of testimony as to the adverse effect of such a development.

I am wondering why this project has not gotten underway before now?

Governor GUY. Well, I was chairman of the Missouri Basin Committee. We knew that the development of the entire basin had to take place in various steps. We knew that flood control, navigation, electric power generation, municipal and industrial development had to take place, probably justifiably, with first priority. When these things have taken place, naturally the smaller populated States have lost their leverage for further development of the basin.

And so we feel now that the other total basin developments having taken place successfully for the most part, that we perhaps have lost the impetus of the entire support of the basin for the completion of the project, which includes irrigation.

I would say that it is probably a lack of political power to complete this basin development that has caused the irrigation to lag.

Senator JORDAN. That is a very interesting analysis of this whole problem. I had not been aware of it up until this morning as to the adverse effect of these great projects on one State which seems to be penalized for the development of the whole basin downstream.

Your State seems to have taken the negative impact of the whole project up until now. Is that a fair statement?

Governor GUY. I think that we and perhaps a State such as South Dakota and the State of Montana have taken the major share of the negative impact of this development.

Senator JORDAN. And it is substantial?

Governor GUY. Yes, it is.

Senator JORDAN. As you state.

Governor GUY. Yes.

Senator JORDAN. Thank you, Governor, for a very good statement.

Governor GUY. Thank you.

Senator BURDICK. Senator Young, any questions?

Senator YOUNG. No questions.

Senator BURDICK. Senator McGovern?

Senator MCGOVERN. I just would like to compliment the Governor on what I regard as a very masterful statement. It not only shows a great, unusual grasp of the philosophy of resource development, but an almost unique mastery of the technical problems involved. I am very much impressed by it. I am glad that I was here to be able to hear your statement.

Senator BURDICK. Thank you very much, Governor Guy.

Governor GUY. Thank you.

Senator BURDICK. Our next witness is Assistant Secretary of the Interior Kenneth Holum.

STATEMENT OF HON. KENNETH HOLUM, ASSISTANT SECRETARY OF THE INTERIOR

Mr. HOLUM. Thank you, Mr. Chairman and members of the committee.

I am very happy to have been here in the committee room this morning to have heard the very excellent statements of the sponsors of S. 178 and the statements of other members of the delegations from the two States affected. Certainly, I join with the members of the committee in complimenting the Governor of North Dakota for the very excellent and comprehensive statement that he has made to this committee.

It seems to me that the arguments expressed in support for the immediate adoption of S. 178 have been well made.

For myself, I am happy to be here this morning to request on behalf of the Secretary and the administration the immediate enactment of S. 178 and the early construction of the first 250,000 acres of the proposed Garrison diversion unit. The Garrison diversion unit is an integral and important part of the Missouri River Basin project authorized by the Congress in 1944, as set out in Senate Document No. 191.

Two years ago, on June 21, 1961, the same committee of the 87th Congress held similar hearings on the same projects. I believe that you have noticed, Mr. Chairman, the unique statement that President

Kennedy made on June 21, 1961, when this subcommittee heard similar legislation, which you have placed in the record.

At that time President Kennedy announced his support and his interest in this fine project by making a statement available to the press simultaneously with the start of the hearings. This four paragraph statement is so comprehensive and did such an excellent job of summarizing some of the reasons for the development of water resources across the country and, particularly, the early construction of the Garrison diversion unit that I should like your indulgence to read one paragraph from it, despite the fact that the entire statement is in the record, and I quote the paragraph:

As indicated in my message to the Congress on natural resources "wise investment in a resource program today will return vast dividends tomorrow, and failures to act now may be opportunities lost forever." The Garrison diversion project is an excellent illustration of the principle. The investment to be made now in the upper Missouri River Basin will in the future bring to the people of the Dakotas and the Nation at large great benefits in the form of a sound agricultural economy, improved recreational facilities, and perhaps most important of all, the region will be able to retain and support its greatest resource, the young people who have in recent years been forced to leave farms in the areas in alarming numbers.

As has already been noted the Garrison diversion unit is principally a North Dakota project. There is a possibility that 20,000 or 30,000 acres of the Garrison diversion unit may be located, ultimately, in South Dakota. The Department joins with the sponsors of S. 178 in hoping that this proves to be the case.

The Missouri River Basin project as authorized in 1944 is a multi-purpose project in the true sense of the word. The great dams on the Missouri River—all of which have been completed or are nearing completion—provide flood protection and navigation opportunities for that important area of the country which lies along the Missouri River from Yankton, S. Dak., to St. Louis, Mo. The generators in the dams provide, and will continue to provide, electric energy to light the homes and serve the farms and businesses of the six State area. The recreation and the fish and wildlife features grow in regional and national significance daily.

However, one phase of the Missouri River Basin project has lagged behind the others. The principal and important irrigation features remain to be constructed. The Garrison diversion unit is one of the principal irrigation features of the total Missouri River Basin project. Certainly we hope that it will be authorized by the 88th Congress and brought under construction at an early date.

I know the area of the Garrison diversion project well. Prior to coming to Washington, I have lived all of my life on a South Dakota farm with similar soils, comparable climate, and the same economic problems.

The soils are good and capable of producing high yields of both cereal and forage crops. Agricultural productivity and economic growth in North Dakota and all of the high plains area of the Midwest have been limited by deficiencies of water and rainfall rather than by soil fertility.

Reclamation's competent technicians assure me that these soils are completely adaptable to sustained irrigation with the facilities planned in the project report which the committee is considering.

Recurring droughts have forced Dakota farmers to depend principally upon cereal crops. I am personally convinced, and Reclamation's technicians agree with me, that an irrigated agriculture in these high and droughty plains would very quickly move from cereal grains as the principal crop to a basic reliance on forage crops and livestock. In fact, with assured winter forage available, I would expect notable shifts from cereal grains to livestock to occur in a wide area surrounding the actual irrigated acres.

With 250,000 acres brought under irrigation by this initial phase of the Garrison diversion unit, and with additional acres to come later on as succeeding units are authorized by the Congress, coupled with other projects to be built in South Dakota, Montana, and Nebraska when they are authorized and financed by the Congress, we can expect the whole area to modify its cropping patterns and to resume its economic growth.

It is interesting to note that the report issued by the Department of Agriculture of May of 1962, and confirmed in a recent report published which indicates that the Nation will increase its livestock from 50 to 55 percent between the years of 1960 and 1980, with an opportunity to move substantial areas of the high plains production from cereal production to the production of livestock, which will not only contribute to alleviating the grievous problem in an area of recurring surplus of cereal crops, but will present an opportunity to meet national needs for increased livestock production as our population grows and our habits change.

The physical features of the project as displayed on the map and in the reports on the project are substantially the same as those considered by the subcommittee 2 years ago when the committee acted favorably on the proposed authorization. Assistant Commissioner Palmer, Regional Director Johnson, and others from the Bureau of Reclamation and the Bureau of Sport Fisheries and Wildlife are available to discuss these matters as the committee desires.

Accordingly, I propose, if acceptable to the subcommittee, to limit my further remarks to a summary of the major goals of the legislation and some general observations concerning the policy aspects of current analyses.

First, S. 178 would accomplish three highly desirable objectives. They are:

1. Provide current congressional approval of changes in the physical plan which have been found to be desirable since the Missouri River Basin project was initially authorized by the Flood Control Act of 1944.

2. Correct inequities which would result from the application of the act of August 30, 1890, reserving right-of-way across certain lands for federally constructed canals and ditches.

3. Establish authority for treatment of costs associated with the development of recreation opportunities on an equal basis with other water resource purposes.

The original authorized plan for the Missouri River Basin project contemplated a 1 million acre irrigation unit principally within the State of North Dakota, but partially in South Dakota. Initially, the plan involved diversion from the Missouri River in Montana for service to lands located generally westward of those now proposed.

Studies have shown that many of the originally designated lands were unsuited to irrigation. For this reason the present plan has been developed.

Other changes in plan involve conservation and development of fish and wildlife, particularly waterfowl production. There is no more important waterfowl area in the 48 contiguous States than the prairie pothole region in which this unit is located. Waterfowl conservation is a major responsibility of the Department of the Interior, and our plan for the Garrison diversion unit includes important measures for this purpose. As a result of joint planning by the Interior agencies our current proposal will extend waterfowl benefits throughout much of the Nation.

The plan also has a great potential to create and enhance opportunities for outdoor recreation, a facet of water resource activity that is of increasing national interest. These are the changes in plan that would be confirmed by S. 178.

I am sure that the committee will want to direct particular attention to the recreational areas in Devils Lake and Chain Lake that are involved there which are great recreational resources.

The Garrison project provides us with an opportunity to restore these.

The second major end to be accomplished by S. 178 is to call attention to, and repeal insofar as this unit is concerned, the act of August 30, 1890, commonly referred to as the "Canal Act." It reserved a right-of-way across certain lands for irrigation ditches to be constructed by the Federal Government. It applies to parts of the proposed Garrison diversion unit and does not apply to others. In this sense, its application is discriminatory.

The third major objective would be to extend authority for the designation of allocated recreation costs as nonreimbursable. Such designation of specific recreation costs has been a common practice in practically all contemporary Federal reclamation authorizing legislation. The committee should note that in line with current policy, S. 178 also designates an appropriate portion of the joint costs as nonreimbursable.

Since our last appearance before the subcommittee, there have been developments which merit discussion. First of these is an increase in the estimated construction cost of the project of approximately 16 percent. This is attributed to a variety of valid factors and has been the subject of careful review and analysis. We are prepared to discuss and document these changes to the complete satisfaction of the subcommittee in the interest of showing that the proposed undertaking remains fully justified with a ratio of benefits to costs of 2.51 to 1.

It is also of particular significance to note that our present analysis of the Garrison diversion unit reflects a careful application of the "Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources" approved by President Kennedy on May 15, 1962. This statement was printed as Senate Document No. 97, 87th Congress.

Senate Document No. 97 affects the Garrison diversion unit in three specific ways and has an appreciable effect on economic and financial

relationships. We are now using an interest rate of $27\frac{7}{8}$ percent for economic analysis in lieu of $21\frac{1}{2}$ percent previously employed.

Recreation benefits are now calculated on the basis of refined values which has resulted in some reduction compared to those previously estimated. This change likewise reduces economic justification.

The statement approved by the President on May 15, 1962, recommends that recreation be treated equitably with other water resource purposes from the standpoint of sharing in the economy of multiple-purpose development. Our current analysis contemplates such sharing and results in the allocation of a portion of joint cost to recreation. In this unit, the amounts found to be so allocable are within the scope of costs which the Department feels should be a public responsibility.

Finally I should like to discuss with the committee the important matter of project repayment; \$212,383,000 of the Garrison diversion unit and \$35,851,000 of the cost of the main stem reservoirs are proper changes allocated to this unit. Under reclamation law and congressional policy these sums must be repaid but the capital is furnished on a noninterest bearing basis.

The irrigators themselves will be required to repay that portion that is within their ability. We estimate that revenues from water users will be sufficient to repay 13 percent of the total costs assigned. A conservancy district, I am told the largest in the country, has already been organized to assume this responsibility, as have many irrigation districts. Their representatives are here and I am sure they will speak to the committee themselves as to their willingness to assume this obligation. The balance, approximately \$166 million, will be recovered from power revenues as contemplated by reclamation law.

National law and policy have been substantially refined since the Missouri River Basin project was authorized in 1944. To cite an example, the Flood Control Act of 1944 does not require repayment of the reimbursable features within a specific period of time.

However in more recent authorizations Congress has indicated that it expects irrigation investments to be repaid within a 50-year period, after a reasonable development period.

For this reason, we initiated a comprehensive analysis of the repayment ability of the Missouri River Basin project immediately after the change of administration. The study involves the interests of many other agencies and departments and has been extremely complicated and time consuming.

We wish the studies were complete today. Unfortunately they are not, but we do expect to have them completed in the near future. When they are, we expect to work with the Congress to bring the Missouri River Basin project into harmony with other projects authorized more recently.

To accomplish this goal it will be necessary to make several changes and adjustments applying both to repayment periods and the formula used to compute interest rates. It will no doubt include the repayment of irrigation storage allocation and the irrigation pumping power suballocation simultaneously with their associated irrigation units. Appropriate allocations of joint costs to recreation and fish

and wildlife should be included. If the studies prove it necessary, the Department is prepared to make the necessary adjustments in power rates.

One thing is clear. Whatever problems exist are associated with those projects which are either existing or under construction. Those projects will result in a peak financial requirement in year 2020, and after that date ample revenues will be available to assist in the return of irrigation and power investments that might be made in the future. Once the payout of existing investments is solved, additional irrigation units, such as the Garrison diversion, can be readily repaid within a 50-year period following the permissible development period for irrigation. The authorization and construction of the Garrison diversion unit will in no way complicate or adversely affect the repayment situation of the Missouri River Basin project.

With these assurances we hope that the Congress will proceed with the enactment of Senate bill 178 so that this highly desirable reclamation project may be brought to construction at an early date.

Thank you.

Senator BURDICK. I want to thank you for a very favorable statement.

Mr. HOLUM. We are for public projects, Mr. Chairman.

Senator BURDICK. I notice two highlights in the statement that I would like to draw attention to for a moment. You say that the authorization of the construction of the Garrison unit will in no way adversely affect agriculture?

Mr. HOLUM. That is correct, Mr. Chairman. The financial problems of the Missouri Basin have been widely discussed in Congress and in the administration by the public. The problems associated with the peak financial requirements of it concerns the year 2020. When these peak financial requirements have been met there will be ample revenues available to furnish all of the financial assistance that is necessary for the irrigation projects.

I believe the amount of net revenues that will be available will pay over \$33 million annually.

Associated with the peak financial responsibilities in the year 2020 this occurs before any repayment of the responsibilities will fall upon those associated with the Garrison diversion unit that are authorized today.

Senator BURDICK. And you, also, state in your testimony that you have initiated a comprehensive analysis of the repayment ability, and that if you find it necessary to make adjustments you will make adjustments.

Mr. HOLUM. Yes, we will.

Senator BURDICK. Senator Moss, the chair is yours.

Senator Moss. Thank you, Mr. Chairman.

I am sure that the chair is well filled now. I am very happy that you are going ahead with the hearing this morning knowing that I had other commitments to meet. I have turned over the chairmanship of my subcommittee to a man who knows most about the bill

and is as interested in compiling the record as anyone, so that he is the chairman for the day and will continue to be. I know he will conduct a very profitable hearing and will compile an excellent record.

Our subcommittee is interested in moving forward on this bill. We want to have the record fully made, so that we will have before us all of the information that we need.

I will not be able to stay but a short time. I am playing hookey from another committee right now and I must go back there, but I did want to come in and indicate the interest that I have in this project and that all of the members of our subcommittee have in this project.

I appreciate being called upon, but with those few words I would ask you to continue with the chairmanship.

Senator BURDICK. Thank you.

Senator JORDAN?

Senator JORDAN. Before I start I would like to register the usual protest that we always register here in this committee that when witnesses come from the Department with statements 10 minutes before the hearings begin, it puts us in an extremely disadvantageous position. We have recorded this protest many, many times. We have urged the Department to bring in their statements ahead of time so that we could have a chance to look them over. This is a highly technical matter that we have before us this morning. And we would appreciate the best cooperation that we can get in this regard.

Mr. HOLUM. Was my statement not made available to the members of the subcommittee?

Senator JORDAN. Not over 10 minutes ago, just before you started here. I do not know when it came to the committee rooms.

Senator BURDICK. It came to the committee this morning.

Senator JORDAN. And I want to show again that the protest is being made that the testimony is not available from the witnesses and to the staff at the time that we would like to interrogate.

I would like the opportunity, Mr. Chairman, perhaps, to recall the Assistant Secretary when we have had a chance to go into some of the technical aspects of this statement. For the moment I will refer to your statement on page 4 where you state that certain originally designated lands were unsuited for irrigation. Where were those lands, Mr. Secretary, and for what reason were they unsuited?

Mr. HOLUM. I will have Mr. Casey go to the map and point to the lands that were designated in the act of 1944 which were generally westward of the area that is now under consideration in S. 178.

After the passage of the Flood Control Act of 1944 the Bureau of Reclamation had an opportunity to begin looking more seriously at these lands and they found that the soils, principally, were not suitable for irrigation. It was found necessary and desirable to look for other lands and other soils that would be suitable.

Senator JORDAN. Was it a heavy type of soil that would not drain—what was it?

Mr. HOLUM. I think it was principally a matter of drainage—drainage problems—heavy subsoils.

Senator JORDAN. And the lands that are proposed to be irrigated in this project are of a character that can be irrigated successfully?

Mr. HOLUM. The soil testing has been very comprehensive. These soils are good, Reclamation assures me. Those who appear before the committee will be happy to assure you that these soils are suitable for irrigation. They can and will support an irrigated agricultural economy over an indefinite period of time.

Senator JORDAN. That is all I have now, but reserving the right to call the witness back to the stand.

Senator BURDICK. Senator Young?

Senator YOUNG. Mr. Chairman, I appreciate the unusual courtesy of permitting one who is not a member of the committee to ask questions. I want to take advantage of this by asking one question.

S. 178 does have the approval of the Bureau of the Budget now with the changes you have suggested?

Mr. HOLUM. Yes. I believe so, although I have not seen it, I know that there is a letter with the committee from the Bureau of the Budget. The Bureau of the Budget authorized our submission of the legislative report that the committee has.

Senator YOUNG. The letter has come up from the Director of the Bureau of the Budget. Thank you.

Senator BURDICK. Senator McGovern?

Senator MCGOVERN. Mr. Chairman, I simply want to say that it is always a pleasure to hear the statements of my fellow South Dakotan, the Assistant Secretary of the Interior, Mr. Holum. And his leadership in the development of the Missouri River Basin project extends back over a good many years and I know it is known not only in our part of the country but across the country.

I should like to express the feeling here today and the strong hope that it will not be very long before we have the Assistant Secretary back before this committee testifying with equal enthusiasm for the Oahe irrigation unit in South Dakota. This is another project that has been lagging in the Missouri Basin system.

I know the feelings of Secretary Holum on this subject. And I again say that I hope that we can move ahead at the proper time with as much dispatch on that program.

Mr. HOLUM. I would like to say to the Senator from South Dakota that I look forward with as keen anticipation as he does to the day that we will be considering the Oahe project.

Senator BURDICK. Thank you, Mr. Secretary.

Mr. HOLUM. Thank you, Mr. Chairman.

Senator BURDICK. Will Mr. Palmer, Mr. Johnson, and Mr. Mc-Broom come forward, please? We will be glad to hear from you now.

You can arrange your presentation in any manner that you wish.

STATEMENT OF WILLIAM I. PALMER, ASSISTANT COMMISSIONER; ACCOMPANIED BY BRUCE JOHNSON, REGIONAL DIRECTOR, BUREAU OF RECLAMATION, BILLINGS, MONT.; JAMES T. McBROOM, CHIEF, DIVISION OF TECHNICAL SERVICES, BUREAU OF SPORT FISHERIES AND WILDLIFE, WASHINGTON, D.C.; ROBERT N. RANDALL, AREA SUPERVISOR, BUREAU OF SPORT FISHERIES AND WILDLIFE, BISMARCK, N. DAK.; AND JIM T. CASEY, ENGINEER, PROJECT DEVELOPMENT DIVISION, BUREAU OF RECLAMATION, WASHINGTON, D.C.

Mr. PALMER. Thank you very much, Mr. Chairman and members of the committee. I am William I. Palmer, Assistant Commissioner of the Bureau of Reclamation, and on my right is Mr. Bruce Johnson, regional director of the Bureau of Reclamation of Billings, Mont.

Mr. McBROOM. I am James T. McBroom, Chief of the Division of Technical Services, Bureau of Sport Fisheries and Wildlife, Washington, D.C. And on my left is Mr. Robert N. Randall, area supervisor, Bureau of Sport Fisheries and Wildlife, of Bismarck, N. Dak.

