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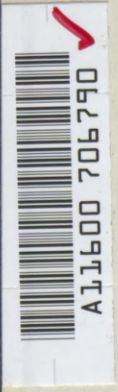
WAURIKA RECLAMATION PROJECT, OKLAHOMA

GOVERNMENT
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HEARINGS BEFORE THE SUBCOMMITTEE ON IRRIGATION AND RECLAMATION

OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE EIGHTY-SEVENTH CONGRESS FIRST AND SECOND SESSIONS



ON

S. 114

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR
TO CONSTRUCT, OPERATE, AND MAINTAIN THE WAURIKA
RECLAMATION PROJECT, OKLAHOMA

SEPTEMBER 12, 1961 AND APRIL 4, 1962

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



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CONTENTS

	Page
S. 114.....	1
Agency reports on S. 114:	
Bureau of the Budget.....	7
Interior Department.....	3

STATEMENTS

Brown, George A., mayor, city of Waurika, Okla.....	56
Bullard, J. M., president, Beaver-Cow Creek Watershed Development Association.....	12
Dominy, Floyd E., Commissioner of Reclamation; accompanied by Donald R. Burnett; M. G. Barclay, area engineer, Okoahoma City Development Office; William M. White, Chief of River Basin Studies; and James T. McBroom, Chief of Technical Services Sport Fisheries and Wildlife.....	63
Elliott, H. B., city manager, representing the mayor of Waurika, Okla.....	56
Gilley, Wayne, mayor, city of Lawton, Okla.....	42
Holden, Wayne, M., mayor, city of Duncan, Okla.....	38
Holum, Hon. Kenneth, Assistant Secretary of the Interior.....	63
Keating, Milton, secretary-manager, Lawton Chamber of Commerce, Lawton, Okla.....	44
Kerr, Hon. Robert S., a U.S. Senator from the State of Oklahoma.....	9, 69
McBroom, James T., Chief, Division of Technical Services, Sport Fisheries and Wildlife.....	73
Monroney, Hon. A. S. Mike, a U.S. Senator from the State of Oklahoma.....	8, 78
Morrison, Donald J., executive vice president, Beaver-Cow Creek Watershed Development Association.....	30
Phillips, Ferrell, city manager, Walters, Okla.....	51
Prather, Charles, mayor, town of Temple, Okla.....	54
Raab, Frank, executive director, Oklahoma Water Resources Board.....	24
Richardson, Dave, representing the mayor of the city of Temple, Okla.....	53
Sharp, W. N., mayor, city of Comanche, Okla.....	50
Smith, Ernest, mayor, city of Walters, Okla.....	52
Wickersham, Hon. Victor, a Representative in Congress from the State of Oklahoma.....	10

COMMUNICATIONS

Burks, Mack, chairman, Oklahoma Planning and Resources Board: Letter, dated September 8, 1961, to Senator Clinton P. Anderson.....	27
Dage, Don, manager, Cotton Electric Cooperative: Letter, dated April 25, 1961, to Representative James M. Bullard.....	21
Edmondson, Hon. J. Howard, Governor, State of Oklahoma: Letter, dated September 14, 1961, to Senator Clinton P. Anderson.....	61
Holum, Kenneth, Assistant Secretary of the Interior: Letter, dated Aug. 1, 1961, to Senator Clinton P. Anderson.....	3
Hughes, Phillip S., Assistant Director for Legislative Reference, Bureau of the Budget: Letter, dated March 18, 1961, to Senator Clinton P. Anderson.....	7
Putman, D. M., chairman, water committee, Duncan, Okla., Chamber of Commerce: Letter, dated September 5, 1961, to Mayor Wayne M. Holden, Duncan, Okla.....	40
Raab, Frank, executive director, Oklahoma Water Resources Board: Letter, dated September 11, 1961, to Senator Clinton P. Anderson.....	25
Roberts, Clint, Duncan, Okla., Chamber of Commerce: Letter, dated September 5, 1961, to J. M. Bullard.....	22

Stafford, Roy A., director, Oklahoma Department of Wildlife Conservation: Letter, dated September 8, 1961, to Senator Clinton P. Anderson-----	Page 26
Udall, Hon. Stewart L., Secretary of the Interior: Letter, dated September 11, 1961, to Senator Clinton P. Anderson-----	3
Wilkinson, J. W., chairman, recreation department, Duncan, Okla., Chamber of Commerce: Letter, dated September 5, 1961, to J. M. Bullard-----	22