Mr. PALMER. And I would like to introduce to the committee Mr. Jim T. Casey, one of our engineers in the Washington Division of Project Development; Mr. J. Karl Lee, Assistant Chief, Division of Project Development, Bureau of Reclamation, Washington, D.C.; Mr. C. T. Judah, Chief of the Project Development Division, region 6, Billings, Mont.; Mr. G. A. Freeman, project manager, Bureau of Reclamation of Bismarck, N. Dak. I think that you can understand by the way that we have turned out this morning that we strongly support the Garrison reauthorization. I should like to stress that, in our view, we consider the Garrison project to be authorized but we believe the advantages of modern authorization and to correct certain inequities contained in the original Flood Control Act of 1944 make it highly desirable, both from the standpoint of the people, the sponsors of the project, and the Government itself to come back for an amended authorization.

I am kind of in the position this morning of the minister who called on a family where the father had just died and sought to comfort the people. He picked up a little boy, put him on his knee, and said, "What were your father's last words?"

The little boy said, "He did not have any—mother was there."

Mr. Holum has talked well and eloquently for the Department, Governor Guy for the State of North Dakota, and the members of the delegation for North and South Dakota all have presented fine statements. I think they have outlined the project in an exceptionally fine manner and it makes my job easier, yet at the same time harder.

This is further complicated by the fact that when we appeared before this committee in June of 1961, Commissioner Dominy spoke for the Department. I mention that because I want to express his regret at being unable to be here today. We have a little hearing going on this morning that pertains to our lifeblood. Our appropriations hearing is on; therefore, he cannot be here.

Mr. Chairman and members of the subcommittee, the physical engineering plan which forms the basis of our current proposal is identical in concept and, except for minor refinement, is the same plan as that which we discussed with the subcommittee in June 1961. In our testi-

mony at that time concerning S. 230, 87th Congress, we explained the evolution of this plan from its initial conception to the present time. Perhaps a brief summary of that discussion would be useful from the standpoint of introducing our testimony on S. 178.

This Department's comprehensive plan for the Missouri River Basin project (S. Doc. 191, 78th Cong.) included a plan for diversion of water for large-scale irrigation development and for other purposes in eastern Montana, North Dakota, and northern South Dakota. Authorized as an initial unit of the project by the Flood Control Act of 1944, this development was designated as the Missouri-Souris unit.

I think it was Senator Jordan who inquired as to whether the project that is now before the committee differed from the original proposal. I would simply like to state, as Mr. Casey pointed out on the map, that the area goes to the west off of this map quite a little bit which was included in the original proposal, that is, in the authorizing proposal.

This was abandoned, primarily, because of the lack of drainability of the soil. Those soils, primarily, were glacial tills—they have heavy subsoils of relatively varying depths and would have been difficult to drain. So the project was reformulated and moved eastward, as you see from the map.

As detailed investigations progressed in North Dakota—where most of the land resource of the unit was located—it was learned that glacial soils in the westerly portion of the area were not suitable for irrigation, but that replacement areas were available in adjacent areas.

The new lands lie further to the east and at a lower elevation. These soils, generally of alluvial origin, are satisfactorily permeable to water, and are extensive enough to substitute for the glaciated lands without significantly reducing the size or scope of the unit.

A diversion and water supply system heading near Garrison Dam will serve the reformulated unit and, to distinguish from the original unit, has been redesignated the Garrison diversion unit, rather than as the Missouri. The concept of development, purposes, and scope of benefits remain essentially the same. Modifications in areas to be served, and in location and dimension of some of the major engineering features—along with certain legislative requirements which have become evident during the investigations—have made it desirable to modify the authorization before appropriations for construction are requested.

Our report on the Garrison diversion unit was adopted by the Secretary of the Interior on June 12, 1957. It proposes diversion of water from Garrison Reservoir on the Missouri River for irrigation of 1,007,000 acres, municipal and industrial use in 41 towns and cities, fish and wildlife uses, and recreational purposes. Byproduct benefits would also be realized from flood control, drainage of nonirrigable land, and stream pollution abatement. Principal supply works are the Snake Creek pumping plant which will lift water from Garrison Reservoir, the 73-mile McClusky Canal which will cross the drainage divide to the Sheyenne River, and Lonetree Reservoir from which most of the supply canals will radiate. Service would be made to 14 major service areas scattered diagonally some 300 miles across the Dakotas.

Subsequent analysis has led to the evaluation of an initial stage of 250,000 acres which would be physically and financially feasible and

economically justified. It would constitute a self-contained unit, and would accommodate enlargement in later years. The Secretary's report on this plan was transmitted to Congress on February 3, 1960, and has been printed as House Document 325, 86th Congress.

In our testimony on S. 230 in 1961, we presented an updating and revision of that plan. As advance planning has continued during the intervening years, we are now prepared to submit more definitive and defensible information on the unit that has been possible in the past. This information is summarized and presented in our supplemental report on Garrison diversion unit—initial stage, 250,000 acres—dated November 1962, and revised May 1963. This report is attached to and made a part of the Department's report on S. 178.

Secretary Holum presented the two significant respects in which our present analysis differs from the material submitted in support of S. 230, 87th Congress. The first and most conspicuous change is in the total estimated construction cost which has been increased from about \$183 million to about \$212 million. This has been a source of deep concern to the Bureau of Reclamation, as we are sure it will be to the subcommittee. Accordingly, we have prepared and will submit for the record of study by the subcommittee, a comprehensive analysis of the cause of these changes. This statement may be filed at this time or at the conclusion of these remarks, as appropriate.

May this statement be filed at this time or at the completion of my statement? I shall do as you desire, Mr. Chairman.

Senator BURDICK. Without objection, it will be made a part of the record at this point.

(The statement entitled "Explanation of Increase in Estimated Project Cost, Garrison Diversion Unit" follows:)

EXPLANATION OF INCREASE IN ESTIMATED PROJECT COST, GARRISON DIVERSION UNIT, FROM JANUARY 1961 TO NOVEMBER 1962

The report entitled "Supplemental Report on Garrison Diversion Unit (Limited to 250,000 Acres)" dated January 1961, was an interim report based on detailed studies only partially completed at that time. It became a part of legislative reports on S. 230 and companion measures, dated June 20 and 21, 1961, to the chairmen, Senate and House Interior and Insular Affairs Committees. It was also the basis for testimony offered to the Senate Subcommittee on Irrigation and Reclamation on June 21, 1961. At the time of the June 1961 Senate committee hearing, the construction cost, as cited in the January 1961 supplemental report, was \$182,746,000 based on January 1960 prices.

Since the January 1961 report was prepared, detailed studies have been completed on works to serve 113,000 acres of irrigable land and on a significant part of the developments proposed by other agencies for fish and wildlife conservation and recreation. The portions of the plan not yet studied in detail have been reviewed and the costs adjusted so that they are in agreement with the current plan, and are consistent with the results of detailed studies that have been made.

The current project cost estimate for the 250,000-acre initial stage of the Garrison diversion unit is \$212,383,000 based on January 1962 prices. This is the figure cited in the November 1962 "Supplemental Report on Garrison Diversion Unit." It is an increase of \$29,637,000 (16.2 percent over the \$182,746,000 cited as construction cost during the June 1961 hearings on S. 230.

Principal reasons for the \$29,637,000 increase are—

1. An increase of \$9,173,000 in the estimated cost for fish and wildlife and for recreation development. This increase was the result of more detailed studies by the Bureau of Sport Fisheries and Wildlife, and of new policy emphasizing recreation aspects of Federal water resource development.

2. An increase of \$2,011,000 due to price changes from January 1960 to January 1962. This does not include \$71,000 which is included under 1 above for changes in cost of fish and wildlife development.

3. An increase of \$7,947,000 attributable to the fact that shortcut methods and projections were used to a great extent for the cost estimate in the January 1961 report. When detailed studies on the 113,000 acres were completed, it became apparent that the "representative areas method" initially used to obtain cost estimates for much of the 250,000-acre development did not result in reliable estimates.

4. An increase of \$2,458,000 in the cost of Snake Creek pumping plant, and \$3,680,000 for canal lining. These are items that were changed when more detailed design information became available and better estimates could be made.

5. An increase of \$1,306,000 for operating roads on the canal banks along smaller canals. This is consistent with new criteria generally adopted in the Bureau, because the roads result in less expensive O. & M., and lower net long-term cost.

6. An increase of \$840,000 for the addition of an outlet structure from Lonetree Reservoir to the Sheyenne River. This item had been overlooked in the estimate for the January 1961 report, and previous studies.

The increases listed above total \$27,415,000. The balance of the increase, \$2,222,000, is made of increases in some items and decreases in others. A more detailed explanation for changes in project cost is attached.

EXPLANATION OF INCREASE IN ESTIMATED PROJECT COST, GARRISON DIVERSION UNIT, FROM JANUARY 1961 TO NOVEMBER 1962

The construction cost of Garrison diversion unit (initial stage, 250,000 acres) as given in the supplemental report of January 1961 and the supplemental report of November 1962 is shown in table 1. In the earlier report the breakdown was made to agree with that in the official cost estimate, PF-1. In the later report, specific costs of facilities for fish and wildlife and for recreation were identified as such, rather than being included in the costs for areas and sections. For purposes of comparison table 1 also shows the November 1962 estimate with the fish and wildlife and recreation costs distributed to affected areas and sections. The totals thus obtained agree with the data in the PF-1.

A summary of the changes by areas and sections is given in table 2, which also shows by the standard categories or analysis the reasons for such changes.

In table 3 the reasons are analyzed in somewhat different fashion, with particular reference to the specific factors involved in Garrison diversion unit.

TABLE 1.—Comparison of estimates of project cost in January 1961 report and November 1962 report

	January 1961 report	November 1962 report	Fish and wildlife, November 1962	Recreation, November 1962	November 1962 with fish and wildlife and recreation included in areas and sections
Principal supply works.....	\$44,095,000	\$46,947,000	\$3,052,000	\$210,000	\$50,209,000
Lincoln Valley area.....	(1)	3,661,000			3,661,000
Souris section.....	57,396,000	63,099,000	3,223,000		66,322,000
Central North Dakota section.....	41,197,000	41,089,000	6,173,000	1,427,000	48,684,000
LaMoure section.....	4,562,000	6,919,000	685,000		7,604,000
Oakes area, North Dakota.....	27,987,000	27,261,000	2,440,000	111,000	29,812,000
Jamestown Dam and Reservoir.....	3,806,000	3,812,000	(2)	(2)	3,812,000
Fish and wildlife development.....		15,573,000			
Recreational facilities.....		1,748,000			
Transitional development.....	3,703,000	2,274,000			2,274,000
Project cost.....	182,746,000	212,383,000	(15,573,000)	(1,748,000)	212,383,000

¹ Not in plan.

² Included in estimate.

TABLE 2.—Summary of changes in project cost from January 1961 report to November 1962 report, Garrison diversion unit (initial stage, 250,000 acres)

Item	Principal supply works	Lincoln Valley area	Souris section	Central North Dakota section	LaMoire section	Oakes section	Jamestown unit	Transitional development	Total
Present estimate.....	\$50,209,000	\$3,661,000	\$66,322,000	\$48,689,000	\$7,604,000	\$29,812,000	\$3,812,000	\$2,274,000	\$212,383,000
Previous estimate.....	44,095,000	(1)	57,396,000	41,197,000	4,562,000	27,987,000	3,806,000	3,703,000	182,746,000
Net change.....	+6,114,000	+3,661,000	+8,926,000	+7,492,000	+3,042,000	+1,825,000	+6,000	-1,429,000	+29,637,000
Percent of increase in 250,000-acre project costs.....	+20.6	+12.3	+30.1	+25.3	+10.3	+6.2	0	-4.8	100.0
Changes in cost by category:									
Price trends.....	-\$601,000		+\$1,327,000	+\$626,000	+\$103,000	+\$619,000		+\$8,000	+\$2,082,000
Project plan.....	+2,851,000	+\$3,661,000	+1,241,000	+2,992,000	+1,180,000	+1,710,000			+13,636,000
Inadequacies.....	+704,000		+5,537,000	+2,325,000	+1,058,000	+410,000	+6,000		+10,066,000
Design.....	+150,000		+2,888,000	+3,482,000	+812,000	-110,000			+7,222,000
Reanalysis.....	+3,010,000		-2,087,000	-1,933,000	-111,000	-804,000		-1,437,000	-3,362,000
Total.....	+6,114,000	+3,661,000	+8,926,000	+7,492,000	+3,042,000	+1,825,000	+6,000	-1,429,000	+29,637,000

1 Not in plan.

Table 3

	Increase	Percent
Total unit.....	\$29,637,000	16.2
Fish and wildlife development ¹	7,635,000	4.2
Additional development areas.....	(6,341,000)	
Change in unit prices ²	(71,000)	
Increased capacity in Snake Creek pumping plant and McClusky Canal.....	(1,223,000)	
Recreation development ³	1,558,000	0.8
Subtotal, fish and wildlife and recreation.....	9,173,000	5.0
Bureau of Reclamation responsibility.....	20,464,000	11.2
Change in unit prices ²	2,011,000	1.1
Balance due to other causes.....	18,453,000	10.1
Representative areas method ⁴	7,947,000	4.4
Detailed data and/or designs ⁵	6,112,000	3.3
Snake Creek pumping plant.....	(2,458,000)	
Other pumping plants.....	(1,247,000)	
McClusky Canal inlets.....	(683,000)	
Canal lining.....	(3,680,000)	
Canals, laterals, and structures.....	(737,000)	
Storage and diversion dams.....	(140,000)	
Change in sideslopes, drains.....	(-969,000)	
Operating equipment.....	(-1,823,000)	
Electrical lines.....	(-41,000)	
Detailed investigation of land ⁶	1,805,000	1.0
Lincoln Valley in place of New Rockford ⁷	1,641,000	0.9
Oversights ⁸	2,385,000	1.3
Operating roads on small ditches.....	(1,306,000)	
Outlet works—Lonetree.....	(840,000)	
Right-of-way to widen McClusky Canal.....	(239,000)	
Capitalized operation and maintenance ⁹	-1,437,000	-0.8

¹ The increase associated with specific fish and wildlife areas represents the best judgment of the Bureau of Sport Fisheries and Wildlife. The amount contained in the January 1961 report was determined by the Bureau of Reclamation by approximate methods principally involving prorating costs of the million-acre plan. Detailed studies by the BSWF, reported by Mr. McBroom in testimony on S. 230 in June 1961, indicated that a substantial portion of the ultimate development should be included in the initial stage. The current estimate reflects this scale of development.

Capacity provided in Snake Creek pumping plant and McClusky Canal of 1,750 cubic feet per second for the initial stage of 250,000 acres was found not to be sufficient to provide an adequate water supply for a fish and wildlife development of the size now contemplated. An increase in capacity of these two features of 200 cubic feet per second, to a total of 1,950 cubic feet per second, is provided and the cost is chargeable to fish and wildlife.

² Previous estimates from the supplemental report on Garrison diversion unit (limited to 250,000 acres) Jan. 1, 1960, were based on prices prevailing as of January 1960. The current estimate is based on January 1962 prices. There has been an overall weighted increase of slightly more than 1 percent in this 2-year interval.

³ Increases in recreation development have been recommended by the National Park Service for Lonetree Reservoir, Devils Lake and Taayer Reservoir of the Oakes area in accordance with current departmental and administration policy emphasizing the recreation aspects of Federal water resource development.

⁴ This increase could be said to be the price paid for shortcut methods during the basic feasibility studies. It represents the difference between the costs obtained by projections and those later determined to be appropriate after specific estimates were prepared. It represents the extent to which selected "sample areas" were not truly typical, and, in a sense, is a measure of the adequacy of the judgment exercised.

⁵ This increase is attributed to the difference in quality of study between investigations of feasibility grade and those of definite plan grade.

One major increase in this category is that of canal lining. Original construction techniques contemplated scarifying and compacting in place the silts in the natural canal prism. During the detailed studies laboratory tests of the material indicated that the silts and clays did not remain water tight under cyclical freezing and thawing. This determination made it necessary to design the canals on the basis of hauling in and compacting selected glacial till material for lining. Also influencing the cost, but to a lesser extent, is a general increase in lining provided, both because of better determination of natural permeabilities and an increased reliance throughout the Bureau of Reclamation on lining as a water-saving measure.

Other changes placed in this category include items that could not have been foreseen without detailed mapping, drilling, and other intensive studies associated with work of definite plan report caliber. Considerable savings were shown in some items as well as increased costs. Many of the entries are net changes involving both increases and decreases.

⁶ Detailed land classification and drainage studies showed that some land tentatively included in the unit was not arable. In a development where the extent of the land resource was a limiting factor, this might well have resulted in a reduction in project goals. In the Garrison diversion unit, replacement lands are available but the area is not so easily served. The result is a cost increase.

⁷ Early planning for the initial stage did not contemplate including the Lincoln Valley area, 6,615 acres, in this stage. The landowners, however, are interested in irrigation and have formed an irrigation district. This area is now included and a corresponding reduction has been made in the New Rockford area. The cost of serving the Lincoln Valley area is greater than that of serving the New Rockford area by the amount shown.

⁸ Operating roads are now provided on the canal banks of the smaller canals, consistent with new criteria generally adopted in the Bureau. Such roads greatly facilitate operation and maintenance.

The failure to include outlet works to the Sheyenne River, from the Lonetree Reservoir, was an oversight in earlier estimates.

In order to avoid extensive rehandling of material when the McClusky Canal is enlarged to full size, and to provide right-of-way for the disposition of spoil, the entire right-of-way for the full-size McClusky Canal is being acquired in the initial stage.

⁹ Earlier estimates were predicated on the basis that the Garrison Diversion Conservancy Subdistrict would require some assistance in financing operation and maintenance of the initial stage during the early years of operation. It is now apparent that the district will have adequate resources to assume the entire cost of reimbursable operation and maintenance from the beginning.

Mr. PALMER. The second major development that has occurred in the past 2 years, and which is reflected in current analysis, is in the field of standards of evaluation for water resource developments. On May 15, 1962, President Kennedy approved as a basis for administration recommendations to the Congress a statement entitled "Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources." This statement was subsequently printed as Senate Document No. 97, 87th Congress. Its precepts have been reflected throughout our supplemental report and have a bearing in three significant respects; as follows: (1) Interest rates for analysis, (2) evaluation of recreation benefits, and (3) allocation of joint costs to recreation.

Senate Document No. 97 provides among other things that the interest rate for use in analysis of water resource development projects shall—

Be based upon the average rate of interest payable by the Treasury on interest-bearing marketable securities of the United States outstanding at the end of the fiscal year preceding such computation which, upon original issue, had terms to maturity of 15 years or more. Where the average rate so calculated is not a multiple of one-eighth of 1 percent, the rate of interest shall be the multiple of one-eighth of 1 percent next lower than such average rate.

The rate which has been certified by the Secretary of the Treasury for fiscal year 1963 is $27\frac{3}{8}$ percent and this rate has been used in lieu of the rate of $2\frac{1}{2}$ percent previously utilized.

Current procedures provide that recreation benefits be based on an estimate of what the public would be willing to pay for use of the facilities. This has resulted in a reduction from the \$1.60 previously used which did not reflect the quality of recreational opportunity involved. This is a realistic change in approach, although it usually results in a reduction in the annual recreation benefits.

The third respect in which Senate Document No. 97 methodology affects the Garrison diversion unit analysis is through the allocation of joint costs to recreation. This precept has been extended in our supplemental report and results in substantial sums being recommended for designation as nonreimbursable in the general public interest.

The foregoing changes in cost and in details of analysis have not detracted from the Garrison diversion unit as a great multiple-purpose undertaking. It embraces every opportunity to create economic gain that is inherent in the plan. Although municipal and industrial water supply, fish and wildlife, and recreation are important purposes, irrigation is the overriding objective of the unit.

Governor Guy made a very good statement as to the importance of irrigation in connection with the overall economy of North Dakota. I would like to observe that we have compiled here for presentation, records from three stations in North Dakota, going back to 1905. It is significant the variation that has occurred in each of these stations. For example, in Williston the low is 13, with a high in excess of 20 inches.

Quite obviously, it is impossible to run a stable agricultural economy with such wide variation in annual precipitation. We believe that people farm the crops that they produce primarily because they can farm them. If you have a given amount of precipitation, if you have the tools and the equipment and the soil, this more or less tends to

force the farmer into one-crop economy. With irrigation the farmer is given flexibility and can shift his operations as the needs of the marketplace dictate.

We further believe, particularly, that in North and South Dakota where livestock is such an important factor in the total economy that the substantial feed base is a key issue, and with this irrigation he would not longer be required, at frequent intervals, to sell off the basic breeding herd as farmers and ranchers have had to do frequently in recent years.

Senator YOUNG. I would like to ask one question at this time. In 1961 we had a drought situation over much of North Dakota—it perhaps covered the western two-thirds of the State. Had that drought continued for another year, as it often has in the past, it would have meant a great liquidation of the cattle in two-thirds of North Dakota. And if we had had irrigation, such liquidation of cattle would not have been necessary.

Mr. PALMER. That is my point precisely, Senator. Had there been an irrigated feed base, it would not only have affected the farmers in their own operations on the irrigated lands, but there would have been a feed supply available within economic reach of the area where the drought occurred.

It would have a tremendous impact upon the economy of the Dakotas, particularly in North Dakota, where 95 percent of the irrigation potential is located. Probably no other State in the Union is so wholly dependent on agriculture. Wheat and livestock are its principal sources of revenue, and most farm products are shipped outside the State for processing. North Dakota is a great wheat-producing State. It specializes largely in Hard Spring wheat, a crop whose immediate future is uncertain, at best. It is essential that we consider the probable effect of the unit on this commodity.

Our experience on existing irrigation projects throughout the plains shows clearly that maximum net profit comes from integration of an irrigated feed base with livestock. This was stressed by Governor Guy.

The hard practical facts dictate that wheat acres be displaced by feed-crop acres on the farms of this and other irrigation units. Under present circumstances, the opportunity for such conversion as is afforded by the Garrison diversion unit should be welcome by all sectors of our Government and economy.

About 75 percent of the irrigated acreage should be used for forage crops and feed for livestock. Irrigation of the ultimate 1,007,000 acres will thus permit conversion of some 500,000 acres from production of surplus wheat to other crops.

We could recite at length the effect of drought on the basic economy of the northern plains. Eminent authorities, from Maj. John Wesley Powell in 1889 through President Roosevelt's Great Plains Committee in December 1936, and President Eisenhower's Special Assistant for Public Works Planning to President Kennedy's message on water resources, have called for water conservation and development as a means of economic growth and stabilization.

The people of North and South Dakota need no such reminders. They know these facts through cruel experience and have worked unsparingly to further this proposal in quest of assistance. In witness

of this effort, there are now six irrigation districts aggregating some 220,000 acres of irrigable land and a conservancy district covering nearly half the State—all organized under State law and already negotiating repayment contracts. The boards of directors of these districts advise me they agree with the repayment principles and the amounts shown in the unit report.

The irrigation districts are the organized portions which are clearly shown on the map and if you desire they can be pointed out.

The Garrison Diversion Conservancy District, created by North Dakota State Legislature in 1955, promises to provide novel assistance in developing, operating, and maintaining the unit. This district is an entity of 25 counties, with authority to levy a tax on all property. The district's assessed valuation is about \$800 million, 60 percent of the State's property valuation.

I might add this will increase as the land is converted to a higher value of agricultural crops and crop production.

The district covers an area of over 20 million acres, 45 percent of the State's area. Within its boundaries lie all the irrigable acres proposed for development, the cities and industries to be supplied with water, the potential wildlife areas, and the parks and recreation spots which this proposed new water supply can serve.

The revenue-raising power of the conservancy district is nearly \$400,000 a year. As the assessed valuation increases, so will the revenue from that, the ad valorem tax, and so forth. The district is empowered to function as principal and guarantor for financing repayment and operating costs by the various types of water-user districts or entities. It detracts in no way from the financing capacity of irrigation and other taxing districts. It does provide a source of additional revenue, drawing mainly from the indirect beneficiaries who always profit in varying degree from project development, but rarely pay any direct tax for the privilege.

Conservancy district revenue will be used for three principal purposes:

1. To assist irrigation districts during the development period by helping to meet operation and maintenance costs.
2. To assume financial responsibility for a small acreage of land that has been withheld from these new irrigation districts until such time as these or substitute lands are brought into the districts.
3. To help repay the allocated reimbursable costs of the unit works.

Both the principle underlying the conservancy district and the practical applications proposed for it are commendable forward steps in the reclamation program for the Dakotas.

Pioneering has also been done, and done successfully, to eliminate a potential conflict between our dwindling wildlife resources and the more intensive use of the land which irrigation requires.

Over a period of several years, cooperative planning with the Bureau of Sport Fisheries and Wildlife has resulted in a joint plan of advantage to both agricultural and wildlife interests. It provides specifically for developing waterfowl areas utilizing natural sloughs, lakes, and potholes to replace nesting and breeding grounds lost to project drainage. Because the proposed waterfowl areas generally lie along the canals and often among the irrigated areas, relatively little additional construction is needed to provide a water supply for these areas.

In most cases the water supply comes from project waste water which will be impounded behind small control structures. These new wildlife areas will be especially beneficial during drought periods, when, under natural conditions, most of the native ponds and sloughs are dry.

Mr. McBroom is here and will, no doubt, wish to talk further on this.

The most significant wildlife area, and the most important recreational site will be at Devils Lake. In 1867 it was a fresh water lake covering 142 square miles, with an extensively wooded shoreline and a commercial fishery. By 1940 the lake had receded 34 feet, become heavily saline, and shrunk to $4\frac{1}{2}$ square miles. Fish life had disappeared and recreational uses were abandoned. A part of the lake system has recently raised about 15 feet due to above-normal rainfall, but after 1956 this portion again started to recede. It was a simple matter to provide in the Garrison diversion unit for restoration of this lake chain so that Devils Lake will once again freshen, fit its wooded shoreline, and become a wildlife and recreational asset. To finance local costs and to provide necessary management, a tricounty park district has been established there.

The proposed initial stage of the Garrison diversion unit can also furnish improved supplies of municipal and industrial raw water to 15 communities in the unit area. This will provide a necessary support for the urban growth and industrial development that are expected to occur in the enlarged and stabilized economic base deriving from large scale irrigation development.

In consideration of the multiple-purpose nature of the unit the construction cost has been tentatively allocated among the purposes. The costs allocable to fish and wildlife, recreation, and flood control are recommended to be nonreimbursable. These amounts, which are \$26,578,000 (fish and wildlife), \$8,932,000 (recreation), and \$2,813,000 (flood control) respectively, when subtracted from the estimated construction cost leave a reimbursable remainder of \$174,060,000. Of this amount, \$165,535,000 is allocable to irrigation; while \$8,488,000 is allocable to municipal and industrial water supply; and \$37,000, representing a penstock for the future installation of power at Jamestown Dam and Reservoir, is allocable to power.

Reimbursable unit costs will be repaid as follows:

Municipal and industrial water repayment will be accomplished by sale of water to the various communities. Rates will be established to return the construction cost allocation plus interest during construction within a 50-year period with interest at 2.742 percent. Although the analysis in our current report used an interest rate of 2.742 percent, we would expect to use interest rates at the level established by current practice at the time municipal and industrial water supply contracts are negotiated.

Irrigation repayment will be, in part, from revenues paid by the conservancy district and the several irrigation districts. Our studies indicate that about \$26 million could be returned by means of a 50-year repayment period for irrigation. This amounts to 13 percent of the total cost allocated to irrigation and indicates that the Garrison diversion unit is similar to other units and divisions of the Missouri River Basin project from this standpoint. The remaining 87 percent of the irrigation allocation would be repaid by power revenues of the project.

There would be sufficient power revenues to return such irrigation assistance in accordance with existing law which sets no fixed time

limit for such repayment. At the present time, however, as pointed out by Secretary Holum, we are engaged in a detailed study of the power revenue question to ascertain the availability of revenues to meet repayment objectives of the Missouri River Basin project under criteria similar to those applying to the Upper Colorado River storage project and the Fryngpan-Arkansas project, both of which are more recent authorizations.

This work is not completed and we are, thus, unable to testify in this regard. We expect, however, that the analyses will be finished in the near future and specific recommendations can then be made. Economic analysis in accordance with Senate Document No. 97 and reflecting increases in total construction cost show that the unit has a benefit-cost ratio of 2.51 to 1. It is thus fully justified and merits your favorable consideration.

Water supplies for irrigation, fish and wildlife, and municipal and industrial use are ample and are of suitable quality. Estimated annual diversions of 871,000 acre-feet are about 5 percent of the 17,600,000 acre-feet average annual flow of the Missouri River at the point of diversion.

The Assistant Secretary has mentioned the desirability of the section of S. 178 which would provide relief from the terms of the act of August 30, 1890, the right-of-way act. I should like to emphasize the importance of this provision. Application of the 1890 act in the case of the Garrison diversion unit would be tantamount to confiscation in certain instances.

Under this act, land patents west of the 100th meridian issued subsequent to August 30, 1890, reserve to the United States rights-of-way for canals and ditches. However, many lands west of the 100th meridian were patented before the 1890 act. The water supply canals and larger laterals and drains of this unit are not the simple ditches contemplated by the framers of the act of 1890. In many cases they cross land which lies outside the area to be irrigated, so no compensating benefit can be adduced. It would not be equitable if some landowners are compensated while others are not, where so major an encroachment is to be made on their farms. From the standpoint of project operations, it will be desirable to obtain fee title to the construction site for all the water supply canals and some of the larger laterals and drains. The United States may then, without interference from servient landowners, construct necessary roads, transmission lines, fences, gravel and borrow pits just as readily as on other major structural sites, where the land is normally purchased in fee.

It is indeed hard to measure the full range of benefits that can be harvested from diversifying, stabilizing, and intensifying the agricultural economy of the northern Great Plains. Total population in the Dakotas has not changed significantly in over 30 years. Opportunity for youth is limited, and most of the young men and women migrate to other areas. Industry has failed to develop. The small towns have grown smaller, and some have disappeared entirely, as the average farm has doubled in size, and the number of farm families has declined. Agricultural processing plants are rare because of uncertain farm yields and lack of a dependable water supply. The two prairie States—North and South Dakota—dramatically demonstrate the effect of economic stranglehold imposed by limited and undependable rainfall. Locked in their fertile soils is the opportunity for a

balanced and vigorous economic growth. Water supply is a key to this opportunity: water for the land, for industry, and for the growing towns and cities that will evolve. The Missouri River is the only important source available for additional water in these States.

Our approval of plans for the Garrison diversion unit, therefore, springs from a deep conviction that this will be a wise use of natural resources. Its value as a national asset will grow over the years to an importance we can scarcely visualize today.

Accordingly, the Bureau of Reclamation endorses the proposed legislation to modify and reaffirm the authorization for Garrison diversion unit, and to provide certain additional needed authorities, now under consideration by this committee.

I might say, going back to the McClusky Canal, that some of the right-of-way needed to build this large canal might be as much as 1,400 feet in width. We do not believe it was the intent of the Congress when it passed the 1890 right-of-way act that we would be able to confiscate the entire holdings of an individual. So we have asked that this provision of this bill give us relief from that.

Also, as has previously been pointed out, the 100th meridian goes through the middle of the States of South and North Dakota and puts us in an untenable position of being able to pay some owners for their land and not being able to pay others for theirs. Not only that, but some of the land west of the 100th meridian was patented prior to 1890. We are able to pay these people for the right-of-way acquired, whereas we could not pay their neighbors who patented their land subsequently.

Senator BURDICK. You would make it that all of the land be paid for?

Mr. PALMER. Yes. From the standpoint of equity we think it should be, and from the standpoint of workability it should be, and for the right-of-way to build the service roads along the canal to permit the operation of the project in an efficient manner. That would not only be a matter of equity, but it is a matter of efficiency.

Senator BURDICK. Who is the next Department witness?

Mr. PALMER. Mr. Johnson, do you have anything else that you care to say or to add?

Mr. JOHNSON. I do not believe so, sir.

Senator BURDICK. Mr. McBroom.

Mr. MCBROOM. We appreciate the opportunity to appear before this committee in support of S. 178. We are grateful for the courtesy and consideration we have received here before. It is our continuing wish to merit the confidence of this committee.

Fish and wildlife conservation was given full consideration in the planning for the Garrison diversion unit. The necessity of not only protecting nationally significant wildlife resources but also of improving these resources and the opportunities for the public to utilize and enjoy them was recognized throughout. The plans for the 250,000-acre unit now being considered in connection with S. 178 includes provision for 36 major areas and at least 32 minor areas for fish and wildlife.

The Garrison diversion unit will have a major effect on migratory waterfowl, a national resource under jurisdiction of the Federal Government. The unit will affect 9 national wildlife refuges and nearly 36,000 acres of waterfowl habitat not in Federal ownership.

The Garrison diversion unit area occupies the heart of one of the two best waterfowl production areas in the Nation. The other is in Alaska. Single-purpose planning for irrigation could have resulted in disaster for waterfowl because of the loss of small natural water areas, on which production depends, in the preparation of the land for irrigation. Instead, the proposal before you will provide good opportunities for waterfowl production throughout the area, free of drought, because it was planned that way. Thousands of hunters and other wildlife enthusiasts hundreds of miles from North Dakota and South Dakota will be among the beneficiaries. This is true because waterfowl produced here will provide recreation for hunters and others throughout the central and Mississippi flyways, extending all the way to the Gulf of Mexico.

We can point out here that there would be little or no possibility of providing for waterfowl development in the absence of the water-supply facilities contemplated by the Garrison diversion unit primarily for irrigation. Here, then, is an example in the finest tradition of joint planning by conserving and developing one resource—waterfowl—while providing primarily for the development of another resource—irrigated agriculture.

Important fishing waters and habitat of wildlife other than waterfowl are located within the unit area. The Garrison diversion unit will result in a significant increase in fishing opportunities. New waters will be created which will permit the establishment of dependable fisheries where none exist today, and additional flows will improve other areas. Restoration of Devils Lake will bring about large fishery benefits and opportunities. Once restored with fresh water, the Devils Lake chain of lakes will eventually provide some of the best fishing in the North Central Plains States. One fisherman day is one fisherman using a body of water for 1 day. An average of about 340,000 fisherman-days annually out of a total of 500,000 estimated for the entire unit will occur at Devils Lake after restoration and improvement of water quality.

The fishing and hunting opportunities built into the plan for the Garrison diversion unit will represent substantial outdoor recreation assets. This committee, and on its recommendation the U.S. Senate—and now the House of Representatives as well—has recently recognized the importance of providing such opportunities for the American people. The need for consideration of outdoor recreation in the resources programs of the Nation so ably presented in the reports of the Outdoor Recreation Resources Review Commission, was given recognition by the President in his approval last year of Senate Document 97, 87th Congress, as mentioned by Secretary Holum. This document on evaluation of water resources projects recommends that full advantage should be taken of resources projects, recommends that full advantage should be taken of opportunities to provide for fish and wildlife and recreation in developing our water resources. The plan which would be authorized by S. 178 is in keeping with that principle.

The benefits accruing to the Garrison diversion unit through the planned fish and wildlife development of the 250,000 acres are presently estimated at \$1,123,000 annually. This represents the value assigned by this Bureau to the increased fishing and hunting opportunities which will be provided if the waterfowl production of the

area is maintained and the recommended fish and wildlife measures are incorporated in the project design.

Hunting opportunities are to be materially improved with the unit and inclusion of the fish and wildlife developments. The following increases in hunter days can be expected: 900 days of big-game hunting, 17,400 days of upland-game hunting, and 36,500 days of waterfowl hunting.

All of those figures will represent annual usage.

The plan of development for the Garrison diversion unit will furnish benefits in the form of irrigation, municipal and industrial water supply, conservation of fish and wildlife resources, and other development for outdoor recreation and flood control. All of these are essential elements in the project plan. All of them are benefits which the majority of the people of the area need. The fish and wildlife resources and increased fishing and hunting opportunities which will be developed will benefit not only the people of North and South Dakota, but also the people of the Nation who use these resources.

We are pleased to endorse S. 178 if amended as proposed in the Department's report. We commend it to the conservationists of the Nation. They and we can be confident that approval and adoption of S. 178 will be a good step forward for the conservation of fish and wildlife.

Senator BURDICK. Thank you, Mr. McBroom. Are there any other Department witnesses?

Mr. McBROOM. Mr. Ben Thompson of the National Park Service is present. I do not know whether he intends to make a statement or not.

Senator YOUNG. I want to commend you for your statement in support of the wildlife industry of the United States. It is very essential to maintain that policy. And you do have enthusiasts all over the Nation and in Congress and this support will be most helpful.

I would like to say, also, Mr. Chairman, that Senator Kuchel sends word that he could not be here this morning, but that he was for our project.

May I ask Mr. Palmer one question?

Senator BURDICK. Yes.

Senator YOUNG. Mr. Palmer, are there many recreation projects authorized in recent years where you have had a provision such as we have in the conservation district law which assures repayment to the Federal Government?

Mr. PALMER. Many of the biggest recent authorizations have—the most recent was the Colorado storage project—the act itself requires the organization of a conservancy district. I think that yours is by all odds the the largest conservancy district thus far organized.

Senator YOUNG. This is a more recent development, though?

Mr. PALMER. Yes.

Senator YOUNG. Thank you.

Mr. PALMER. But there are some conservancy districts supporting projects in many other sections of the country. In Colorado, the Colorado-Big Thompson, and in Utah, the Dixie project are examples which have conservancy districts. It is not a new principle, but it is an exceptionally good principle.

I commend the people from North Dakota for having this, and organizing themselves to help meet the project costs.

Senator YOUNG. I want to commend Mr. Palmer, Mr. Johnson, and the others from the Department, for the exhaustive study they have made of this project. I think they have approached it from a conservative angle so that it is not a wild scheme at all. It is one that will pay out and work out.

Mr. PALMER. Thank you.

Senator BURDICK. Mr. McBroom.

Mr. MCBROOM. May I make one further brief observation, Mr. Chairman?

Senator BURDICK. Yes.

Mr. MCBROOM. Governor Guy has very eloquently and forcefully and logically spoken of the contribution that North Dakota has made to the development of the Missouri River and the penalty that it has suffered as a result. I would like to observe that the fish and wildlife plan and the accompanying substantial allocation of costs which would be borne by the Federal Government as a whole, not solely by people of the region, might be considered a recompense to the State. This is in recognition of the national benefits to be provided by this project.

Senator BURDICK. As I said you have given us some fine testimony. You have pointed up the multipurpose aspects of this project.

There is the area below, which has been protected and supplies ducks.

Mr. MCBROOM. That is correct.

Senator BURDICK. And we have a national asset there, too.

Mr. MCBROOM. That is right. From my observation the protection of that national asset in the plan before you is worthy of national support.

Senator BURDICK. Before I begin questioning on some of the amendments that have been submitted by the Department, I would like to ask one of the panel experts here what his estimate is of the construction period, assuming that the 88th Congress authorizes and appropriates the money for this project.

Mr. JOHNSON. The principal works will be built during about a 12-year period, according to present schedules and hopes, and some of the drains will continue to be installed for an additional 20 or 25 years. The total construction period will, probably, approach 40 years for all of these works needed.

Senator BURDICK. In other words, the 250,000-acre project, probably, will come into being in 12 years, and the last of it later?

Mr. PALMER. That would be a pretty good estimate. The principal diversion work and the water delivery facilities would be built in about 12 years, with a continuing program running along after that.

I might say that the experience on the Columbia River Basin project has taught us that we are not doing the area a service if we are forced into the development too rapidly. It should be brought in as the marketing or, the packaging and processing services can be accelerated and built up to accommodate the new enterprises.

Senator BURDICK. Now in terms of the recommended changes in the bill I would like to ask a question or two. Page 2, A and B are more technical than anything else. You wish to strike section 2 entirely and add a new section. Is the purpose of the new section to provide nonmembers funds for joint facilities, recreation, and the like?

Mr. MCBROOM. The purpose of section 2, Mr. Chairman, is to provide for recreation and fish and wildlife development at the Garrison

diversion unit. The amendment of section 2 as recommended by the Department, Mr. Chairman, would provide authority for recreation but omits reference to fish and wildlife conservation and development authority for recreation because adequate authority for a fish and wildlife program is contained in the Fish and Wildlife Coordination Act.

Senator BURDICK. In other words, there is no necessity of referring to fish and wildlife then?