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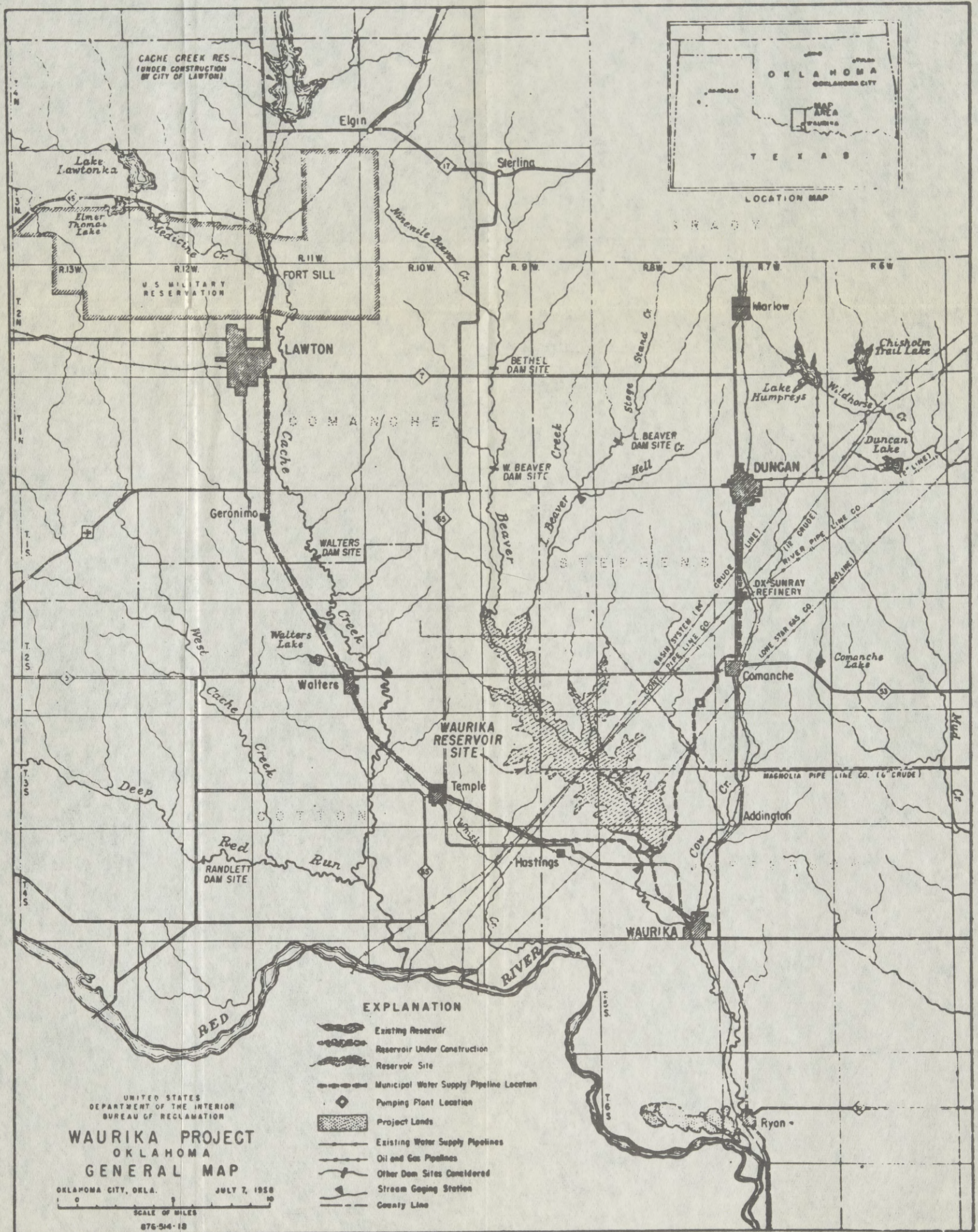
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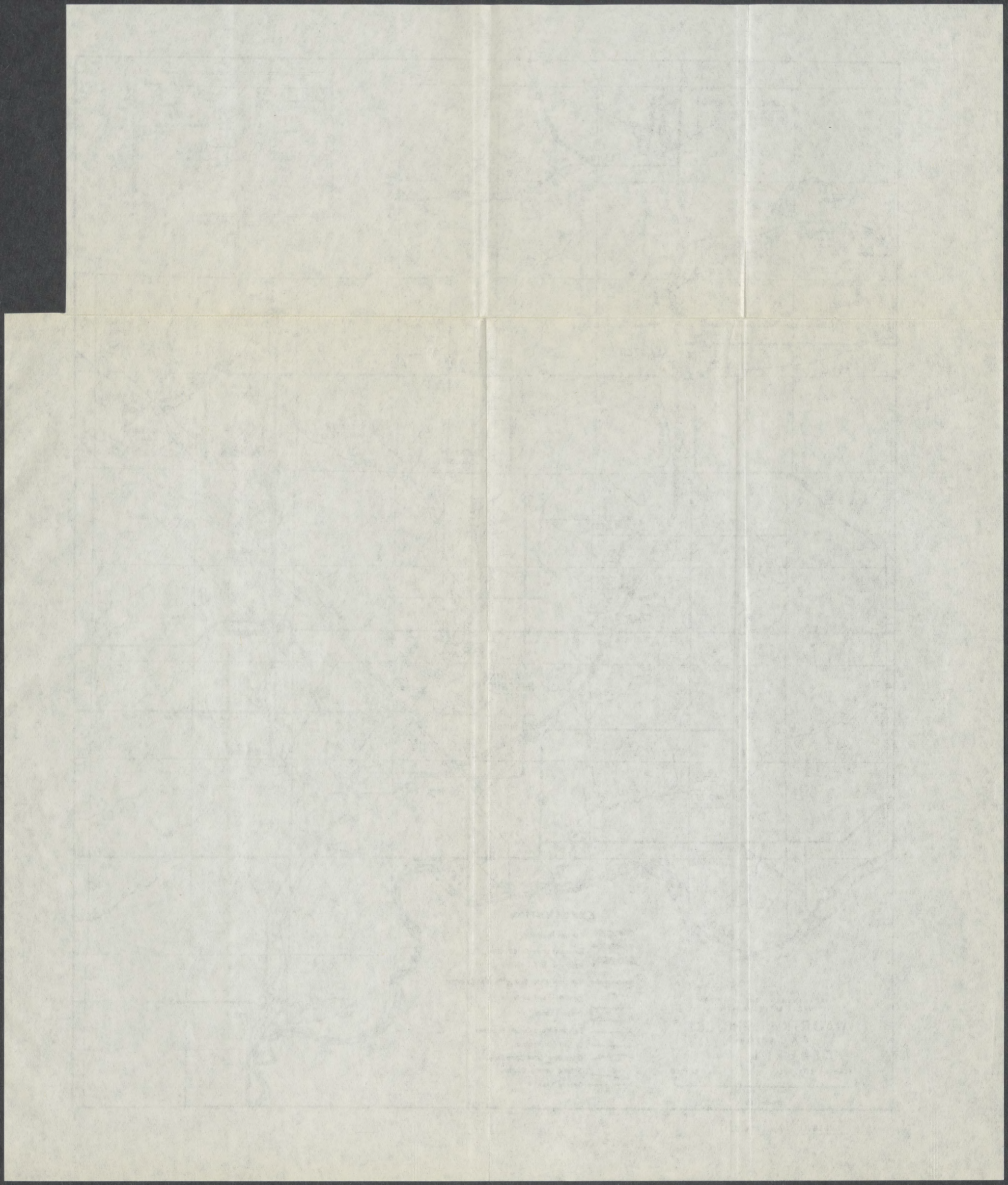
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WAURIKA RECLAMATION PROJECT, OKLAHOMA