Mr. McBROOM. That is correct. We are advised by our Solicitor's office that the combination of authority in the Fish and Wildlife Coordination Act, and the material in the plan which is before the Congress for consideration, is adequate authorization for the fish and wildlife features of this plan.

Senator BURDICK. What other changes in recreation are there, that is, in recreational features?

Mr. McBROOM. The recreational features, as I say, would just give general authority for recreation development and allocation of joint costs and other costs to recreation as opposed to fish and wildlife. Do you want to answer further, Mr. Palmer?

Mr. PALMER. The Missouri River Basin Project Act itself contains no authority for the construction or the operation or the maintenance of recreational facilities on a nonreimbursable basis. Such minimum public use facilities as have been built on in the basin have to be paid for by water and power returns. We believe this is grossly inequitable. The amendment as proposed would clarify the authority of the Secretary to construct, operate, and maintain recreational facilities on a nonreimbursable basis. This is legislation long overdue. Now there is one exception to that. In Stutsman County a park district was organized and they were able to get a small amount of nonreimbursable money for the construction of specific recreational facilities, but, otherwise, there is no general provision in the Flood Control Act.

Senator YOUNG. This was a special provision in an appropriation bill. We do have recreational facilities in most of the Corps of Engineers plans, is that not correct?

Mr. PALMER. That is correct, sir; they are nonreimbursable, because the corps has received general authority.

Senator YOUNG. Under the appropriations that ran up into hundreds of thousands of dollars?

Mr. PALMER. That is correct.

Mr. McBROOM. The basic flood control acts contain an authority for recreational development, I believe.

Mr. CASEY. If I may comment, S. 178 provides the authority for recreation that the amendment would also provide. I believe the technical improvement in the language of section 2 will be found in the method of treatment of operation and administration of recreational facilities. S. 178, as introduced, provides that these facilities may be built under certain circumstances if the State of North Dakota, political subdivisions thereof, or other public entity agree to operate and maintain such facilities for a period of at least 20 years. Thereafter they could be conveyed under certain circumstances to these local entities.

The language that the Department report has recommended takes out this 20-year provision. We do not, under the recommended lan-

guage, require an agreement for operation and maintenance as a condition of construction. The language which is being recommended would authorize the Secretary to enter into such agreements for operation and administration, but it does not make it mandatory upon him to do so.

It encourages him to do that, but in the absence of being able to reach a satisfactory agreement he could, under the recommended language, proceed to build the works and operate them with Federal appropriations. That is, in summary, the distinction between the two versions of section 2.

Senator BURDICK. I, as the author, have no particular pride of authorship in this bill.

Mr. PALMER. I might say that the committee is well aware of the difficulties we have had in certain other areas where projects offering recreational opportunity have been constructed and we have been unable to find a public body willing and able to take them over. Sometimes the public body is not readily at hand, and sometimes we end up having to operate and maintain the constructed facilities ourselves for a period of time until the true value of the recreational resource can be established and facilities provided. Without the public use facilities there, recreational use is made. Any time you impound water, any time you store water, any time you make the opportunity available, it will be used. Sometimes with adverse results in terms of the basic project purposes.

Prudence dictates that we provide for this use at the outset, rather than to have to come back in later and ask for additional authority.

Senator BURDICK. I notice that there is an amendment that is more technical, however, that is the removal of the veto power in the State of North Dakota.

Mr. McBROOM. I think that we might place into the record at this point, in response, if you think it proper, the part of the departmental report on that point.

Senator BURDICK. Yes.

Mr. McBROOM. The report, a letter of June 5, 1963, to Senator Henry M. Jackson, chairman of the Interior and Insular Affairs Committee of the Senate, from Secretary of the Interior Stewart L. Udall, says in part:

This suggested amendment eliminates an unnecessary reference to the Fish and Wildlife Coordination Act which is applicable to the project without further legislation. Also eliminated is the veto over land acquisition which the bill would give to the Garrison Diversion Conservancy District and the Oahe Conservancy Subdistrict. The Department believes that the concept of multiple-purpose project development would be defeated if local organizations were possessed of the power effectively to defeat the plan for fish and wildlife conservation and development which is an integral part of the overall unit plan. Moreover, allocation of costs and benefits and calculations of economic feasibility are predicated upon realization of all purposes of the unit to completion of planned development; removing from the Secretary of the Interior the power to place the entire unit plan into effect would adversely affect the economic justification of the unit.

That is the end of the quote from the departmental report.

I have already discussed, Mr. Chairman, the contribution which the United States will make to the financing of this unit through the allocation of a substantial portion of the cost to fish and wildlife on a nonreimbursable basis. This is what I believe is meant in the Secretary's letter, where he says that the allocation of costs and the benefits

and the calculation of economic feasibility would be upset if there were given to somebody other than the Secretary the authority to carry through the plan as authorized.

Senator BURDICK. The theory then is that this project is a multi-purpose concept?

Mr. McBROOM. Yes.

Senator BURDICK. And that Fish and Wildlife is in for part of it and to remove that portion of it would upset the balance of the project; is that it?

Mr. McBROOM. Exactly—very well stated. The project could be torn apart; that is, the package could be torn apart—and perhaps destroyed—in my judgment, if there is a successful effort to take out and modify one part of the total package.

Senator BURDICK. I believe that the Bureau of the Budget has similar views on this, if I am not mistaken. There is a copy of the Bureau of the Budget letter here.

Mr. McBROOM. I do not have it here.

Mr. PALMER. The Bureau of the Budget agreed with the Department.

Senator BURDICK. I would like to have you make a comment on that, if you would. The last paragraph of the Bureau of the Budget letter states:

The Department of the Interior in its report on S. 178 recommends against provisions in the bill that would give local interests a veto power over Federal land acquisitions for fish and wildlife. The Bureau of the Budget concurs in the views of the Department in this regard.

Mr. McBROOM. Yes, sir. No doubt they followed the reasoning the Department of the Interior did in arriving at that conclusion.

Senator BURDICK. That is all, thank you.

Mr. PALMER. Thank you.

Mr. McBROOM. Thank you.

Senator BURDICK. Our next witness is Mr. Roy A. Holand, chairman of the Garrison Diversion Conservancy District.

We are glad to have you here.

STATEMENT OF ROY A. HOLAND, CHAIRMAN, THE GARRISON DIVERSION CONSERVANCY DISTRICT, LaMOURE, N. DAK.

Mr. HOLAND. Mr. Chairman and members, my name is Roy A. Holand. I live in LaMoure, N. Dak., and am chairman of the Garrison Diversion Conservancy District. I have farmlands in the James River Irrigation District that can be served under the Garrison diversion unit. For several terms I was a member of the State legislature.

In the interests of conserving time I would like to have permission to file my statement, but I would like to call particular attention of the committee to one or two items.

Senator BURDICK. Without objection, your entire statement will be made a part of the record.

Mr. HOLAND. The first item that I would like to call to your attention is the fact of the organizing of the Garrison Diversion Conservancy District which has previously been referred to in the testimony of prior witnesses. We feel that this is a unique and very effective method of handling the matter of local responsibility. Included in the authority of the district is the right to levy, which levy is

assessed not only on irrigation users themselves but on indirect beneficiaries as well. We feel this is very important.

I would, also, like to call the attention of the committee to the fact which has, likewise, been previously referred to, that this project has received general and statewide support. In fact, we find ourselves in the rather pleasant and unique position here today of not having any opposition from any group whatever in the State of North Dakota. Rather, we find general and unanimous support for this project.

In that connection I would like to ask that statements from a number of organizations be inserted in the record following this presentation, and that the listing of names of other organizations which have endorsed the development of the Garrison diversion unit, also, appear in the record.

Senator BURDICK. Do you have the names of the organizations here?

Mr. HOLAND. Yes, I do.

Senator BURDICK. Would you read them, please?

Mr. HOLAND. Mr. Chairman, the list of names of organizations is very formidable.

Senator BURDICK. Are they all in the files there?

Mr. HOLAND. They are all in the file here. It comprises several pages. We would like to have it inserted in the record.

Senator BURDICK. Without objection, that will be received.

Mr. HOLAND. In conclusion, we would like to concur with what has previously been said by others who have previously testified here. We are very grateful for the strong support, not only of the State of North Dakota, but of our congressional delegations and that of the various groups and organizations and officials who represent North Dakota and last, and, certainly, most important of all the farmers and the beneficiaries of what we feel would be a very important project to the future of North Dakota.

Thank you.

Senator BURDICK. Thank you, Mr. Holand.

(The prepared statement of Roy A. Holand follows:)

STATEMENT OF ROY A. HOLAND, CHAIRMAN, GARRISON DIVERSION CONSERVANCY DISTRICT

My name is Roy A. Holand. I live in LaMoure, N. Dak., and am chairman of the Garrison Diversion Conservancy District. I have farmlands in the James River Irrigation District that can be served under the Garrison diversion unit. For several terms I was a member of the State legislature.

The Garrison Diversion Conservancy District was established by the legislature in 1955 to provide the people within the area of the Garrison diversion unit a responsible governmental agency that can function in the development and administration of this project. It contains approximately 45 percent of the State's area, about 60 percent of the population, and represents over 60 percent of the assessed valuation of all the property in the State.

The district is governed by a board composed of an elected director from each of the 25 counties, whose term of office is 4 years. Each director is sensitive to the needs and demands of the people of his county and the composite group strongly believes in and supports the project.

We believe that the Garrison Diversion Conservancy District provides a rather unique but sound approach toward providing maximum support for and the obtaining of the greatest amount of benefits from multiple-purpose water resources development—such as the Garrison diversion unit.

The district's power to impose a 1 mill levy against all taxable property within its boundaries, which would now yield about \$400,000 annually, provides it with the means to require both rural and urban inhabitants thereof to contribute to

the project cost. In effect this gives recognition to the so-called secondary benefits accruing from the proposed irrigation development because approximately 90 percent of the district's revenue will come from other than direct irrigation beneficiaries.

Equally important is the district's authority to represent all water users and project beneficiaries who are dependent on a single source of water to supply the project needs. The district can represent them not only in contract and other negotiations with the Federal Government but also in the local management and operation of the project.

The indicated impact of irrigation development on the trade and business economy of the State under the Garrison diversion unit is emphasized in a 1961 study of anticipated indirect benefits therefrom made by the Bureau of Business and Economic Research, University of North Dakota. The study report concludes that a minimum projection of such local benefits from the 250,000-acre initial development is of the magnitude of \$26,355,000 annually. This figure compared to the estimated increase in gross farm income resulting from irrigation of approximately \$35 million annually gives an idea of the importance of indirect benefits to the State from the proposed project.

Diversion of Missouri River water into central and eastern North Dakota for beneficial purposes has been advocated by many citizens for the past 75 years. Farmers directly concerned are anxious to proceed with the proposed project. They realize the opportunity to more intensively and efficiently use their lands for better stabilizing their farming operations. Equally strong support exists among other segments of the State's inhabitants. They know that their prosperity depends upon the prosperity of the farmers and recognize that irrigation development will provide the lift needed to bolster the economy of all.

As an indication of the statewide support of the Garrison diversion unit, I ask that statements from a number of organizations be inserted in the record following this presentation, and that the listing of names of other organizations which have endorsed the development of the Garrison diversion unit also appear.

The Garrison Diversion Conservancy District has undertaken a number of activities and functions since 1955. During that time we have utilized the \$15,000 that have been authorized to levy for district operations in planning and promotional work relating to the project in addition to financing our normal operations. We have employed a highly qualified consultant on three occasions to (1) review the operation and maintenance estimates for the Garrison diversion unit and (2) review proposed contracts for the project that have since been approved as to form by the conservancy district board of directors and the directors of the irrigation districts that have been organized in the Garrison diversion unit area. In addition the district has actively and financially participated in an information program designed to bring about an understanding of irrigation in our State where this type of farming is relatively new and to acquaint our farmers with the Garrison diversion limit.

Important too has been our active participation with various Federal agencies in the planning phase for the project. We feel that the opportunity afforded the local people through our district to have a part in this all-important phase in the development of a water resources project is highly desirable and it is hoped will prove effective. An example is the activities of our planning committee in reviewing the areas proposed for fish and wildlife development under the Garrison diversion unit. Concern was expressed by several groups in the State about the location and size of a number of these areas. After reviewing the plans for the various areas as well as viewing the specific areas in the field, a number of changes were recommended by the committee and were accepted by the Fish and Wildlife Service. We are confident that a continuation of this cooperative approach will bring about the full development of the fish and wildlife aspects of the Garrison diversion unit. We request your approval of the provision included in section 2 of S. 178 that provides for review and approval of the acquisition of lands for fish and wildlife purposes by the Garrison Diversion Conservancy District or in the case of South Dakota lands, by the Oahe conservancy subdistrict.

The Garrison Diversion Conservancy District supports the position expressed by Governor Guy for the inclusion of a provision in S. 178 for the purchase of all land required for rights-of-way irrespective of the act of 1890 as a most logical and fair solution to a difficult problem.

We sincerely appreciate the opportunity to appear before your committee in support of the early development of the Garrison diversion unit. We respectfully urge your approval of S. 178 so that the construction of this all important project can be initiated. Thank you.

(The statements previously referred to follow:)

STATEMENT OF E. W. SMITH, PRESIDENT, NORTH DAKOTA FARMERS UNION

The North Dakota Farmers Union is in full support of efforts to bring the Garrison diversion unit to completion. This is a matter of record in the 1963 program of policy and action, adopted by delegates to the 36th annual convention of the North Dakota Farmers Union. The wording in the adopted program is as follows: "We urge Congress to approve the Garrison diversion unit and to appropriate funds to initiate and complete construction. We favor strict enforcement of the 160-acre limitation in this and all other reclamation projects." Any bill, whether for authorization of Garrison diversion or for the appropriation of funds for one or more stages of construction, will be supported by the North Dakota Farmers Union so long as it is line with this policy statement.

The eventual completion of the Garrison diversion unit, together with the installation of irrigation systems on many acres of North Dakota farmland, carries a tremendous potential for improvement in the farm sector of the economy. In the past, North Dakota farmers have been overly dependent on cash income from small grains and feeder calves. Well over a third of the State's farm income normally has come from the single crop, wheat. Most of the cash grain crops, suitable for growing in dry farming areas, are presently suffering from an excess supply situation. Irrigation would open the way for shifting by many farmers from the production of cash grain crops to a variety of vegetable crops that are not now in excess supply and are less likely to suffer from an adverse supply situation in the future due to the fact that the market growth for vegetables more nearly parallels the population growth than does the market growth for cash grains and grain products.

In addition to being handicapped by a restricted number of products which North Dakota farmers can raise under dry land situations, they are frequently subjected to severe and sometimes continued droughts that have devastating effects, both on the production of cash grains and on the production of feeder calves. The devastating effects of continued drought can be completely eliminated for the farmer who uses irrigation. It can also be greatly minimized for the rancher in an area outside of the irrigation projects since a fair supply of feed, particularly roughage, is likely to be available in the irrigated areas. Thus, ranchers will be less likely to find themselves in the position which they were in a few years ago when drought forced them to pay more for freight than the cost for hay which they were obliged to purchase in order to feed their breeding herds through the winter.

Sugarbeet growing now exists on the eastern fringe of North Dakota, and a very small irrigated area along the Yellowstone River. In these areas, sugarbeets are a proven cash crop. Since the market for sugar is growing and sugarbeet growers in the United States seem to be getting increased allocations, the potential for this crop, as a substitute for cash grains in the potential irrigation areas, seems worthy of consideration.

To whatever extent irrigation strengthens the farm economy of North Dakota, the nonfarm economy will benefit from increased farm spending. Additionally, when the construction starts, there will be some increase in job opportunities for construction workers. This increase will be substantially larger than the number of jobs directly connected with work on the main unit. In most of the areas where water can be brought to the farms for irrigation, a considerable amount of land leveling will need to be done. There will also be feeder canals and drainage ditches on individual farms before they can actually begin producing crops under irrigation. All of this activity will produce new jobs for nonfarm people in North Dakota.

With proper economic planning by North Dakota people, the job opportunities can continue to grow after construction is completed. If farmers in the potential irrigation area do shift to vegetable crops, sugarbeets or products of that nature, the more perishable crops will require some processing in the communities where they are grown.

Thus the shift in the agricultural economy brought about by irrigation could produce a variety of new jobs in the fields of processing, storing, and transportation of new commodities.

Since many of these commodities produce byproducts that are excellent cattle feed, there would be a tendency for increased feeding of North Dakota grown range calves within the State and the possibility for creating kill-chill plants to supply markets with chilled beef carcasses would be increased.

Agencies both at the State and Federal level, which are charged with the management of sport fishing and game are showing a considerable interest in the Garrison diversion project. If hunting and fishing can be developed as it is presently presumed, this, together with the potential for increasing resorts and recreation areas may greatly increase the number of service jobs connected with tourism.

Perhaps the greatest benefit that can accrue to North Dakota through completion of the Garrison diversion unit is sociological. It is the sum of those benefits touched on above. If most of all of the potential benefits mentioned thus far come to fruition, both the farm and nonfarm sectors of the North Dakota economy may well be able to absorb considerably more labor. This could have an important social consequence to the State. During the last 25 years, the heavy shift of population away from rural town and farm communities has made it extremely difficult for them to maintain such social institutions as their schools and churches. Even adequate road systems have been difficult to build and maintain because there are simply too few people for too much geographic area. The smaller acreage required on irrigated farms and the establishment of plants to process agricultural commodities raised under irrigation, together with the increased service jobs, could go a long way toward alleviating many of the social problems that are presently plaguing the people of North Dakota.

In the view of North Dakota Farmers Union members, the potential for economic and social benefits inherent in the Garrison diversion unit far outweigh the estimated costs. It is, therefore, our hope that this committee will find it possible to report favorably on S. 178 and that the Senators on this committee will take whatever steps appear to them to be prudent and practical in expediting the authorization and eventual completion of this project.

STATEMENT OF CLARK ROBINSON, PRESIDENT, NORTH DAKOTA FARM BUREAU

My name is Clark Robinson from Coleharbor, N. Dak. I am president of the North Dakota Farm Bureau.

The North Dakota Farm Bureau's primary objective is the development of a sound and prosperous agriculture in North Dakota. We recognize that the major deterrents to achieving this objective are periodic droughts that cause severe fluctuations in our agricultural production and the lack of opportunity to our farmers to diversify their operations because of the limitations imposed on them by climate and weather under the present dryland type of farming practiced. Development of irrigation in a large area of the State integrated with neighboring dry land at a rate of about 4 acres of dry land to 1 acre of irrigation as is proposed in the Garrison diversion unit plan can materially improve and stabilize our agricultural economy.

Agriculture is North Dakota's basic industry. The soundness of this industry depends to a large extent on its stability as well as its flexibility to produce the food and fiber products in demand. We believe that irrigation development as is proposed under the Garrison diversion unit will provide farmers in a large area of North Dakota the capability to develop this diversified and balanced agriculture. By so doing it will permit our farmers to continue to play the important role they have and must have in the future growth and strength of our Nation.

The North Dakota Farm Bureau has often expressed its support for the Garrison diversion unit. We believe that this project will provide our State the means whereby its citizens can use their share of water from the Missouri River that was promised when the Missouri River Basin project was authorized in 1944. It will also compensate, in part, for the 550,000 acres of land that was acquired for reservoirs on the main stem of the Missouri River in North Dakota. We are confident that the other direct benefits resulting from the project as well as the associated indirect benefits will be significant factor in the future growth and development of North Dakota.

We sincerely urge your favorable consideration of S. 178 which will modify the authorization of the Garrison diversion unit and permit the early initiation of construction of the project facilities.

A resolution endorsing the Garrison diversion unit was adopted at the last convention of the North Dakota Farm Bureau. I wish to have this resolution included as a part of my statement. Thank you for the opportunity to express these views.

"RESOLUTION—MISSOURI RIVER DIVERSION"

"Because of the beneficial effects that the entire Missouri Basin development will have on agriculture and industry in North Dakota, we urge the completion of the Missouri River development plan to accomplish the restoration of Devil's Lake, and to benefit those farms on which irrigation is feasible and to assure cities of adequate water supply for future expansion."

STATEMENT OF KARNES JOHNSON, PRESIDENT, NORTH DAKOTA STOCKMEN'S ASSOCIATION

The North Dakota Stockmen's Association has long recognized the stabilizing effect which irrigation would have upon available livestock feed supplies in North Dakota.