TUESDAY, SEPTEMBER 12, 1961

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

The subcommittee met, pursuant to call, at 10 a.m., in room 3110, New Senate Office Building, Senator Henry M. Jackson presiding.

Present: Senators Henry M. Jackson (Washington), Quentin N. Burdick (North Dakota), J. J. Hickey (Wyoming), and Thomas H. Kuchel (California).

Also present: Senators Robert S. Kerr (Oklahoma), and A. S. Mike Monroney (Oklahoma).

Senator JACKSON. The subcommittee will come to order.

The hearings before the Subcommittee on Irrigation and Reclamation this morning include S. 114, to authorize the Secretary of the Interior to construct, operate, and maintain the Waurika reclamation project, Oklahoma.

The bill and the departmental reports will be inserted in the record at this point.

(S. 114 and the reports referred to follow:)

[S. 114, 87th Cong., 1st sess.]

A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the Waurika reclamation project, Oklahoma

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is authorized to construct, operate, and maintain the Waurika reclamation project, Oklahoma, in accordance with the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), except so far as those laws are inconsistent with this Act, for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities. The Waurika project shall consist of the following principal works: the Waurika dam and reservoir, an aqueduct system, pumps, canals, laterals, drains, and other irrigation works.

SEC. 2. In constructing, operating, and maintaining the Waurika project, the Secretary shall allocate the costs thereof among different functions resulting from multiple-purpose development under the following conditions:

(a) Allocations to flood control, recreation, and the conservation and development of fish and wildlife shall be nonreimbursable and nonreturnable under the reclamation laws.

(b) Allocations to municipal water supplies, including domestic, manufacturing, and industrial uses shall be repayable through contracts with municipal corporations, or other organizations as defined by section 2, Reclamation Project Act of 1939 (53 Stat. 1187), under the provisions of the Federal reclamation laws, and, to the extent appropriate, under the provisions of the Water Supply Act of 1958 (72 Stat. 319). Such contracts shall precede the commencement of construction of any project unit affecting the individual municipality or

industrial users, and shall provide for all repayment of construction costs allocated to municipal water supplies in not to exceed fifty years from the date water is first delivered for that purpose, and notwithstanding the provisions of the Water Supply Act of 1958, supra, relating to the rate of interest. Payment of said construction cost shall include interest on the unamortized balance of that allocation at a rate equal to the average rate (which rate shall be certified by the Secretary of the Treasury) paid by the United States on its marketable long-term securities outstanding on the date of this Act and adjusted to the nearest one-eighth of 1 per centum: *Provided*, That such contracts shall provide that annual municipal and industrial payments shall be continued, after the municipal and industrial water supply obligation has been fully repaid with interest as provided above, at such annual rate and for such period of time as may be determined by the Secretary as is necessary to fully repay costs allocated to irrigation which will not be repaid by the irrigators as provided in section 2(c) of this Act.

(c) Any contract entered into under section 9, subsection (d), of the Reclamation Project Act of 1939 for payment of those portions of the cost of constructing, operating, and maintaining the Waurika project, which are properly allocable to irrigation, and which are assigned to be paid by the contracting organization, shall provide for the repayment of the portion of the construction cost of the project assigned to any contract unit or, if the contract unit be divided into two or more blocks, to any such block, over a period not to exceed 50 years, exclusive of any permissible development period, provided that appropriate adjustment shall be made in the amount that irrigation water users shall repay due to payments made by municipal and industrial water users on cost allocated to irrigation as provided in section 2(b) of this Act and provided further that such contracts may be entered into without regard to the last sentence of section 9, subsection (c), of the Reclamation Project Act of 1939.

(d) The water users' organization shall be responsible for disposal of all water surplus to its requirements, and the revenues therefrom shall be used by the organization for the retirement of project debt payment, payment of interest, and payment of operation and maintenance cost of the project: *Provided*, That nothing in this section is intended to preclude the temporary furnishing of irrigation water under contracts appropriate for that purpose, from Waurika Reservoir with or without the construction of specific irrigation works.