North Dakota Stockmen's Association endorsement of the Garrison diversion unit is set forth in a resolution adopted several years ago and which has been reaffirmed at every subsequent annual convention since that time. A copy of that resolution is appended and designated as No. 1.

We urge this committee to approve legislation which would enable early project authorization so that construction of project facilities can get underway as soon as possible.

This association is particularly pleased to note section 2 of S. 178 provides that no land for the conservation and development of the fish and wildlife resources of the area shall be acquired unless acquisition thereof has been approved by the Garrison Diversion Conservancy District. Our association's concern here is set forth in the appended resolution designated as No. 2. Section 2 of S. 178 satisfies our resolution.

"RESOLUTION NO. 1—GARRISON DIVERSION"

"Whereas North Dakota has given over 500,000 acres of land to Federal reservoir projects; and

"Whereas the Garrison Dam was a part of the Flood Control Act of 1944, of which Garrison diversion was then a part; and

"Whereas the stockmen of North Dakota recognize the value of assured feed supplies which irrigation could bring to aid an expanding livestock industry: Now, therefore, be it

"Resolved, That the North Dakota Stockmen's Association favors early approval of the Garrison diversion project."

"RESOLUTION NO. 2—WATERFOWL REFUGES"

"Whereas the State of North Dakota has given many thousands of acres of land to the Garrison Dam Reservoir for which no additional monetary benefits have yet accrued; and

"Whereas the U.S. Fish and Wildlife Service openly admits the intention to acquire approximately 160,000 additional acres in North Dakota through the Garrison diversion program as well as the thousands of acres gained by private negotiations with the power of condemnation: Now, therefore, be it

"Resolved, That we, the North Dakota Stockmen's Association, strongly oppose the further acquisition of productive agricultural land for refuge purposes except by the approval of the conservancy board and/or the Governor or his authorized agent."

STATEMENT OF ARLON G. HAZEN, DEAN OF AGRICULTURE AND DIRECTOR, AGRICULTURAL EXPERIMENT STATION

My name is Arlon G. Hazen. I live in Fargo, N. Dak., and am dean of agriculture at the North Dakota State University and director of the North Dakota Agricultural Experiment Station.

In June 1961, it was my privilege to appear before the Subcommittee on Interior and Insular Affairs, U.S. Senate, in support of S. 230—a bill to make certain provisions in connection with the construction of the Garrison diversion unit, Missouri River Basin project, by the Secretary of the Interior. At that time my statement discussed the proud, progressive, alert and quite determined people to be found in North Dakota, and the future of agriculture in North Dakota

as it might possibly be affected by the proposed Garrison diversion unit once it becomes operational. Because the statements made 2 years ago are still very pertinent today, I shall use freely of them in again offering this supporting statement for the proposed construction of the Garrison diversion unit.

Our North Dakota people have experienced and know only too well both good and bad times. One may marvel at how adequately these people, numbering less than one-half million in total population, are able to provide themselves with modern homes, cities, farms, highways, schools and churches. There is a noticeable absence of depressed areas, and a strong display of pride and spirit. The entire State is oriented to agriculture as a basic support for its economy. And, one of the principal crops of the State is and has been Hard Red Spring and Durum wheat. This particular commodity is and has been for several years a quality product, sought by the millers and by the macaroni manufacturers, but nevertheless in many years is in excess production. The limitation of growing season, compared with other areas, also limit the alternatives for agricultural production. Most forwarding-looking people agree we cannot expect to maintain or exceed the past records of wheat production, but rather must turn to alternatives. One of the most promising alternatives is the production of feed crops and livestock. This is already being established and utilized to a greater extent than ever before.

It is my opinion that the Garrison diversion unit could substantially contribute toward the soundness of the agricultural economy of North Dakota. It is not expected that irrigation would be utilized to any great extent for production of wheat, but rather for the feed grains, forages, and other kinds of crops which would support a continuing livestock program, one not entirely dependent upon the vagaries of marginal natural precipitation.

Small grain cash crops are essentially a 1-year proposition. The crop is seeded in the spring and harvested in the fall. If a crop failure occurs, the operator may try again the next year. With livestock, however, and particularly with beef cattle, a breeding herd cannot be maintained nor can market livestock be produced with out a feed source that can be relied upon every year. With a single year's feed supply lost, the livestock man is in grave difficulty. One cannot postpone hunger. There is no reason why one of the main effects of the Garrison diversion development could not be to create a feed base upon which livestock producers could depend for an adequate and continuous supply of feed, not only regularly for market livestock but also for maintaining breeding herds in case of extreme drought.

Toward this goal, the State of North Dakota has, through actions by the 1957, 1959 and 1961 legislatures, made available appropriations totaling \$262,392 for the establishment and maintenance of an irrigation branch station located near Carrington, N. Dak. The 1963 legislature has also provided an addition \$95,807 for the continued development and operation of this research center for the coming 1963-65 biennium. These actions have made possible the acquisition of 640 acres of land, much of which is irrigable, where research is currently underway with comparisons of dryland and irrigation cropping. With the next few years it is planned to incorporate livestock into this research program. This station is well attended by visitors and has received much praise for its development, program, and purpose. It is fortunate this effort is being made in the interest of a sound irrigation program in the State of North Dakota.

There can be no doubt we should develop our water and land resources to the best of our ability, and to the objective of making our agricultural areas as economically sound as possible. I believe the Garrison diversion unit will help to accomplish this in North Dakota.

STATEMENT OF OSCAR N. BERG, EXECUTIVE VICE PRESIDENT, NORTH DAKOTA WATER USERS ASSOCIATION

Mr. Chairman and members of the committee, my name is Oscar N. Berg and I live in Minot, N. Dak. I represent the North Dakota Water Users Association, a statewide, voluntary, nonprofit organization "dedicated to actively foster, promote, and support the orderly execution of any program or project for the development, management, and beneficial use of land and water resources in North Dakota."

This association is the only nontaxing agency devoting all its time and energies exclusively toward obtaining maximum development of the State's soil and water resources.

The remarkable and continuing interest and enthusiasm of North Dakotans in our water resources development is manifested in many ways.

The phenomenal growth in the membership of the organization I represent to 3,000 or more members representing agriculture, business, industry, and the professions is a dramatic demonstration of such interest. This, I feel, is an achievement due to the accomplishments of the association since its formation about 3½ years ago.

Farmer interest in the irrigation of crops to supplement rainfall shortage during the growing season is evidenced by the formation of 8 irrigation districts having an aggregate of 270,000 irrigable acres in their areas.

Such interest is further shown by the progress made in the negotiations with the Bureau of Reclamation regarding the form and substance of the repayment contracts, now well underway.

Perhaps even more conclusive evidence of both rural and urban interest in the proposed Garrison diversion unit is the acceptance by property owners in the 25-county project area of the ad valorem taxing power of the Garrison Diversion Conservancy District, and of the taxes already levied thereunder upon all real and personal property within the district. Such taxing authority directly affects those who later must make payments toward the cost of the project works and related elements thereof. Their indicated assumption of such obligation is indeed very encouraging.

North Dakota reluctantly agreed to the acquisition by the Federal Government of approximately 550,000 acres of valuable agricultural land for the construction of the Garrison and Oahe Reservoirs.

It was generally implied and understood by our people when the Pick-Sloan plan for the development of the Missouri River Basin was authorized that North Dakota would receive substantial benefits through irrigation from the Garrison diversion project. This meant that we could look for many more farm units, additional business enterprises, increased job opportunities, and a substantial increase in the tax base and of our gross income.

All this would in turn result in our ability to provide more and better educational opportunities and facilities for our youth as well as to improve our governmental operations on local, county, and State levels.

Now more than 18 years after the authorization of the Missouri River Basin project, North Dakota is still battling for the realization of the irrigation development promised us.

Mr. Chairman and members of the committee, I most respectfully urge your favorable consideration and approval of S. 178 now before you.

I deeply appreciate the opportunity to appear before you and make this presentation.

STATEMENT OF HELGE E. NYGREN, PRESIDENT, NORTH DAKOTA ASSOCIATION OF RURAL ELECTRIC COOPERATIVES

My name is Helge E. Nygren. I am president of the North Dakota Association of Rural Electric Cooperatives, an organization of 58,600 rural electric patron members. I am also president of the board of directors of the North Dakota Rural Electric magazine.

The rural electric cooperatives of North Dakota are well aware of the value of water and believe that this resource must be used first for human, animal, and plant life and, secondarily, for power generation and other appropriate needs.

We have been here before. The statements we made before this honorable committee on June 21, 1961, seem appropriate today. The facts we gave you then will, on your investigation, provide an urgent emphasis all their own. Two years have slipped by. Future generations will hold us to an accounting. We submit that Proverbs 29, verse 18, may provide the guidelines for this committee and we quote: "Where there is no vision, the people perish."

SUBSTITUTES

We have substitutes for almost everything except water. We have other means of transportation, we have other means of generating electric, but we do not have other means of supplying human, animal, or plant water needs.

Therefore, we consider that the prime importance of the Garrison Dam is to supply these needs of living things.

Our association supports the Garrison diversion unit wholeheartedly for many reasons. Among them are:

POWER PICTURE

We might stand to lose some generating capacity out of the Garrison Dam through the shift of water to irrigation. However, this loss would be more than made up from the huge economic gains made to our members and our State.

We support, therefore, the speedy start of this unit even though we might lose a small amount of power.

DECREASE IN FARMS

Our State is losing people who are innately skilled in the production of food and fiber. If they are classified as surplus human beings in agriculture, unable to find and enjoy the dignity of gainful work in agriculture, then surely they are potential relief claimants in the industrialized metropolitan areas. We submit that this generation, this committee, this Congress, and this Nation cannot rest in absolute contentment.

The generations of the thirties faced a rendezvous with destiny. We face a rendezvous of equal magnitude with conservation and maximum utilization of our resources. Daniel Webster spoke in these halls many years ago and said, "Let us never forget that the cultivation of the earth is the most important labor of man. When tillage begins, other acts follow. The farmers, therefore, are the founders of civilization."

RURAL AREA DEVELOPMENT

Our rural electric cooperatives are well into full comprehension of the potential offered through the rural area redevelopment authority. Garrison diversion will find a readymade working friend.

CATTLE FEEDING

Our cattle-feeding operations continue to increase with rather astounding speed. It's a new industry and with the productivity from irrigated lands, could remove many shadows from our economic future. Irrigation takes the guesswork out of this fundamental business by assuring a supply of quality feed close at hand. Beef is a habit with Americans. We can and will provide our share of quality beef for this Nation's expanding population, but we need the dependable, low-cost feed obtainable through Garrison diversion water.

PROTECTION OF FEDERAL INVESTMENT

The Federal Government has loaned the people of North Dakota \$200 million through the Rural Electrification Administration. The Government's security is based on usage of the systems built with this money. All loans are being met on schedule. Many are paid as much as 2 years in advance. We are solvent and intend to stay that way. We do not intend to turn these systems over to profit power companies who are shamefully using moneys deceitfully taken from our captured city cousin ratepayers to destroy us.

We will need additional loans from REA to keep these companies from repealing the economic law that we've proven again and again—"As consumption increases, unit cost decreases." Our power requirements double every 7 to 10 years. We must beef up our systems to meet the demand. North Dakota rural electrics provide a yardstick of competition which effectively and efficiently keep power rates in line.

Our greatest threat has always been drought. A drought comparable to the 1930's could mean serious trouble to our electric systems. Garrison diversion is an insurance policy against drought and will provide stability in turn to many REA loans. We therefore submit that what is good for agriculture is good for our rural electrics, our State, and our Nation.

PROMISES MADE

Some 550,000 acres of Missouri River bottom land is now, or within a year or two, will be lakebed. On May 28, 1963, a Federal court jury at Bismarck

awarded Missouri bottom land owners well in excess of \$125 per acre, setting a record condemnation award. This land is gone forever. Even the most conservative leaders in our State concede a valuation of \$200 an acre for this land. The Corps of Engineers has paid more than that for bottom lands.

Thus, it follows that North Dakotans have made a substantial contribution totaling well over \$150 million. Our people have only a promise in return for this sacrifice—the promise of irrigation.

GOOD INTENTIONS

The benefits and intents of these main stem dams have not been fully met. The tally doesn't add up:

Flood control: Fully realized.

Power generation: Largely realized, substantially benefiting adjacent States.

Navigation: Largely realized, irrigation will increase this segment.

Fish and wildlife: Largely unrealized, better distribution of water needed.

Recreation: Largely unrealized, needs people.

Irrigation: Largely unrealized, will decrease out-migration.

For the reason stated, we must therefore respectfully submit that this worthwhile projects solicits and deserves your support. It is therefore respectfully urged and requested.

Thank you.

STATEMENT OF THEODORE S. HARDMEYER, PRESIDENT, LEAGUE OF NORTH DAKOTA MUNICIPALITIES

Mr. Chairman and members of the Committee on Interior and Insular Affairs, I am Theodore S. Hardmeyer, mayor of Mott, N. Dak., and president of the League of North Dakota Municipalities. Our organization represents 282 incorporated municipalities and 37 organized park districts.

For many years the urgent need for adequate municipal water supply has been recognized by city officials of North Dakota. Throughout the entire State there is grave concern. The early establishment of the Garrison diversion unit would provide an opportunity for many communities in central and eastern North Dakota to effect a solution to their increasing water requirements.

Most communities in North Dakota are attempting to attract industry. The first requisite is an ample water supply. With the installation of water systems in a large number of our smaller communities, plus the increased consumption per capita, we are all convinced that water is of No. 1 importance to our towns and villages.

On behalf of the hundreds of municipal officials and cities I represent, I strongly support S. 178. It is sincerely hoped that your committee will make a favorable recommendation on this important legislation.

STATEMENT OF OTTO MAERCKLEIN, PRESIDENT, NORTH DAKOTA WILDLIFE FEDERATION

I am Otto Maercklein of Mott, N. Dak. I am serving as president of the North Dakota Wildlife Federation. On behalf of this organization I wish to express our wholehearted support for the development of the Garrison diversion unit in North Dakota according to the plan that has been proposed by the Bureau of Reclamation and other Department of the Interior agencies. Our federation is intensely interested in the soil and water resources of North Dakota and the effect the development and utilization of these resources will have, not only on our wildlife resources, but also insofar as provision for new recreation opportunities is concerned. We firmly believe that the Garrison diversion unit can bring significant benefits to our State and to the Nation in both of these areas.

The Garrison diversion unit is a tremendous water resources project and will affect a large number of our citizens. Irrigation and the resultant stabilized and expanded business economy is most important to North Dakota. This principal purpose of the Garrison diversion unit has very strong and widespread support.

We are happy to note that the opportunities for fish and wildlife mitigation and enhancement have been included as a part of the plan for this multiple-pur-

pose project. Often this is not the case and significant losses to our wildlife resources has been experienced. We strongly urge your approval of that portion of section 2 of S. 178 authorizing the Secretary of the Interior to provide for the conservation and development of the fish and wildlife resources of the area in accordance with Fish and Wildlife Coordination Act.

The increasing amount of leisure time that our citizens have each year points up the need for the development of new recreational areas. The restored lakes and newly created reservoirs that are a part of the Garrison diversion unit plan can provide many recreational opportunities. The assured water supply that will be available throughout central and eastern North Dakota through the project will have a stabilizing effect on waterfowl production in this area often referred to as the "duck factory of the United States." Opportunities for hunting, fishing, and all forms of outdoor recreation will be greatly improved through development of the Garrison diversion unit.

Our federation is gratified to note the cooperative effort that has gone into the planning for the Garrison diversion unit. This cooperation has existed not only among Federal agencies themselves but also among local, State, and Federal agencies. This certainly has been true in respect to the fish and wildlife aspects of the project plan. We are confident that through a continuation of this cooperative effort all problems or differences of opinion can be resolved to the satisfaction of all. The North Dakota Wildlife Federation is opposed to the inclusion of a provision in the authorizing legislation for the Garrison diversion unit that would give a local entity veto power insofar as specific fish and wildlife areas are concerned. We strongly urge your unrestricted authorization of all phases of the project as planned.

A resolution endorsing the Garrison diversion unit was adopted at the last convention of our federation. I wish to have this resolution included as a part of my statement. Thank you.

"RESOLUTION—NORTH DAKOTA WILDLIFE FEDERATION SUPPORTING THE GARRISON DIVERSION UNIT

"[Adopted June 17, 1962]

"Whereas the Garrison diversion unit is being considered for the irrigation of 250,000 acres of land, municipal, and industrial water supply for various cities, the development of areas for fish and wildlife conservation and propagation, and for outdoor recreation; and

"Whereas the area in which this project is proposed there exists today a very important segment of the remaining waterfowl nesting habitat within the contiguous 48 States and the preservation, replacement, and development of this habitat is of local and national importance in the perpetuation of the waterfowl resources of this Nation; and

"Whereas a dependable supply of water delivered through the Garrison diversion unit system will make possible the development of excellent fish and wildlife habitat, and recreational areas; and

"Whereas it is recognized that some fish and wildlife development will be required to compensate for certain areas which will be lost through project construction; and

"Whereas other fish and wildlife developments proposed for this project will enhance these important resources; and

"Whereas a great many citizens of North Dakota will derive personal enjoyment from fishing, hunting, and other outdoor recreational opportunities provided by the development of fish and wildlife areas, and citizens from other States will be attracted to North Dakota because of these opportunities: Now, therefore, be it

"Resolved, That the North Dakota Wildlife Federation in annual convention at Jamestown, N. Dak., on June 17, 1962, unanimously supports the Garrison diversion unit with its plan for development and improvement of fish and wildlife resources of the area; be it further

"Resolved, That county, State, and Federal agencies and officials, our congressional delegation, and the Garrison diversion conservancy district be urged to exert their combined efforts to obtain early approval for construction of the project with all of its proposed fish and wildlife features and that the Fish and Wildlife Service retain full control over land use and management practices on land so acquired."

STATEMENT OF RUSSELL W. STUART, COMMISSIONER, NORTH DAKOTA STATE GAME AND FISH DEPARTMENT

My name is Russell W. Stuart. I am commissioner of the North Dakota State Game and Fish Department.

Because North Dakota has contributed so much to the Missouri River Basin development in providing some of our richest agricultural lands as well as a large amount of our prime wildlife habitat that were inundated, or will be inundated, by the waters of Garrison and Oahe Reservoirs, it is imperative that the Garrison diversion project become a reality.

From the economic standpoint, North Dakota has contributed far more than it has gained from the construction of Garrison and Oahe Reservoirs. This is also true of wildlife. When we lost the bottom lands of the Missouri River over practically the entire segment in North Dakota, we lost about 20 percent of the State's total deer hunting potential. In addition, the natural cover of the bottom lands provided some of the best habitat in the world for upland game and furbearers. It has been impossible to replace even a small part of this by intense development on lands in other parts of the State.

Senate bill 178 provides for the enhancement of approximately 140,000 acres of wildlife habitat. The species benefiting primarily from this would be ducks and geese. The national waterfowl situation is indeed critical, and every effort must be made to save this important resource. If there is any one thing that would appeal to the people of the other 47 conterminous States, it is the wildlife enhancement of this project.

The geographic location and the tens of thousands of small water areas make North Dakota the most important waterfowl producing State. Garrison diversion waters will flow into that portion of the State where the highest duck production potential obtains. If the Fish and Wildlife Service plans for acquisition and development of some 40,000 acres of land for wildlife purposes are followed, the production of waterfowl throughout this area can be stabilized which, of course, will raise the average annual production. This increased production will be of direct benefit to all States in the Mississippi and central flyways.

Waterfowl production areas are decreasing at an alarming rate both in Canada and the United States. This loss is caused by draining, more intensive cropping and grazing, road construction and suburban sprawl. This trend is likely to continue and it is, therefore, essential that we find means of increasing duck production on the remaining wet lands if we are to maintain a shootable population. Wildlife areas that will be developed by Garrison diversion will lend themselves to intensive management.

It is our feeling that increased duck production in North Dakota will be of more benefit to the other States in the central and Mississippi flyway than to North Dakota because our population of duck hunters is small and our harvest correspondingly light. In other words, the wildlife enhancement of Garrison diversion will be enjoyed throughout the entire central United States.