(e) Upon the completion of the payment of the water users' construction cost obligation, together with the interest thereon, the water users shall have a permanent right to the use of that portion of the project allocable to municipal, industrial, and irrigation water supply purposes.

SEC. 3. The Secretary is authorized to transfer to the project water users the care, operation, and maintenance of the works herein authorized, and if such transfer is made, to deduct from the costs allocated to municipal water use the reasonable capitalized equivalent of that portion of the estimated operation and maintenance cost of the undertaking which, if the United States continued to operate the project, would be allocated to flood control and fish and wildlife purposes, and to deduct from the costs allocated to irrigation the reasonable capitalized equivalent of the total additional cost during the irrigation repayment period of operating the screens for protection of fish at the irrigation intake. Prior to the taking over of the care, operation, and maintenance of said works, the water users' organization shall obligate itself to operate them in accordance with regulations prescribed by the Secretary of the Army with respect to flood control and the Secretary of the Interior with respect to fish and wildlife.

SEC. 4. (a) The Secretary of the Interior is authorized, in connection with the works authorized by this Act, to construct minimum basic recreational facilities and to arrange for the operation and maintenance of the same by an appropriate State or local agency or organization. The cost of constructing such facilities shall be nonreimbursable and nonreturnable under the Federal reclamation laws.

(b) The Secretary may, upon conclusion of a suitable agreement with any qualified agency of the State of Oklahoma or a political subdivision thereof for assumption of the administration, operation, and maintenance thereof at the earliest practicable date, construct or permit the construction of public park and recreational facilities on lands owned by the United States adjacent to the Waurika Reservoir when such use is determined by the Secretary not to

be contrary to the public interest, all under such rules and regulations as the Secretary may prescribe. No recreational use of any area to which this section applies shall be permitted which is inconsistent with the laws of the State of Oklahoma for the protection of fish and game. The cost of constructing, operating, and maintaining the facilities authorized by this subsection shall not be charged to or become a part of the costs of the Waurika project.

SEC. 5. Expenditures for Waurika Reservoir, and the water supply aqueduct system, may be made without regard to the soil survey and land classification requirements of the Interior Department Appropriation Act, 1954 (43 U.S.C. 390a).

SEC. 6. The construction, operation, and maintenance of the Waurika reclamation project shall be subject to and in accordance with the provisions of the Act of July 1, 1932 (47 Stat. 564).

SEC. 7. There is hereby authorized to be appropriated for construction of the works authorized to be constructed by section 1 of this Act the sum of \$25,019,500, plus or minus such amounts, if any, as may be required by reason of changes in the cost of construction of the types involved in the Waurika project as shown by engineering indexes. There are also authorized to be appropriated such sums as may be required for the operation and maintenance of said works.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., August 1, 1961.

HON. CLINTON P. ANDERSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, Washington, D.C.

DEAR SENATOR ANDERSON: This responds to your request for the views of this Department on S. 114, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Waurika reclamation project, Oklahoma."

This Department cannot now recommend that any action be taken with respect to this measure.

A final report on the economic and engineering feasibility of the proposed Waurika reclamation project, Oklahoma, has not yet been completed. Until a planning report is adopted by the Department, reviewed by the affected States and interested Federal agencies under the provisions of the Flood Control Act of 1944, other applicable laws, and interagency agreements, and submitted to the President and to the Congress as required by law, we are unable to make any recommendations with respect to the enactment or provisions of the bill. It is suggested that your committee may wish to defer action on authorizing legislation until a planning report is submitted to the Congress.

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

Sincerely yours,

KENNETH HOLUM,
Assistant Secretary of the Interior.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., September 11, 1961.

HON. CLINTON P. ANDERSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, Washington, D.C.

DEAR SENATOR ANDERSON: This responds to your request for the views of this Department on S. 114, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the Waurika reclamation project, Oklahoma."

This Department recommends the enactment of this legislation, if amended as suggested hereinafter.

The bill, if enacted, would authorize the Secretary of the Interior to construct, operate, and maintain the Waurika project, which would be a multipurpose development to provide municipal and industrial water supplies, irrigation, flood control, and fish and wildlife and recreational opportunities. The cities of Lawton, Duncan, Waurika, Comanche, Temple, and Walters, all in south-central Oklahoma, and within a radius of about 20 miles from the proposed reservoir, have indicated their interest in development of this project and in

contracting for municipal water service. The intensity of their interest is indicated by the substantial contribution in funds and services toward the cost of the project investigations and preparation of the planning report.

The plan of development for the Waurika project contemplates as a Federal project (1) the construction of Waurika Dam and Reservoir, (2) the construction of pipelines and pumping facilities required to deliver water to the project cities, (3) the construction of canals and other facilities required to deliver irrigation water to 2,000 acres of presently dry farmland, and (4) the purchase and development of lands for development of fish and wildlife and recreation in conjunction with the reservoir.

The Waurika Dam and Reservoir site is located on Beaver Creek, a tributary of the Red River, about 6 miles upstream from the city of Waurika. The dam would be a rolled earth structure with a maximum height above streambed of 93 feet and a crest length of 14,500 feet. The initial storage capacity of the reservoir would be about 585,100 acre-feet, of which 294,800 acre-feet would be uncontrolled surcharge. The controlled storage capacity is tentatively allocated as follows: 40,000 acre-feet sediment and dead storage, 155,000 acre-feet conservation, and 95,300 acre-feet flood control. At the normal water surface elevation of 950 feet, which is the top of the conservation pool, the lake would have a surface area of 9,315 acres.