In addition to enhanced hunting and fishing, Garrison diversion will also provide many other forms of outdoor recreation. Today, development of areas for outdoor recreation is being emphasized both on State and National levels. This project will provide some very high quality recreational areas with very little additional expense.

STATEMENT OF ECONOMIC DEVELOPMENT COMMISSION

The North Dakota Economic Development Commission continues its strong support of the proposed Garrison diversion project. We feel the effects of this project as measured in direct and indirect benefits would have an everlasting impact on the economy of this State and would significantly provide for greater wealth through an expanded economy.

Currently the economy of North Dakota is dependent on the agricultural segment of its population which provides approximately 80 percent of the new wealth of the State. When periodic droughts reduce the production from its 51,500 dryland farms and ranches, the entire economy of this State suffers. Irrigation would tend to stabilize farm incomes and farmers on irrigated lands would find it profitable to change from cereal grains, which are in surplus supplies, to nonsurplus crops. This stabilizing influence would also stimulate the expansion of the cattle feeding industry through continuing supplies of livestock feeds.

As North Dakota agriculture becomes diversified under irrigation the opportunities for industrial expansion will increase. Processors of agricultural commodities would find a stable and diversified production from irrigated lands, and water, which is commonly in critical supplies for food processing industries, would be available in adequate supplies. The new demands created as a result of irrigation will also bring about a marked increase in the number of successful retail, wholesale and manufacturing establishments for North Dakota.

New farms will become a reality as irrigable acres are developed and these farms will employ many more people than their dryland counterpart. These new farms will not be the result of the development of untilled acres, but will be the division of larger dryland farms into smaller irrigated units. Employment opportunities will not only be enhanced on irrigated farms, but our growing labor force will also find employment in the expanded businesses and new factories which will be the result of irrigation. These expanded employment opportunities will tend to reduce the rapid rate of outmigration of this State's young people.

As lakes are restored and reservoirs created through the Garrison diversion project, opportunities for the development of recreational facilities will become greatly enlarged. Fish and wildlife programs will be enhanced and North Dakota will be in a better position to cope with the recreational needs of her people and the Nation.

We sincerely hope that water, the limiting factor in the fullest development of this State's economic potential, may be supplied through the Garrison diversion project, because we know that to have a prosperous and sound agricultural economy it is necessary to have an adequate and assured supply of water.

The impact of this project is vital and necessary to the continued economic development of this State and we strongly urge the approval of this legislation.

STATEMENT OF LEE CHRISTENSEN, PRESIDENT, NORTH DAKOTA ASSOCIATION OF
SOIL CONSERVATION DISTRICTS

Mr. Chairman and members of the committee, my name is Lee Christensen, of Kenmare, N. Dak. I am president of the North Dakota Association of Soil Conservation Districts. The association I represent is composed of 71 soil conservation districts from throughout North Dakota that includes the entire area of the State. On behalf of our association I wish to join with the many other organizations and individuals who support the development of the Garrison diversion unit in urging your approval of S. 178 dealing with the authorization of the project.

The soil conservation districts in North Dakota are dedicated to the establishment of sound practices that provide for the wise conservation and utilization of the State's precious soil resources. To accomplish this objective we must necessarily direct our efforts not only to our soil but also to our water resources. The two are so closely related that they are inseparable.

The diversion of water from the Missouri River through the Garrison diversion unit will greatly enhance the wise use of our vital nonrenewable soil resources in a large area of our State. Farmers in irrigation areas will have a new opportunity to diversify their operations through the more intensive use of their land. Many of the adversities they now face because of insufficient rainfall will be eliminated through irrigation development. Land grading, improved drainage, and other land treatment measures that are necessary with irrigation along with the availability of an assured water supply for crop production will improve the farmer's ability to properly and fully use his land.

The stability of North Dakota's basic industry, agriculture, that will result from irrigation development possible through the Garrison diversion unit is sorely needed. At the present many of our farmers are faced with the dilemma of trying to adapt their operations to the production of food and fiber in demand throughout the Nation. Limitations imposed by climate and weather on the dryland farming in our semiarid State make this problem practically insurmountable. Irrigation integrated with neighboring dry land such as is possible under the Garrison diversion unit will provide the answer. Along with the improved agricultural economy in the State will come new and more jobs for our citizens in industries associated with agriculture that will develop.

We sincerely and respectfully urge your approval of S. 178 so that the construction and development of the Garrison diversion unit can get underway at an early date.

STATEMENT OF R. C. NELSON, SECRETARY, NORTH DAKOTA COUNTY COMMISSIONERS' ASSOCIATION

I am R. C. Nelson from Bismarck, N. Dak. I am secretary of the North Dakota County Commissioners' Association.

The North Dakota County Commissioners' Association has consistently supported the early development of the Garrison diversion unit. Its members are convinced that through the wise development and utilization of the available resources of North Dakota, of which water is most important, a sound and prosperous economy can be established in the State. The many purposes the Garrison diversion unit will serve, including irrigation, municipal and industrial water, recreation and others, will materially enhance the growth of North Dakota which, in turn, will benefit the region and the Nation as a whole.

Because North Dakota's economy is based primarily on agriculture the effects of a drought period are felt by all its citizens. When our farmers do not produce a crop the income of our businessmen is severely reduced, there are fewer jobs and our tax revenues are significantly less. In North Dakota we have noted the reduction in tax collections this year in many areas of the State where severe drought was experienced last year. This is the history of our semiarid farm State with the definite limitations it has in the types of crops that can be produced.

Development of irrigation under the Garrison diversion unit combined with neighboring dry land on many farms throughout central and eastern North Dakota will greatly stabilize the economy of these areas. The new source of municipal and industrial water that will be available from the project will provide new economic development in North Dakota not now available. As a result, new job, business and farm opportunities will be available thereby encouraging our young people to remain in North Dakota. The more stable tax income that will be available to various units of Government from a broadened tax base will enable them to better organize and plan their operations to meet the need of the citizens of the State.

We are pleased to note that the stimulus for the Garrison diversion unit has come from the people most directly concerned and that they will play an important part in its future development. In any project, such as this we recognize that there will be some effects that will adversely affect certain individuals, groups or areas. We know it is the desire of all agencies involved to keep such effects to a minimum and therefore believe that responsible local officials should be consulted on various phases of the project as they are accomplished.

The support of our association is expressed in a resolution adopted at our convention in January. I would like to make this resolution a part of my statement.

We sincerely urge your favorable consideration of S. 178 that will provide certain modifications to the Garrison diversion unit authorization.

STATEMENT OF JAMES R. SMITH, VICE PRESIDENT, MISSISSIPPI VALLEY ASSOCIATION

Mr. Chairman, my name is James R. Smith. I am vice president of the Mississippi Valley Association with offices in Omaha, Nebr. This statement is presented in behalf of the association's several thousand members in the 23 States drained by the Mississippi River and its tributaries.

The purpose of this statement is to make the association's position regarding the Garrison diversion unit unequivocally clear to this committee and to re-emphasize the need for completion of all phases of the comprehensive water resource development program in the Missouri Valley authorized in the Flood Control Act of 1944 and subsequently.

At the association's 1963 annual meeting, held in St. Louis, Mo., in February, association members from more than 40 States unanimously adopted the following policy statement on reclamation. It could not be more clear and forthright.

"Next to the consumptive use of water for municipal and domestic purposes, we consider the development of arid lands by irrigation to be the highest beneficial use of water in the 17 Western States."

The Mississippi Valley Association was deeply involved in the original passage of the Flood Control Act of 1944. Many of our leaders of that day and this participated in the hearings and the intricate negotiations between upstream and

downstream interests which resulted in passage of that law and in the proviso which has since become known as the O'Mahoney-Millikin amendment. This association and its officials agreed then that irrigation in the upper valley should have a priority in the use of waters arising west of the 98th Meridian. This association continues to recognize irrigation as a beneficial consumptive use of water in the arid West, second only to domestic and municipal use. The Mississippi Valley Association will continue to support with all possible vigor the construction of planned irrigation projects in the Missouri Basin.

One of the major benefits from the Missouri Basin development program is irrigation. In the upper and western basin where rainfall averages only from 16 to 20 inches annually—with that frequently falling at the wrong time for crop stability—the promise of irrigation and all it implies in the way of stabilizing and expanding the agriculture is well recognized. The importance of irrigation in the upper basin is recognized by citizens throughout the valley and certainly by the many members of the Mississippi Valley Association, comprising a cross section of business and agricultural leaders from one end of this basin to the other.

From the time the so-called Pick-Sloan plan was adopted until the present, it was foreseen that from 1.5 to 2 million acres of arid land would ultimately be irrigated under the program. We consider the shifting of the lands in North Dakota suitable for irrigation from the northwestern section to the central section of the State to be merely an essential modification of that original plan which was written into the authorizing legislation.

Therefore, the association has incorporated into its platform the following endorsement of the Garrison unit project, thus specifically recognizing it as part of the comprehensive Missouri River Basin development program:

"One of the principal benefits of the comprehensive Missouri River Basin program is the development of further irrigation projects in the upper basin. We recommend that Congress enact modifying legislation as proposed in pending bills on the Garrison diversion unit which provides, among other things, that the Secretary of the Interior shall give favorable consideration to returning to the Missouri River Basin to the fullest extent practicable, such of the return flows as are not required for beneficial consumptive purposes."

One of the primary activities and responsibilities of the Mississippi Valley Association has been to provide a vehicle through which business, agriculture, and civic leaders from all parts of the Missouri Valley can meet, discuss mutual problems and develop greater understanding of all the water problems of that great valley. This is particularly important in a basin encompassing many States with widely varying economies, geography, climate, and interests.

During the past several years, the association has sponsored a number of meetings specifically designed to encourage broader understanding of the water resource problems of the various regions and subregions in the Missouri Valley. Delegations of North Dakotans, headed by their Governor, met with downstream leaders in Kansas City. On another occasion, upstream and downstream groups met in Sioux City, Iowa. On still another occasion, 104 men from 27 cities in Montana, North and South Dakota, Nebraska, and Iowa met in Bismarck. On June 10, 1963, just next week, the 11-man executive committee of the Mississippi Valley Association will meet in Bismarck as guests of Governor Guy for a full briefing on the Garrison irrigation project. At all of these conferences, the Garrison project—as well as flood control projects in Kansas and Missouri and navigation problems on the main stem below Sioux City—are thoroughly discussed.

I mention these many conferences only to impress this committee with the fact that endorsement and support of the Garrison diversion unit by the Mississippi Valley Association has not been undertaken lightly. The association's support for the project is the result of a thorough analysis of the value of the project to the economy of North Dakota and the Nation and of previous commitments to support sound irrigation projects in the upper basin which were made as long ago as 1944 when the original authorizing act was being considered by Congress.

For the foregoing reasons, we urge this committee of Congress to expedite the passage of S. 178 so that the many years contemplated for its construction can commence.

STATEMENT OF E. M. GREGORY, REPRESENTING THE GREAT NORTHERN RAILWAY

My name is E. M. Gregory. I represent the Great Northern Railway Co. We support the proposed Garrison diversion project in North Dakota. Our transportation systems serve more than 50 percent of the State with a main line and several branch lines tapping the main agricultural producing areas.

We are interested in this project because of the beneficial effect irrigation will have on the economy and general welfare of the State and on the population trends of the area. In much of North Dakota there is not adequate average annual precipitation to assure crop production. Severe drought has occurred in this State a number of times since the area was settled. The combination of drought and low farm prices has caused widespread distress. When either or both of these conditions occur farmers often lose their livestock herds and flocks as well as their homes and have found it necessary to move to other regions of the United States to seek their livelihood. For more than 30 years the rural population of the State has decreased alarmingly and the growth in population of the State as a whole has been much less than the national average. The instability of the economy and the lack of opportunity makes it very difficult for this State to retain its greatest asset—its young people.

In the future there will be periods of plentiful rainfall during which farming will be attractive and many farmers will be inclined to increase their wheat production, which is the same type of farming that has resulted in ruin and disaster for so many families in the past. Since 1910 a large percentage of the farms in the proposed irrigated areas have been mortgaged and foreclosed three or more times. We feel that irrigation will materially enhance the stability of the farming activities in the State by eliminating crop failures due to drought and making possible for farmers to diversify their operations and crops to meet the demand of a constantly changing market. Irrigation, as proposed in the Garrison diversion unit, will not lend itself to the production of surplus crops but rather will permit the production of specialized crops which are in demand and the expansion of the livestock industry in the State.

The stabilizing effects that irrigation will have on the agricultural economy in North Dakota will extend far beyond the project area. Irrigation will enable project farmers to produce sufficient livestock feed not only for their own use but for adjacent ranching areas during periods of distress.

Irrigation development will stimulate the growth in population in the project areas. It will increase the number of farm families in the State and attract thousands of other families to man the increased industrial development that accompanies and becomes associated with irrigation. As each additional family is brought onto the project it is indicated that one additional service job is created. This increase in population, both to the rural and urban areas will reverse the trend of a declining or static population that has been experienced in the State for a number of years. A more stabilized production base in the northern and central sections of the State, resulting from the combination of the irrigation and dryland operations will provide added income, create a larger and more reliable tax structure to support schools, churches, National, State, and municipal governments.

The people of North Dakota have demonstrated their desire for the Garrison diversion unit in many ways. They have established a 25-county conservancy district that is directly concerned with the Garrison diversion unit. In addition, farmers in the areas proposed for irrigation development have organized eight irrigation districts embracing over 370,000 acres of land that can be irrigated. There is no question that more could and would be organized.

We urge your approval of S. 178 which would modify and approve the authorization of the Garrison diversion unit. Thank you.

STATEMENT OF L. S. MACDONALD, DIRECTOR, AGRICULTURAL DEVELOPMENT
DEPARTMENT, NORTHERN PACIFIC RAILWAY CO.

Recurrent periods of drought in North Dakota have caused severe farm distress and have interrupted a healthy growth in the State's general economy. In 1934 and again in 1936, drought paralyzed crop production and resulted in heavy liquidation of breeding herds and flocks. These 2 drought years brought about widespread farm foreclosures and depleted the resources of the State's business interests, as well as of its farmers. The Northern Pacific Railway has a large stake in North Dakota, and the reduction in the normal traffic from farm products

during those years made necessary economies of drastic character to preserve the solvency of the property.

Other crucial drought periods, though of less intensity, have occurred in the brief history of the State's agriculture. Only 2 years ago the crop season of 1961 got underway with fair to good prospects, but by mid-July the continued damage due to drought, heat, and grasshoppers had made devastating inroads with resulting crop abandonment and the forced dispersal of breeding flocks and herds of livestock. These losses of income and property caused real hardships on the citizens of the area. The erratic pattern of rainfall in this section may be expected to continue, and unless irrigation water is provided, similar disasters are bound to occur. In fact, in most years, the States in the Northern Plains suffer periods which vary from a few weeks to a month when crop yields are limited by inadequate moisture supplies. Recent years of more satisfactory rainfall indicate that bountiful harvests can occur when sufficient moisture is available during the crop seasons. However, rare indeed would be the year when two or three irrigations would not double or treble the yields on crops produced by natural rainfall of varying amount and frequently poorly timed.

Irrigation in North Dakota is not a matter of bringing new land into production, nor will its establishment result in releasing new products on the market in glut proportions. Rather, irrigation is a means of correcting the moisture fluctuations common to dryland agriculture. It is a smoothing out of the production pattern, with development of a farm economy not based as at present on production of cereal grains. The Garrison diversion project, when fully developed, thus will ease the threat of drought and will go a long way toward eliminating the loss of crops and livestock in the irrigated portions of the State. In addition, this area will be a reliable source of feed for livestock on adjacent nonirrigated lands. The project also will have a salutary effect on the entire economy of North Dakota. The Northern Pacific Railway is in accord with the present effort to move the Garrison diversion project into the final planning and construction stage. We supported the program for building Garrison Dam notwithstanding the elimination of thousands of acres of productive valley lands tributary to our railroad inundated by the backwater line of the reservoir.

Diversion of water from this reservoir for irrigation has been a basic and integral part of the entire Missouri Basin project from the time it was first proposed. The Bureau of Reclamation in its investigations has demonstrated the practicability and the economic feasibility of this project. Landowners within the project boundaries have cheerfully assumed the responsibility of organizing irrigation districts as a basis for entering into contractual obligations for the repayment of project costs assigned to them.

We trust your committee will consider favorably legislation which will result in the early diversion of waters impounded behind Garrison Dam to the central portion of North Dakota for the threefold purpose of irrigation, municipal water supplies, and dilution of sewage.

STATEMENT OF JOHN L. GUNKELMAN, PRESIDENT, GREATER NORTH DAKOTA ASSOCIATION

My name is John L. Gunkelman. I am president of the Greater North Dakota Association, the North Dakota State Chamber of Commerce which was organized 38 years ago and is composed of 4,000 business, professional, and agricultural leaders of the State. The organization I represent wishes to again express its full support for the Garrison diversion unit and urge this committee to approve S. 178 making certain modifications in the authorization of this unit in the Missouri River Basin project.

The Greater North Dakota Association is vitally interested in the growth and stability of the economy of the State. Agriculture is our basic and most important industry. The success of our dryland farmers each year determines, to a great extent, the prosperity of all the citizens of the State. Rainfall in sufficient quantity and at the right time is a most important factor to the success of our agricultural enterprise. Irrigation development that is possible under the Garrison diversion unit will provide the solution to this problem in a large section of North Dakota.

The multiple-purpose Garrison diversion unit will serve a number of other important purposes including providing water for municipal, industrial, recreation, fish and wildlife, and other incidental uses. All are important and will materially enhance the growth and development of North Dakota and, in turn, will have a salutary effect on the growth and strength of the region and Nation.

Insofar as feasible, it is the wish of myself and those I represent to be associated with the statements of the North Dakota congressional delegation, Gov. William L. Guy and the many other witnesses who have appeared in support of the project. The full support of the Greater North Dakota Association for the Garrison diversion unit is set forth in a resolution adopted by the board of directors of the association on April 23, 1963. I ask that a copy of this resolution be made a part of my statement.

We earnestly and sincerely request your approval of S. 178. Thank you.

"RESOLUTION URGING CONGRESS TO APPROVE LEGISLATION RELATING TO THE AUTHORIZATION OF THE GARRISON DIVERSION UNIT"

"Whereas construction of the Garrison and Oahe Dams on the Missouri River has resulted in the loss of more than one-half million acres of good agricultural lands in North Dakota for reservoir purposes which loss can, to a considerable degree, be mitigated through the development of irrigation as proposed under the multiple-purpose Garrison diversion unit; and

Whereas the Missouri River Basin project authorized by Congress in the Flood Control Act of 1944, provided for diversion from the Missouri River to irrigate lands in North Dakota, originally designated as the Missouri-Souris unit which unit, as a result of studies of the Bureau of Reclamation as set forth in House document 325, 86th Congress, has been modified and redesignated as the Garrison diversion unit with further revisions contained in this report of the Bureau of Reclamation of November 1962; and

"Whereas if the Bureau of Reclamation has determined, after extensive investigations, that the Garrison diversion unit is a sound and feasible project and the investment in this project will have a direct beneficial effect on the economy of North Dakota and indirectly on that of the region and Nation through the development of a stabilized and balanced agriculture resulting from irrigation, improved municipal and industrial water supplies, enhanced recreation opportunities and other purposes which will be served; and

"Whereas S. 178 and H.R. 1003 and 1013 that would modify and confirm the authorization of the Garrison diversion unit have been introduced in the current session of Congress by Members thereof from North Dakota; now, therefore, be it

"Resolved by the Board of Directors of the Greater North Dakota Association at meeting duly assembled in Fargo, N. Dak., this 23d day of April 1963, That this association respectfully requests and urges the Congress of the United States to approve legislation with provisions as contained in S. 178, H.R. 1003, and H.R. 1013 at an early date to the end that approval of the Garrison diversion unit will be accomplished this year; and be it further

"Resolved, That copies of this resolution be sent to the chairman of the Senate and House Committees on Interior and Insular Affairs, the members of the North Dakota and South Dakota congressional delegations, the Secretary of the Interior and the Commissioner of the Bureau of Reclamation, the Governor of North Dakota, the Garrison Diversion Conservancy District, and the North Dakota State Water Conservation Commission."