The lands proposed for irrigation lie in a compact area near the confluence of Beaver Creek and Red River. Irrigation facilities would consist of a stream-bank pumping plant capable of operating at a total pumping head of 86 feet to lift water from Beaver Creek and a concrete lined main canal with an initial capacity of 41 cubic feet per second. About 7 miles of main canal would be required along with a low-head relift pumping plant to serve a portion of the area. Necessary laterals, drains, and other structures are included in the plan and estimates.

In order to serve the project cities an aqueduct system involving three separate lines extending from a common outlet at Waurika Dam would be needed. Service to the city of Waurika would be through a gravity flow aqueduct 4.77 miles long with a design capacity of 5.8 million gallons daily. A second aqueduct would serve the cities of Temple, Walters, and Lawton and will be under pumping pressure provided by a pumping plant at the dam and one relift pumping plant. This line would be 36.4 miles long with an initial design capacity of about 26.1 million gallons daily. The third aqueduct would serve the cities of Comanche and Duncan and a large oil refinery. This line also would be under pressure from the pumping plant at the dam and one relift pumping plant. It would be 20.4 miles long and have an initial design capacity of about 18.5 million gallons daily.

The 95,300 acre-feet of flood control storage capacity in the reservoir, together with the surcharge storage capacity, would effectively prevent floods along Beaver Creek from the damsite to its confluence with Cow Creek and would substantially reduce flood hazards below that point. Operation of the flood control storage capacity would be in accordance with regulations prescribed by the Secretary of the Army.

Development of recreational facilities is proposed at and near the reservoir. Only minimum basic facilities including the land therefor as set out in the departmental planning report are recommended at this time for Federal construction. Additional recreational facilities not appropriate for Federal construction will be provided by a State or local agency.

The Department has under consideration the acquisition and development of additional lands and improved facilities for recreational development as proposed in our planning report. We suggest that any authorization for such additional purposes be delayed pending further study.

The reservoir will provide an increase in fishing opportunities of regional significance and waterfowl benefits of national significance. In order to achieve these benefits, specific costs for purchase in fee simple of lands within the maximum flood control pool totaling about 2,580 acres, and for other specific facilities are included in the total cost estimate. The total cost estimate also includes specific costs for the acquisition of about 3,500 acres of land needed to compensate for upland game habitat which will be inundated or impaired by the construction of the Waurika Reservoir.

It is our view that land should be acquired for fish and wildlife purposes in connection with Federal water-resource developments as an integral part of these projects and at project cost. This is contemplated by section 2(d) of the Fish and Wildlife Coordination Act (16 U.S.C. 662(d)). Lands for a national wildlife refuge in connection with Foss Reservoir, Washita reclamation project, Oklahoma, were purchased with project funds. The same procedure is being followed in the case of Seedskafee project, Wyoming, now under construction, and is contemplated in pending legislation to authorize the Mid-State reclamation project, Nebraska. The Congress, in the River and Harbor Act of 1960, authorized land purchases for a national wildlife refuge at the Jackson lock and dam project, Alabama, a Corps of Engineers project, using funds appropriated for civil works programs.

Based on prices as of April 1959, the construction cost of the Waurika project is estimated at \$25,019,500, which is tentatively allocated as follows:

Municipal and industrial water supply	\$15,856,500
Irrigation	4,044,300
Flood control	2,264,800
Fish and Wildlife	2,486,400
Recreation	367,500
Total	25,019,500

The average annual operation, maintenance, and replacement costs for a 50-year period of project operation are estimated to be \$168,710.

The investment costs allocated to municipal and industrial water would be repaid to the United States under existing policies. The repayment plan for the project contemplates that this cost will be repaid with interest over a period of 50 years. When adjusted to include interest during construction (\$680,300) and to exclude an allocated portion of the moneys already contributed by local interests (\$17,600) and the capitalized value of operation and maintenance costs of the reservoir chargeable to flood control and fish and wildlife (\$153,200), the total cost allocated to municipal and industrial water supply for repayment would be \$16,366,000.

Municipal and industrial water supply requirements during the first 10 years of project operation can be met, utilizing only about 30 percent of the storage capacity in Waurika Reservoir for that purpose. It is contemplated that use will be made of the provisions of the Water Supply Act of 1958 to defer the payment of interest charges for 10 years on that portion of the investment cost required to provide conservation storage capacity in Waurika Reservoir which will not be used for municipal and industrial purposes during that period. The amount which may be so deferred is limited to 30 percent of the project cost.