RESOLUTION—NORTH DAKOTA BANKERS ASSOCIATION SUPPORTING THE GARRISON DIVERSION UNIT

[Adopted May 11, 1963]

"Be it resolved by the bankers of North Dakota assembled in convention at Dickinson, N. Dak., this 11th day of May 1963, That the policies previously adopted by the North Dakota Bankers Association be and they hereby are, adopted and reaffirmed; and that we specifically reaffirm our resolutions on Garrison diversion as follows:

"Now, therefore, be it resolved by the North Dakota Bankers Association at its convention duly assembled in Minot, N. Dak., this 9th day of May 1963, That this association recognizes the value of the many benefits that will be derived from the Garrison diversion project, not only to the project area, but also to the entire State of North Dakota and the Nation, and therefore urges the Congress of the United States to approve the Garrison diversion project and appropriate the necessary funds to bring about the construction of the project facilities at an early date."

The above resolution was duly passed by unanimous vote of the North Dakota Bankers Association Convention May 11, Dickinson, N. Dak.
 Certified to be a true exact copy.

WILLIAM J. DANER, *Secretary.*

(The listing of names, together with the statement supporting early development of the Garrison diversion unit follows:)

STATEMENT SUPPORTING EARLY DEVELOPMENT OF THE GARRISON DIVERSION UNIT

We support the early construction and development of the Garrison diversion unit because—

1. It will provide for the irrigation of blocks of irrigable land scattered throughout central and eastern North Dakota thereby diversifying and stabilizing the production from this land and reducing the effects of periodic droughts that now adversely affect the dryland farming in the area.
2. It will provide an assured supply of good water for municipal and industrial use in an area where many communities are now faced with critical water supply problems.
3. It will permit the establishment and development of new recreational areas around newly created reservoirs and restored lakes in the project area.
4. It will enhance the conservation and propagation of fish and wildlife resources of the area that will benefit not only the State but the entire Nation.
5. It will provide a more constant flow in many of the intermittent rivers and streams of the area enhancing their use for domestic and stock water purposes.
6. The new wealth created by the production from irrigated lands integrated with nearby dryland will result in an increase in the trade and business economy of the area and will be reflected in the economy of the region and Nation.
7. It will provide new job opportunities to the young people of the area in agriculture, business, and industry not presently available.
8. It will enhance the establishment of agriculture processing industries that in turn will stabilize the economy of the area.
9. Development of irrigation and the project will permit North Dakotans to beneficially use their share of Missouri River water and will offset the loss the State has incurred by the removal of 540,000 acres of good agricultural land from production and from the tax rolls for Garrison and Oahe Reservoirs.
10. It has strong local support of the farmers, owners of irrigable land and other potential water users as well as statewide and regional support.

We, therefore, urge the current session of the Congress of the United States to approve legislation that will modify and affirm the authorization of the Garrison diversion unit so that construction of the initial 250,000-acre phase of this essential development can get underway at an early date.

Approved this ----- day of -----, 1963,

 (Organization)
 By -----

 (Title)

LIST OF ORGANIZATIONS ENDORSING THE GARRISON DIVERSION UNIT

Statewide organizations:

North Dakota American Dairy Association
 Associated General Contractors of North Dakota
 North Dakota Association of County Commissioners
 North Dakota Association of County Engineers
 North Dakota Association of Future Farmers of America
 North Dakota Association of Rural Electric Cooperatives
 North Dakota Association of Soil Conservation Districts
 North Dakota Bankers Association
 Central Power Electric Cooperative, Inc.
 North Dakota County Agent's Association

LIST OF ORGANIZATIONS ENDORSING THE GARRISON DIVERSION UNIT—Continued

Statewide organizations—Continued

- North Dakota Crop Improvement Association
- North Dakota Dairy Industries Association
- North Dakota Democratic Party
- North Dakota Department of the American Legion
- Ducks Unlimited, Inc.
- North Dakota Farm Bureau
- Farmers Grain Dealers Association of North Dakota
- North Dakota Federation of Women's Clubs
- Greater North Dakota Association
- North Dakota Implement Dealers Association
- North Dakota Irrigation District Directors Association
- League of North Dakota Municipalities
- North Dakota Motor Carriers Association
- North Dakota Railway Lines
- North Dakota Republican Party
- North Dakota State Water Conservation Commission
- North Dakota Soil Conservation Committee
- North Dakota Water Users Association
- North Dakota Wildlife Federation

Irrigation districts:

- Dickey-Sargent Irrigation District
- James River Irrigation District
- Lincoln Valley Irrigation District
- Middle-Souris Irrigation District
- North Souris Irrigation District
- Tri-County Irrigation District
- Warwick-McVillie Irrigation District

Barnes County:

- City of Valley City
- Barnes County Commissioners
- Barnes County Farmers Union
- Barnes County Soil Conservation District
- Valley City Chamber of Commerce
- Barnes County Wildlife Federation

Benson County:

- Benson County Commissioners
- Benson County Farm Bureau
- Future Farmers of America, Maddock
- Leeds Civic Club
- Leeds Future Farmers of America
- Minnewaukan City Council
- Minnewaukan Commercial Club
- Oberon Commercial Club
- West Bay Wildlife Club, Minnewaukan

Bottineau County:

- Bottineau Chamber of Commerce
- City of Lansford
- Bottineau County Commissioners
- Lansford Commercial Club
- Maxbass Village Board
- Mouse River Soil Conservation District
- Bottineau County Water Users Council
- Westhope Betterment Committee
- Westhope Chamber of Commerce
- Bottineau County Wildlife Federation

Cass County:

- Cass County Board of County Commissioners
- Cassellton Community Club
- Chaffee Livestock 4-H Club
- City of Fargo
- Dandelion Homemakers Club, Cassellton
- Fargo Chamber of Commerce
- Cass County Farmers Union
- Maple River Soil Conservation District
- Northwest Cass Soil Conservation District

LIST OF ORGANIZATIONS ENDORSING THE GARRISON DIVERSION UNIT—Continued

Eddy County :

City of New Rockford
Eddy County Commissioners
Community Development Corp, New Rockford
Eddy County Crop Improvement Association
Eddy County Farm Bureau
Eddy County Farmers Union
Eddy County 4-H Club
Future Farmers of America, New Rockford
Eddy County Homemakers Club
Kiwanis International, New Rockford
Eddy County Livestock Improvement Association
New Rockford Civic Association
New Rockford Jaycees
Eddy County Soil Conservation District
Eddy County Water User's Council
Eddy County Wildlife Federation

Grand Forks County :

City of Northwood
Larimore Commercial Club
Larimore Lions Club
Northwood Commercial Club
Northwood Fire Department
Victory Post No. 92, American Legion, Northwood

Griggs County :

American Legion Post No. 143, Cooperstown
Binford Commercial Club
Binford Wildlife Federation
City of Cooperstown
Griggs County Commissioners
Cooperstown Commercial Club
Griggs County Farm Bureau
Griggs County Farmers Union
Griggs County Homemakers' Council
Griggs County Soil Conservation District
Sutton Community Club
Village of Binford
Village of Hannaford

LaMoure County :

City of LaMoure
James Valley Sportsman Club
LaMoure Lions Club

McLean County :

City of Turtle Lake
McLean County Commissioners
McLean County Farm Bureau
McLean County Farmers Union
Garrison Sportsmen's Club
Mercer Village Council
Riverdale Sportsmen's Club
South McLean Soil Conservation District
Turtle Lake Commercial Club
Underwood Commercial Club
West McLean Soil Conservation District

Nelson County :

Nelson County Commissioners
Nelson County Crop Improvement Association
Forde Dayton Homemakers Club, McVile
Nelson County Livestock Association
McVile Commercial Club
Pekin Commercial Club
Pekin Rod and Gun Club
Tolna Community Commercial Club
Tolna Wildlife Club

LIST OF ORGANIZATIONS ENDORSING THE GARRISON DIVERSION UNIT—Continued

Pierce County :

- Balta Wildlife Club
- City of Rugby
- Pierce County Commissioners
- Pierce County Farm Advisory Council for Education and Research
- Pierce County Farm Bureau
- Pierce County Farmers Union
- Pierce County 4-H Clubs
- Pleasant Lake Wildlife Club
- Rugby City Council
- Rugby Milk Producers Association
- Rugby Rural Areas Development
- Pierce County Soil Conservation District

Ramsey County :

- Chamber of Commerce, Devils Lake
- City of Devils Lake
- Ramsey County Commissioners
- Devils Lake Junior Chamber of Commerce
- Ramsey County Farm Bureau
- Ramsey County Farmers Union
- Ramsey County 4-H Council
- Fort Totten-Sully's Hill Association, Devils Lake
- Future Farmers of America, Devils Lake
- Ramsey County Homemaker's Club
- Kiwanis International, Devils Lake
- Rotary Club, Devils Lake
- Ramsey County Soil Conservation District
- Ramsey County Wildlife Federation

Ransom County :

- City of Enderlin
- Ransom County Commissioners
- Enderlin Chamber of Commerce
- Enderlin Kiwanis Club
- Enderlin Wildlife Club
- Ransom County Farm Bureau
- Ransom County Farmers Union
- Lisbon Civic & Commerce Association
- Lisbon Kiwanis Club
- Sheldon Village
- Ransom County Soil Conservation District

Richland County :

- City of Wahpeton
- Richland County Commissioners
- Richland County Farm Bureau
- Richland County Soil Conservation District
- Wahpeton Chamber of Commerce
- Richland County Water Conservation & Flood Control District No. 1

Sargent County :

- Cogswell Gun Club
- Sargent County Commissioners
- Sargent County Drainage Board
- Sargent County Farm Bureau
- Sargent County Farmers Union
- Sargent County Soil Conservation District
- Village of Cogswell
- Sargent County Water Conservation & Flood Control District
- Wildrice Soil Conservation District

Sheridan County :

- Boosters' Club of McClusky
- City of McClusky
- Sheridan County Commissioners
- McClusky Lions Club
- Sheridan County Soil Conservation District
- Sheridan County Wildlife Federation

LIST OF ORGANIZATIONS ENDORSING THE GARRISON DIVERSION UNIT—Continued

Steele County:

City of Finley
Steele County Commissioners
Enger-Primrose Farmers Union Local, Finley
Steele County Farm Bureau

Stutsman County:

Stutsman County Commissioners
Stutsman County Farm Bureau
Stutsman County Farmers Union
Future Farmers of America
Jamestown Chamber of Commerce
Jamestown Educational Association
Stutsman County Soil Conservation District
Stutsman County Wildlife Federation

Traill County:

Traill County Board of Commissioners
City of Mayville
City of Portland
Clarence O. Anderson American Legion Post No. 93, Portland
Traill County Farm Bureau
Traill County Farmers Union
Future Farmers of America, Mayville
Mayville Civic Club
Portland Commercial Club
Portland Homemakers
Portland Rod & Gun Club
Traill County Soil Conservation District

Ward County:

Carpio Farmers Union Elevator
Carpio Farmers Union
City of Minot
Ward County Commissioners
Daughters of the American Revolution, Minot
Ward County Farm Bureau
Ward County 4-H Council
Ward County Homemakers' Clubs
Minot Central Labor Union
Minot Chamber of Commerce
Minot Exchange Club
Minot Farmers Union Elevator
Minot Future Farmers of America
Minot Kiwanis Club
Minot Lion's Club
Plain Plowman 4-H Club, Minot
Rotary Club of Minot
Sertoma Club, Minot
Ward County Soil Conservation District
Ward County Township Officers Association
Village of Makoti
Ward County Water Users Council

Wells County:

City of Fessenden
Wells County Commissioners
Wells County Farm Bureau
Wells County Farmers Union
Harvey Civic Commerce
Harvey Development Corp.
Harvey Jaycees
Harvey Kiwanis Club
Harvey Wildlife Conservation Club
Wells County Rifle Club
Wells County Soil Conservation District

McHenry County:

McHenry County Commissioners
North McHenry Soil Conservation District

Senator BURDICK. Our next witness is Mr. Milo W. Hoisveen.

**STATEMENT OF MILO W. HOISVEEN, STATE ENGINEER AND CHIEF
ENGINEER OF THE STATE WATER CONSERVATION COMMISSION,
NORTH DAKOTA**

Mr. HOISVEEN. Mr. Chairman and members of the committee, for brevity's sake I will file my statement. However, there is one significant part, Mr. Chairman, that I would like to bring out and, that is, in regard to the water supply for the air bases that are located in North Dakota.

It is significant, but less emphasized as a benefit that will accrue to the Garrison unit which is providing adequate and assured water supplies for municipal and industrial purposes.

Over 100 towns and cities will find new hope for the enhancement of their municipal water supply through the Garrison diversion unit.

This might be indirectly of some interest. There are two air base installations located in North Dakota that are fighting for the defense of our country who are, also, faced with serious water supply problems. They are the Grand Forks and Minot Air Bases, both of which are located within the area that can be served by the diversion unit.

I quote an excerpt from a letter received from the U.S. Army, Corps of Engineers, District Omaha, Nebr., dated April 30, 1963:

Grand Forks Airbase is presently being supplied with water by the city of Grand Forks, N. Dak. The insufficient water supply now available from the city of Grand Forks makes it necessary to seek an alternate source of supply for the Grand Forks Airbase. One alternate plan under consideration is to establish an independent base water supply by diverting raw water from the Red River of the North. The estimate water requirements under this plan for domestic supply for Grand Forks Airbase, are 2,500,000 gallons a day maximum, 555 million gallons annually. Advice is also sought whether there is sufficient water available in above-water course to permit your approval of an application setting out the above estimate raw water requirements.

As you know, during the extended drought of the thirties the flow of water in the Red River at Grand Forks was reduced to 2.7 cubic feet per second which is insufficient to meet the expanding population growth of Grand Forks and East Grand Forks. The Souris River from which Minot obtains a portion of its water supply, showed periods of no flow during the drought era. The flow of both of those streams can be augmented with water diverted from the Missouri River to the Garrison diversion unit.

I might add that I am sorry that Senator Jordan was unable to stay, because he himself is quite an authority on both of these streams, having served as Chairman of the International Joint Commission during some of our hassles with Canada.

With that, Mr. Chairman, I wish to thank you for the opportunity of appearing before your committee and making this presentation.

(The prepared statement of Milo W. Hoisveen follows:)

**STATEMENT OF MILO W. HOISVEEN, STATE ENGINEER AND CHIEF ENGINEER OF THE
STATE WATER CONSERVATION COMMISSION**

Mr. Chairman and members of the committee, my name is Milo W. Hoisveen. I am State engineer for North Dakota and chief engineer of our State water conservation commission.

In my position I am closely associated with the many problems relating to water resources that have been and are being experienced in North Dakota. The duties of my office require that I review the plans for various water resources projects and conduct the required proceedings to establish irrigation districts in

the State. In carrying out these functions I have come to recognize not only the desirability of initiating the construction of the Garrison diversion unit at an early date because of the many benefits that will result, but also the united and sincere support for this project among the citizens of North Dakota.

In addition to the 25-county Garrison Diversion Conservancy District, which was established by the North Dakota Legislature in 1955 as the overall entity responsible for the development of the Garrison diversion unit, 8 irrigation districts have been organized for the project upon petition of the landowners who will represent the irrigation farmers in connection with the Garrison diversion unit. These irrigation districts, which vary in size from 9,000 acres of irrigable land to approximately 88,000 acres, have a total of 370,000 acres of land that can be served by the project included within their boundaries. The strong desire of the farmers for the project is further indicated by the fact that over 80 percent of the irrigable land was voluntarily included in these districts by the farmers. At the present time petitioning is underway to establish an additional 35,000-acre district which should be completed this summer.

The growing recognition among farmers in North Dakota of the value of irrigation can be noted from the increase in filing of water right applications in my office by individual farmers. During the last 10 years we have received 580 applications to irrigate 89,000 acres compared to 397 filings to irrigate 64,000 acres in the previous 52 years exclusive of filings for irrigation districts. The only foreseeable reason for a slackening of interest in irrigation is the lack of available water for irrigation, a situation that exists in several areas of our State at the present time. The diversion of Missouri River water to central and eastern North Dakota through the Garrison diversion unit will preclude the likelihood of problems as to the availability of water for irrigation purposes from developing in this section of the State.

For a number of years before my return to North Dakota, my native State, I was employed by the Bureau of Reclamation as an irrigation engineer on a number of projects in the Western States. I had the opportunity to serve for approximately 8 years on the gigantic Columbia Basin project in Washington in the 1940's. I am convinced that irrigation development under the Garrison diversion unit will have a beneficial effect on the agricultural and business economy of North Dakota similar to that noted in the Columbia Basin area. The great need for a stimulus to the North Dakota economy such as the Garrison diversion unit is dramatically emphasized by the loss of population and slow growth experienced in the State. The fluctuations in the economic wealth produced in North Dakota can be directly associated with our agricultural income which in turn varies with the rainfall received and the production from our dryland farms.

A significant, but less emphasized benefit that will accrue from the Garrison diversion unit is that associated with providing adequate and assured water supplies for municipal and industrial purposes. Over 100 towns and cities will find new hope for the enhancement of their municipal water supply through the Garrison diversion unit. Two airbase installations located in North Dakota, vital to the defense of our Country, are also faced with serious water supply problems. They are Grand Forks Air Force Base and the Minot Air Force Base, both of which are located within the area that can be served by the Garrison diversion unit. I quote an extract from a letter received from the U.S. Army, Corps of Engineers, district Omaha, Nebr. on April 30, 1963:

"Grand Forks Airbase is presently being supplied with water by the city of Grand Forks, N. Dak. The insufficient water supply now available from the city of Grand Forks makes it necessary to seek an alternate source of supply for the Grand Forks Airbase. One alternate plan under consideration is to establish an independent base water supply by diverting raw water from the Red River of the North. The estimated water requirements under this plan for domestic supply for Grand Forks Airbase, are 2½ million gallons a day maximum, 550 million gallons annually. Advice is also sought whether there is sufficient water available in above watercourse to permit your approval of an application setting out the above estimated raw water requirements."

During the extended drought of the 1930's the flow of water in the Red River at Grand Forks was reduced to 2.7 cubic feet per second which is insufficient to meet the expanding population growth of Grand Forks and East Grand Forks. The Souris River from which Minot obtains a portion of its water supply, showed periods of no flow during the drought era. The flow of both of these streams can be augmented with water diverted from the Missouri River through the Garrison diversion unit.

North Dakota has not taken the attitude that it is the sole responsibility of the Federal Government to finance the investigation, planning, and development of the Garrison diversion unit and other units of the Missouri River Basin project. The State has made significant contributions both in money and resources, for this gigantic endeavor. Ever since the Flood Control Act of 1944 authorized the Missouri Basin project, the State of North Dakota believed the Garrison diversion unit to be an assured part of the project. As a result, the State water conservation commission has done everything possible to assist the Bureau of Reclamation in its investigations and planning of the project. Direct grants in cash and survey work on the diversion have been made to the Bureau. The State water commission has provided the Bureau with survey parties, gathered field data concerning surface and ground water, topographic mapping, soils information, and other information essential to the planning for this unit. The estimated contribution by the State for the Missouri River Basin project is approximately \$7 million.

Significant too is the investment that the Federal Government has already made in the construction of projects associated with the Garrison diversion unit. Included are approximately \$63 million of the cost of the Garrison Dam and Reservoir which has been allocated to the Garrison diversion unit, \$3½ million for the Snake Creek embankment and \$4¼ million for Jamestown Dam and Reservoir, all essential features of the Garrison diversion unit. Realization of the full potential benefit of these investments is dependent on the diversion of water to central and eastern North Dakota through the Garrison diversion unit. Approval of the modification of the project authorization at an early date will result in economies that can be accomplished during the transition between the investigation and construction phases of the project.

A Missouri River diversion project in North Dakota, which was authorized in the Flood Control Act of 1944, has always been the State's primary interest in the overall basin project. The Garrison diversion unit represents a refined version of the diversion plan that will result in significant economies in water and investment costs over the originally proposed plan. The alterations to the original plan included a change in the point of diversion and in the location of some of the lands proposed for irrigation. These changes have resulted in a better project for all concerned.