The construction costs allocated to irrigation is \$4,044,300. When this cost is adjusted to take into account credit for \$4,600 in funds already contributed by local interests and deducting \$42,000 of nonreimbursable costs for increased cost of constructing and prepayment of operating and maintaining special fish screens at the irrigation pump, the net irrigation repayment obligation is \$3,997,700. The repayment plan for reimbursable irrigation costs provides that over a 55-year period, all costs allocated to irrigation will be repaid without interest. During the initial 5 years, which is considered adequate as a development period, the irrigation water users would pay annual operation and maintenance cost, but would make no payment on irrigation construction costs. During the next 50 years, which is the irrigation repayment period, the irrigation water users would make annual payments within their calculated payment ability, meeting both operation and maintenance charges and payments on construction costs. After the municipal water users have fully repaid their allocated costs in the 50th year, they will continue their annual payments at approximately the same rate for another 5 years with net revenues from municipal water supply being applied on that part of the irrigation construction costs that is beyond the payment capacity of the irrigators. Under this repayment plan, the irrigation water users will pay about 25 percent of the reimbursable cost allocated to irrigation and continued payments by municipalities would repay the balance. Formation of an appropriate contracting entity, such as an irrigation district, under Oklahoma law, and execution of a valid repayment contract

covering irrigation costs would be prerequisite to initiation of construction of the irrigation works.

Irrigation service to lands or the Waurika project will be comparatively expensive, the irrigation allocation being approximately \$2,000 per acre. However, the lands are all of the highest quality, and their productivity under irrigation establishes their economic justification. The potential water users and the sponsors of a conservancy district are aware of the costs involved and have expressed their willingness to undertake the repayment obligation as set forth in the report.

In the area proposed for irrigation, there are about 300 acres of Indian lands held in trust or restricted ownership. As these lands are an integral part of the area and cannot conveniently be excluded without adversely affecting the engineering and economic feasibility of the irrigation distribution system, section 6 of the bill makes the inclusion of these trust or restricted lands subject to the provisions of the Leavitt Act.

Construction costs allocated to flood control, fish and wildlife and minimum basic recreational facilities are considered nonreimbursable in accordance with existing laws and policies.

The project is engineeringly feasible and economically justified. Average annual benefits from all uses based on a 100-year period of analysis are estimated to be \$1,220,900. Using only direct benefits, the estimate would be \$1,253,100. This unusual circumstance of total benefits being somewhat less than direct benefits results from the mechanics of benefit evaluation. The benefits related to municipal and industrial water supply are measured by the cost of the least costly alternative means of providing equivalent municipal and industrial water supply service. This, in effect, does not produce a true measure of municipal and industrial water supply benefits but rather a limitation on such benefits which, through interagency agreement, are claimed in project justification. As such, the benefits measured are considered as direct or primary benefits, and indirect benefits are not reflected. On the other hand, the uncompensated adverse effects from inundation of reservoir lands are identified as negative indirect benefits and have the net effect of reducing the overall positive benefits claimed for the project. Comparison of these annual benefits with the estimated annual project costs of \$886,500 results in benefit-cost ratios of 1.38 to 1 total benefits and 1.41 to 1 direct benefits. For a 50-year period of analysis, these ratios would be 1.34 to 1 and 1.38 to 1, respectively.

Section 2, subsection (e) of the bill provides that on the completion of payment of the water users' obligation together with the interest the water users will then have a permanent right to the use of that portion of the project allocable to municipal, industrial, and irrigation water supply purposes. In order to avoid any difficulty in the future as to the allocation of reservoir storage capacities among the purposes served by the project brought on by sedimentation we believe that the section should be amended in line 23 by striking the period and adding the following: "so long as the space designated for those purposes may be physically available, taking into account such equitable reallocation of reservoir storage capacities among the purposes served by the project as may be necessary due to sedimentation."

As clarifying amendments, we would recommend the following changes:

(1) On page 4, line 24, strike the final "the" and all of line 25 and insert the following: "a water users' organization the care, operation, and maintenance of".

(2) On page 6, line 11, insert the following after the word "game": "and the protection of the public health, safety, and welfare".

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

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

Sincerely yours,

STEWART L. UDALL,
Secretary of the Interior.

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

Estimated additional man-years of civilian employment	1st year	2d year	3d year	4th year	5th year
EXECUTIVE DIRECTION					
Executive.....	1	1	1	1	1
Clerical.....	1	1	1	1	1
Stenographic.....	1	1	1	1	1
Total, executive direction.....	2	3	3	3	3
ADMINISTRATIVE SERVICES AND SUPPORT					
Accountant.....		1	2	2	2
Budget.....		1	2	2	2
Clerical.....	3	5	10	10	10
Personnel.....		1	1	1	1
Property management.....		2	3	3	3
Total, administrative services and support.....	3	10	18	18	18
SUBSTANTIVE (PROGRAM)					
Engineering aids.....	10	30	52	52	32
Engineers.....	5	17	27	27	17
Total substantive.....	15	47	79	79	49
Total estimated additional man-years of civilian employment.....	20	60	100	100	70
Estimated additional expenditures:					
Personal services.....	\$149,000	\$420,000	\$650,000	\$650,000	\$460,000
All other.....	360,000	1,580,000	7,350,000	8,350,000	4,850,000
Total estimated additional expenditures.....	500,000	2,000,000	8,000,000	9,000,000	5,310,000

EXECUTIVE OFFICE OF THE PRESIDENT,
 BUREAU OF THE BUDGET,
 Washington, D.C., March 18, 1961.

Hon. CLINTON P. ANDERSON,
 Chairman, Committee on Interior and Insular Affairs,
 U.S. Senate, Washington, D.C.

MY DEAR MR. CHAIRMAN: This is in reply to your letters of January 17, 1961, and to your letter of February 14, 1961, requesting the views of the Bureau of the Budget on S. 14 and S. 26, bills to authorize the Secretary of the Interior to construct, operate, and maintain the Dixie project, Utah, and for other purposes; S. 103, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Auburn-Folsom South unit, American River division, Central Valley project, California, under Federal reclamation laws; S. 114, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Waurika reclamation project, Oklahoma; S. 308, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the upper division of the Baker Federal reclamation project, Oregon, and for other purposes; and S. 892, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Arbuckle reclamation project, Oklahoma, and for other purposes.

The Department of the Interior has not submitted reports on the projects proposed for authorization in these bills to the Bureau of the Budget under procedures set forth in Executive Order No. 9384. Until reports are received, together with the views and comments of the concerned States and Federal agencies, the Bureau of the Budget has no basis for appraising the merits of the proposed improvements.

Accordingly, it is recommended that action on S. 14, S. 26, S. 103, S. 114, S. 308, and S. 892 be deferred until a report is submitted to the Congress in accordance with established procedures.

Sincerely yours,

PHILLIP S. HUGHES,
 Assistant Director for Legislative Reference.

Senator JACKSON. This hearing was called at the express request of Senator Robert S. Kerr and Senator Monroney to hear testimony on this project from prominent officials and citizens of the area who have come to Washington to testify on the bill.

Officials of the Bureau of Reclamation are also present to furnish any additional information or answer any questions. However, it is not the intention of the chairman to have the complete testimony of the Department presented today.

We will hear first from Senator Monroney and then Senator Kerr. I note that Congressman Wickersham is here. We will hear from the gentlemen in that order.

Senator Monroney, will you come forward and have a seat?

**STATEMENT OF HON. A. S. MIKE MONRONEY, A U.S. SENATOR
FROM THE STATE OF OKLAHOMA**

Senator MONRONEY. Thank you, Mr. Chairman.

First, I want to express our appreciation on behalf of Senator Kerr and myself and Congressman Wickersham for the committee giving us the privilege of presenting this testimony on this very important subject, the Waurika reclamation project. I know how crowded your days are with the closing of Congress and your willingness to hear these leading citizens of southwest Oklahoma on their perennial problem of the need for controlling the floods in this Beaver-Cow Creek area as well as developing a very worthwhile and effective reclamation project is deeply appreciated by the three of us.

When I first came to Congress in 1939 this was a problem. Recurrently, sometimes as many times as two or three times a year, the city of Waurika and its surrounding territory is inundated by flash floods which destroy life and thousands of dollars of property each year.

Senator Kerr and myself very repeatedly had this matter under advisement with the Corps of Engineers and also with the Reclamation Bureau.

After more than 10 years of work on this matter of controlling these floods and to put this water to beneficial use, the Reclamation Bureau has come up with a very sound program that I feel meets the unanimous needs of the people in this area.

I would be happy to yield to my distinguished senior Senator and then after he finishes, if it is all right with him, I would like to introduce the witnesses that will appear here.

I do not intend to impinge on their time because they have come a long distance, and I would like to ask permission to present a detailed statement at your next hearing.

Senator JACKSON. Fine. Senator Kerr, we are very pleased to have you here this morning, both you and Senator Monroney. We know of your great interest in this.

Do you have a statement?

STATEMENT OF HON. ROBERT S. KERR, A U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator KERR. I have a statement that I would like to put in the record. I would like to call attention briefly to these three facts:

First, these are among the best people in the world and they are deeply dedicated to this project which is so significant to them and is of such a great need.

Second, it is a project of about \$25 million, \$20 million of which will be repaid by water users, most of it with interest.

Next, it will make a great contribution to an area in Oklahoma, and I guess if I use the term "needing a shot in the arm economically," it would be one that would not be the first time the committee had heard it and one which would be understood.

We will be very deeply grateful to the committee for their consideration of such action as they feel the merits of it warrant.

I am happy to join Mike in this and present our witnesses.

I appreciate deeply you gentlemen taking the time to hear us.

(The statement referred to follows:)

STATEMENT OF SENATOR ROBERT S. KERR IN BEHALF OF THE WAURIKA PROJECT

Mr. Chairman, I am happy to be here today with other Oklahomans in behalf of the Waurika project.

This project has the backing of the local communities, the State, the Federal departments, and the President. I know of no one who is not for it.

And why shouldn't everyone be for it? It has a benefit-cost ratio of 1.4 to 1, according to the Bureau of Reclamation economists whom I have discovered to be about as conservative as any group with whom I have come in contact.

The project will cost, in round figures, \$25 million. It will provide flood control, irrigation, municipal water supply, wildlife and recreational benefits. Four-fifths, or \$20 million, will be repaid by water users. The other \$5 million will be for flood control, fish and wildlife, and recreation.

The Secretary of Labor has reported that this project will provide badly needed employment opportunities.

The Governor of Oklahoma said: "We cannot overemphasize the importance and need for the immediate construction of the Waurika project as planned in your report."

While I was Governor in 1943-47, and since, I have been made aware of the need for this project. Beaver and Cow Creeks have caused the evacuation of Waurika and hundreds of farm homes by devastating floods time and time again. But during the same span of years, each of the project cities has been forced to curtail municipal water use because of drought. The farmers in the flood plain have had crops ravaged by both flood and drought and, on more than one occasion, both have happened in the same year.

Mr. Chairman, we in Oklahoma know that our future economy depends upon the development of our water resources, to provide the raw material, water, for industry and employment opportunities, to provide the same material for ever-increasing domestic consumption, and to provide thirsty acres with moisture for crop production.