I wish to thank the committee for the opportunity to make this presentation.

Senator BURDICK. Thank you for your very helpful statement. Your full statement was made a part of the record.

Our next witness is Mr. Howard Pare, president of the North Dakota Irrigation District Directors Association.

STATEMENT OF HOWARD PARE, PRESIDENT, NORTH DAKOTA IRRIGATION DISTRICT DIRECTORS ASSOCIATION, TOLNA, N. DAK.

Mr. PARE. Mr. Chairman and members of the committee, I am Howard Pare of Tolna, N. Dak. I have lived on a farm all my life and for the past 20 years have operated a farm in partnership with my father. Our farm consists of 1,800 acres, 817 of which are irrigable and are included in the Warwick-McVile Irrigation District which can be served by the Garrison diversion unit. I am a director of the Warwick-McVile Irrigation District and am presently serving as president of the North Dakota Irrigation District Directors Association. I appear before your committee on behalf of our statewide association and the eight organized irrigation districts in the Garrison diversion unit area to urge your favorable consideration of S. 178 that will modify the authorization of the Garrison diversion unit.

Farmers who own irrigable land that can be served by the Garrison diversion unit are anxiously looking forward to the early development of this project for a number of reasons.

Dry farming in a semiarid State such as North Dakota is risky. This is particularly true of farmers who are dry farming land classified as irrigable because these soils are lighter and more droughty than

the heavier glacial till soil that is typical in much of our State. Rainfall is our main concern. Each year we anxiously hope for enough at the right time to assure a good crop. Some years we are fortunate, in 1962, for example, but in many others the needed rains do not come and we receive only part of the crop. Irrigation can eliminate this problem by providing an assured water supply for our crops year after year.

Most North Dakota farmers would welcome the opportunity to diversify their operation. Under present conditions this is nearly impossible to do because of the limited number of crops that can be raised with our average 17-inch-a-year rainfall, of which only 10 to 12 inches occurs during the growing season. We would like to shift our emphasis from wheat and other small grains to feed and forage crops that would sustain a livestock industry and a more stable agriculture. Here again irrigation, as proposed under the Garrison diversion unit which will be integrated with dry land at a rate of about 1 acre of irrigation to 3 or 4 acres of dry land, can provide us the answer.

In asking for your approval of the Garrison diversion unit we do so, not because we expect it to provide a solution to the immediate agricultural problems we face but rather because of the new opportunities that will be available for our children. We would like to see our sons have the opportunity to become farmers if they like this way of life. The trend toward larger and more efficient farm units that began about 20 years ago has resulted in many of our smaller farms being absorbed in larger ones. No new land is available for farms in North Dakota; consequently, the opportunity for our young people to begin farming is practically nonexistent. The more intensified agriculture that goes with irrigation will provide new farming opportunities. The trend toward fewer and larger farms is also significant in its effect on the smaller communities in our State. As our farms increase in size the population in the trade area decreases; hence, there are fewer customers. Many of the smaller towns face a constant struggle for their very existence.

The farmers who own irrigable land that can be served by the Garrison diversion unit are familiar with the obligations they must assume to obtain irrigation development. We are aware of the cost of irrigation water and the cost of preparing our land for irrigation. We have seen the results that we might expect from irrigation at our State owned and operated Carrington Irrigation Experiment Station and at various irrigation development farms throughout the proposed Garrison diversion unit area. We have visited other irrigation projects and learned from experienced irrigation farmers of their problems and practices. We are convinced that irrigation can help us solve many of the problems that are associated with our dry land agriculture.

We know that irrigation under the Garrison diversion unit will not be the answer to all of our problems but it will provide us with a new avenue that will enable us to make our full contribution to the growth and strength of our Nation. On behalf of the many farmers in North Dakota who stand behind this project I sincerely request your favorable consideration of the legislation approving the authorization of the Garrison diversion unit.

Mr. Chairman, I wish to include as part of my statement a resolution adopted by the North Dakota Irrigation District Directors Association supporting the Garrison diversion unit. Thank you.

Senator BURDICK. Without objection, the resolution will be made a part of the record at this point.

(The resolution follows:)

RESOLUTION REQUESTING FAVORABLE CONSIDERATION BY CONGRESS OF THE
GARRISON DIVERSION UNIT

Whereas the North Dakota Irrigation District Directors Association is vitally interested in the development and expansion of irrigation in North Dakota so as to bring about new stability and opportunity in the State's agricultural economy; and

Whereas through the construction of the Garrison diversion unit in North Dakota irrigation can be developed in a large area of the State that is presently farmed under dry land conditions and is afflicted periodically by severe drought; and

Whereas the Garrison diversion unit has strong support of the farmers who will be directly affected by the project as well as that of many organizations and individuals from all sections of the State: Now, therefore, be it

Resolved by the North Dakota Irrigation District Directors Association at meeting duly assembled this 20th and 21st day of March 1963, That this association urges the Congress of the United States to enact legislation approving the authorization of the Garrison diversion unit in order to permit the early construction and orderly development of this all important project to the State of North Dakota; and be it further

Resolved That copies of this resolution be sent to the chairman of the U.S. Senate and House of Representatives Interior and Insular Affairs Committees, Senators Milton R. Young and Quentin N. Burdick, and Representatives Don L. Short and Hjalmar C. Nygaard.

Senator BURDICK. I understand that this is your first appearance before a congressional committee?

Mr. PARE. That is right.

Senator BURDICK. We thank you.

Mr. PARE. Thank you.

Senator BURDICK. Our next witness is Mr. Peter J. Breukelman. We will be glad to hear from you now.

**STATEMENT OF PETER J. BREUKELMAN, METEOROLOGIST, AND
MEMBER OF FORT RANDALL CONSERVANCY DISTRICT, SOUTH
DAKOTA**

Mr. BREUKELMAN. Mr. Chairman, and members of the committee, I am Peter J. Breukelman, a meteorologist and member of the Fort Randall Conservancy District of South Dakota.

I deeply appreciate the opportunity granted to me to appear briefly before the Senate Interior and Insular Affairs Committee in support of the legislation authorizing the Garrison diversion unit. While most of this unit is in North Dakota, part of the Garrison diversion unit lies in South Dakota and extends into Brown and Marshall Counties in the north-central part of our State.

The portion of the Garrison unit transversing the border of the two States is known as the Oakes section. This section comprises approximately 108,000 acres of irrigable land of which approximately 56,000 acres are located in South Dakota. The Oakes unit projects southward into South Dakota and terminates at the boundaries of

Crow Creek in Brown County in South Dakota. The segment of the Oakes section located in South Dakota is within the Oahe Conservancy Subdistrict, a multiple-purpose water resource development agency similar to the Garrison Diversion Conservancy District in North Dakota. The Oahe Conservancy Subdistrict in South Dakota is vitally interested in multiple water resource development, especially as regards irrigation, in that area.

Development of the Garrison District which encompasses the Oakes unit will bring to those lands a stable water supply and in this way help minimize probabilities for crop failures and thereby stabilize the economy of the area away from the current boom or bust experience.

In a semiarid climate such as exists in much of the area suitable for irrigation of the type proposed in South Dakota, an application of water at the right time can mean the difference between a crop and a crop failure. The application of water to our type of condition depends in its effect not so much on the total amount available in a growing season, which is not always climatologically small for a semiarid region—averaging almost 20 inches over a 30-year average—but rather on the ability to control the time and amount of its application. Crop failure causes economic losses which adversely affect the man on the land and the businessman on Main Street. The necessity of obtaining a reliable water supply to reduce if not eliminate such adverse economic conditions has always been foremost in man's mind. The development of the Garrison unit would provide a stable water supply to those landowners in the Oakes section.

With the development of irrigation in this area, job opportunities will increase and thus we in South Dakota could benefit by reducing the exodus of many young people from the State and further diversify the economy. In addition to irrigation developments on this project, possibilities exist for incidental uses of water including municipality water supplies, fish and wildlife developments, and recreation.

We, in South Dakota, endorse the Garrison diversion unit and urge favorable consideration of this project.

Senator BURDICK. We thank you for your fine statement.

Mr. BREUKELMAN. Thank you.

Senator BURDICK. Last but not least of our list of witnesses is Mr. William E. Welsh of the National Reclamation Association. We are glad to have you here and will be glad to hear you.

**STATEMENT OF WILLIAM E. WELSH, SECRETARY-MANAGER,
NATIONAL RECLAMATION ASSOCIATION, WASHINGTON, D.C.**

Mr. WELSH. Mr. Chairman and members, we consider this an extremely important project. I have a statement here in support of the project. I would on behalf of the National Reclamation Association appreciate it if that statement can be included in the record.

Senator BURDICK. Without objection the full statement will be included in the record at this point.

Mr. WELSH. Thank you.

Senator BURDICK. Thank you.

(The prepared statement of William E. Welsh follows:)

STATEMENT OF WILLIAM E. WELSH, SECRETARY-MANAGER, NATIONAL RECLAMATION ASSOCIATION

My name is William E. Welsh. I am secretary-manager of the National Reclamation Association.

About two-thirds of the members of our association are officers, directors, attorneys, managers, or engineers of irrigation districts and canal companies from each of the 17 Western States. These men live on and fully understand and appreciate the value of irrigation and reclamation projects. Almost all of their projects have already been constructed and are now in operation. For this reason their endorsement of continued reclamation development throughout the Western States is unusually significant. These men, perhaps more than any other group of citizens in America, realize the value of reclamation not only to the area in which the project is situated but to the Nation as a whole. For this reason I am attaching to my statement a copy of Resolution No. 17 "Authorization and Appropriations for Continued Reclamation Programs" which was adopted at the last annual meeting of our association in Portland, Oreg., October 1962. I request that this resolution be included in the record along with my statement and as a part thereof.

It is indeed a privilege for me to appear before this committee today and support the legislation S. 178 relating to the Garrison diversion unit and to give our wholehearted support to that project on behalf of the National Reclamation Association.

The Garrison diversion unit is very much needed as a stimulant to the economy of North Dakota. This State, like most of the other Great Plains States, is on the borderline between the humid and the arid areas of the Nation. In years when rainfall is plentiful and timely, the crops are matured without difficulty and the economy of the State prospers. But in a good many years, the rainfall is entirely inadequate. During those dry years or years of short rainfall, the farmers who are dependent solely upon rainfall for the moisture requirements of their crops suffer serious and extreme losses and the economy of the area is adversely affected. The proposed irrigation which would be provided for this area by the construction of the Garrison diversion unit would supplement the rainfall and provide sufficient moisture to give assurance of a full crop, year in and year out. For this reason the Garrison diversion unit is extremely important not only to the present economy of the area but to the future growth economy and well-being of the entire State.

There is one point that should be emphasized in connection with this project and that is that it would actually result in a reduction of crops which are in agricultural surpluses. A great deal of the land which would be irrigated by the Garrison diversion unit is now growing wheat and other small grain crops, but when irrigation water is provided, we are given assurances by the people who are familiar with the area, that the farmers would convert to more diversified farming. In other words, the effect of irrigation brought about by the construction of the Garrison unit will be to take this land out of crops that are now in surplus—mainly wheat—and convert it to the growing of crops that are not in surplus.

Another point that should be given consideration is that when an area such as this is placed under irrigation, it usually results in breaking the farms up into smaller tracts, thereby providing a means of livelihood for a greater number of people. This would mean more business for all of the towns and villages of the area.

We should not overlook the fact that the economy of North Dakota was seriously adversely affected when the State lost more than 500,000 acres of land which was flooded by the construction of reservoirs. These multiple-purpose reservoirs were constructed primarily for flood control, irrigation, navigation, and hydropower production. To date most of the benefits have accrued to areas in other States farther down the stream. The irrigation of the 250,000 acres proposed as the first phase of the ultimate development of the Garrison diversion project will in part offset the loss of land that was flooded by these reservoirs.

To illustrate the benefits of irrigation to an area such as this, let us look at the results where reclamation projects have been developed in areas similar to the Garrison area in North Dakota.

The Bureau of Reclamation has published several reports dealing with studies that have been made on reclamation projects in areas quite similar to this in North Dakota and the results obtained by those studies are indeed astounding. For instance, they show that Weld County in eastern Colorado now supports 9 times as many people per 1,000 acres as it did prior to irrigation.

The results obtained on the Belle Fourche Federal reclamation project in South Dakota, are also very enlightening. For instance, although the Belle Fourche project constitutes only a small percentage of the area of Butte County, yet that county sells 80 percent more livestock per unit of area than the three adjoining areas. The average teachers' salary in Butte County is \$418 higher than in the more sparsely populated surrounding counties. Butte County has 67 percent more doctors and dentists and 87 percent more beds in hospitals and nursing homes per 1,000 population than in the 3 nearby counties which are similar except for the degree of irrigation development.

The Federal tax collections attributed to the Belle Fourche project area from 1940 to 1959 approximate \$6 million or more than the Federal cost of the project. Through annual construction costs, repayments and Federal taxes, the project area contributes about \$400,000 per year to the current revenues of the Federal Government.

Although the Belle Fourche project has already produced crops valued at more than \$60 million, it will continue to serve future generations not only in the local community but in lesser measure throughout the State and Nation.

Another striking illustration of the benefits brought about by the development of a reclamation project are to be found on the Lower Yellowstone project in eastern Montana and western North Dakota. The Reclamation Report released in 1958 shows that the cumulative gross value of crops grown on the project up to that time was about 14 times the Federal cost to construct the project. Project-irrigated land outproduces adjacent nonirrigated land by about six times. Although a large part of this project was not brought under irrigation and into agricultural production until the late 1930's, yet the report shows that by 1958 the Federal costs of the projects had been about 60 percent repaid. Federal tax revenues from the project area since from 1940 through 1958 equaled nearly twice the Federal cost of the project construction.

The above illustrations clearly demonstrate the economic value of reclamation development in an area such as the Garrison unit comprises in North Dakota.

We believe this is a good project. We consider it economically justifiable and financially feasible. We are advised that it is being reported to the Congress at this time on the basis of new criteria set forth in Senate Document 97 issued a year ago having to do with the evaluation of water resource projects and on that basis it shows a favorable benefit-cost ratio.

We understand that the project report makes a favorable showing not only based upon the study of a 100-year analysis and the total direct and indirect benefits which are permissible under the new directive a year ago, but also that a favorable benefit-cost ratio is shown when the study is limited to a 50-year analysis and to direct benefits only.

At the present time, the Federal Government, through the Department of Agriculture, is carrying on programs in practically every State in the Nation designed to bring aid and assistance to farming areas where such aid and assistance is most urgently needed. We find no fault with any of these programs. We believe that they are worthwhile but we also believe that farmers who are living in an area where they are attempting to farm with an inadequate amount of moisture—an area so urgently in need of irrigation—are just as much entitled to consideration as are the farmers who are in need of any other form of aid any place in the Nation.

We believe that this is a worthy project deserving of favorable consideration by the Congress. It is with pleasure, therefore, that I support the Garrison diversion unit on behalf of the National Reclamation Association and urge the approval of the legislation S. 178 now pending before this committee for consideration.

May I also on behalf of the entire membership of our association express our appreciation to this committee for the support which has been given over the years to the entire reclamation program which is so vitally important to the West and to the Nation.

RESOLUTION NO. 17—AUTHORIZATION AND APPROPRIATIONS FOR CONTINUED RECLAMATION PROGRAMS

Whereas water is the lifeblood of municipal, agricultural, and industrial existence; and the continuous conservation, development, and utilization of the water resources of the States are necessary to the growth of the Nation; and

Whereas remaining undeveloped water supplies are limited in amount, erratic in availability, and often located long distances from places of use and usually require major storage for control; and

Whereas the reclamation States provide expanding markets for the Nation's goods and are absorbing a large share of the increase in population in the United States because of the location of needed and newly discovered raw materials in the area and the ever-present necessity for the decentralization industry in the interest of national defense; and

Whereas the Federal Government, since its inception, has recognized its responsibility to act to encourage the economic development of the Nation, one area of modern activity being found in the Reclamation Act of 1902, and subsequent legislation relating to the development and construction of major multipurpose water-use projects; and

Whereas such improvements and water-use projects must be carried forward in keeping with increasing national needs and on a feasible local and national economic basis; and

Whereas the development of basinwide projects for the full use of a water resource is a difficult, complicated and time-consuming process often involving decades of effort; and

Whereas the magnitude and necessity for multiple use basinwide developments within the framework and limitations prescribed by interstate compacts and State laws require joint action by the States involved and the support of all reclamation States; and

Whereas, greater public understanding and appreciation of local, regional, and national benefits of the entire reclamation program are necessary: Now, therefore, be it

Resolved, That—

1. The National Reclamation Association vigorously reaffirms its support of the basic principles of reclamation which have been firmly established as a national policy for more than 50 years, and which, among other things, provide for:

(a) The principle of an integrated multiple use development of our water resources under repayment terms consistent with sound business principles and encouragement of individual initiative and responsibility.

(b) The inherent right and obligation of the people of the reclamation States with or without the assistance of the Federal Government to develop fully their water and power resources in accordance with applicable interstate compacts and the water laws of the respective States.

2. The National Reclamation Association urges all States to support comprehensive reclamation development of water resources in order that development may be fully integrated for the benefit of the national and local economies.

3. The officers of the National Reclamation Association conduct a public information program that will more clearly inform the public of the great part reclamation and water resource development contributes to the economy and to the overall strength and needs of our Nation, and emphasize in such program that an expanded, aggressive reclamation program will assure a dependable year-in and year-out supply of nonsurplus food and fiber, and that such a program will provide in the rapidly growing reclamation States an expanding market for the Nation's industry.

4. The officers of the National Reclamation Association bring to the attention of the President and the Congress the ever-present need for authorization of new projects justifiable under the law which will develop, control, conserve, and utilize the water resources of the Nation to keep pace with its expanding population and improving standards of living.

Senator BURDICK. If there are no further witnesses the committee will stand in recess. The record will remain open for a period of 10 days.

(Whereupon, at 12:40 o'clock p.m., the subcommittee adjourned.)
(Subsequent to the close of the hearing, the following statement was submitted for the record:)

STATEMENT OF HAROLD R. LEE, EXECUTIVE DIRECTOR, MID-WEST ELECTRIC
CONSUMERS ASSOCIATION, INC.

Mr. Chairman and members of the committee, my name is Harold R. Lee. I am the executive director of Mid-West Electric Consumers Association, a service organization of rural electric and municipally owned electric utility systems in the States of Colorado, Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. Under the Flood Control Act of 1944, our members are preference customers for the electric power and energy produced at the Federal hydro developments on the Missouri River. Consequently, we are vitally interested in any projects proposed for that river.

We wish to state our wholehearted support of the Garrison diversion project as provided for in S. 230. We ardently favor this project even though approximately 85 percent of the cost thereof allocated to irrigation must be repaid from power revenues.

We favor the Garrison project because it represents a step in the proper development of a river basin in the public interest and because it will mean so very much to the economy of North and South Dakota and thereby to the economy of the Missouri River Basin and the entire Nation. The details of the economic benefits to be derived from the project have been testified to by other witnesses before this committee. We merely wish to emphasize that as power users we recognize that the farmers have a call on the waters of the river for irrigation purposes which is superior to ours. We agree that this is as it should be. We know that if the optimum overall benefit is to be derived from this magnificent natural resource, priority must be given to irrigation and that the power revenues must contribute to the repayment of the irrigation costs. Through proper multiple-purpose development of the river, all interests benefit. The maximum power benefits can only be derived from the fullest multiple purpose development.

In this connection we should point out that the benefits from irrigation could not be made available in many dryland areas in various States in the basin were it not for the low-cost power which is made available by the Federal projects. There, the farmers benefit not only from low-cost power to be used for all purposes, but also are in a position to irrigate their dry land only because the low-cost power is available for pumping.

We are especially pleased that the project is being developed in such manner as to make possible the optimum conservation and development of fish and wildlife and the realization of the full recreational potential of the area. Likewise, the provision for improved supplies of municipal and industrial raw water to 15 communities in the area represents true multiple-purpose development.

Our members from the other States are pleased to see that the States of North Dakota and South Dakota which have had to provide thousands of acres of land for reservoir purposes which benefited the entire basin region will now derive these direct advantages from the basin development plan.

In closing, we respectfully ask the members of the committee to support S. 230.