We urge your favorable consideration of this project. We have a great hope and confidence that your committee will be able to report this bill out so that it may have favorable action by the Senate this session.

I am grateful for your courtesy in arranging this hearing, and for your favorable consideration of this worthy project which is so greatly needed.

Senator JACKSON. Congressman Wickersham, would you like to make a statement at this time before we hear the other witnesses?

STATEMENT OF HON. VICTOR WICKERSHAM, A REPRESENTATIVE
IN CONGRESS FROM THE STATE OF OKLAHOMA

Representative WICKERSHAM. If I may just stand, Senator Jackson, and make mine brief, I should like to have permission to file a printed report.

I will make a very brief statement.

First, I would like to compliment Senator Kerr, who has worked on this so hard, even back when he was Governor, and particularly the former head of the planning and resources board, his able assistant, Don McBride, and Senator Monroney who has worked on it even when he first came to the House and then in the Senate.

Senator KERR. Even before he came to the Senate.

Representative WICKERSHAM. That is right.

I would like to call particular attention to the work that has been done by the planning and resources board, and the Governor of Oklahoma, and Jim Bullard, who represents the group of six areas as a spokesman, the officials from those various areas, including those who are here this morning.

Personally, I have been down there twice when we have had as many as 400 families routed from this area by heavy floods.

I flew by plane several years ago twice and then went down in a car.

This is an area which is certainly worthy of consideration and I am so happy that the Secretary of the Interior has approved it and that the Bureau of the Budget approved it. I trust that this committee will approve it.

I hope that we can get the House to consider it. The House Interior and Insular Affairs Committee adjourned a few days before the Budget made its final report. This is divided into the amount that Senator Kerr has mentioned. The \$25 million is divided into \$15,856,500 for municipal and industrial water supply, \$4,044,300 for irrigation, \$2,264,800 for flood control, \$2,486,400 for fish and wildlife, and \$367,500 for reclamation.

Mr. Chairman, that completes my statement.

I am happy to appear here with our two able Senators and the gentlemen from these various areas.

Senator JACKSON. Thank you, Congressman Wickersham. We are very pleased to have your statement and know of your interest in this project.

(The prepared statement of Congressman Wickersham is as follows:)

STATEMENT OF HON. VICTOR WICKERSHAM, A REPRESENTATIVE OF THE SIXTH
CONGRESSIONAL DISTRICT FOR THE STATE OF OKLAHOMA

Mr. Chairman, and members of the committee, first I wish to compliment Senators Bob Kerr and Mike Monroney, the local civic-minded constituents, the Bureau of Reclamation officials including Mark Barclay, Floyd Dominy, and others. I wish to express my appreciation to you for scheduling this hearing on S. 114, introduced by Senators Kerr and Monroney, giving us an opportunity to testify in support of the Waurika project, Oklahoma. A similar bill, H.R. 2084 has been introduced in the House by me, and hearings on that bill have already been held by the House Subcommittee on Irrigation and Reclamation. The principal purpose of Waurika project is to provide a much needed new supplemental municipal and industrial water supply to an important region of western, south-central Oklahoma. It will also provide flood control for the

protection of lands and the town of Waurika in the Beaver Creek Valley. The project also makes it possible to develop irrigation on a small but highly fertile area; it will provide fish and wildlife benefits and give water-type recreational opportunity to an area sorely lacking in this kind of playground.

I wish to point out, Mr. Chairman and members of the committee, that the district which I represent is an area that is plagued with all sorts of water problems. Good water suitable for municipal and industrial use is scarce and hard to develop in this section of my State.

We hope to get enough water from the Waurika Reservoir to take care of the future needs of Lawton, Walters, Temple, Waurika, Comanche, Duncan, and an oil refinery near Duncan so that these municipalities can thrive and grow over the next half century without hindrance or fear of water shortage. In all, these communities had a 1960 population of about 90,000 persons. Lawton is not only an important community in its own right but is the site of Fort Sill, the Artillery School of the U.S. Army, where important missile training work is now carried out. Fort Sill, on many occasions in the past, has played an important role in our Nation's defense. Its total water supply is provided by the city of Lawton. Recently, the Halliburton Co., a world leader in oil well servicing, located at Duncan, announced a program of industrial expansion which, we believe, will insure the growth of that municipality, provided adequate water supply and other facilities are assured. All the communities have experienced dire water shortages in the past, and although Lawton and Duncan have recently developed small supplemental water supplies that will help meet their immediate needs for a short time, the Waurika Reservoir is the only long-term solution available to us.

So far, I have been talking about the need for more water, particularly during periods of drought. There is another side to the coin, and that is floods. Gentlemen, I don't believe there is another section of Oklahoma that has as chronic a flood history as the Beaver Creek Valley. Almost every year, floods sweep down the valley, overflowing farmlands and flooding large sections of Waurika. I have seen the people of the flooded section packing and carrying out their belongings in the face of a flood. In some years, this has happened three or more times, causing economic loss and suffering. I certainly hope that you members of the committee will carefully consider this important purpose of the project.

It is planned that water surplus to the needs of the municipalities, which would be provided by the project, will be used for irrigation of a small area of very fine lands downstream near the village of Ryan. All of these lands are now farmed, and their development does not bring new lands into production. Their irrigation will stabilize production and increase yields of crops that are now grown, but it is our hope that irrigation will make possible, and stimulate, production of high-value specialty crops, such as garden truck. It will permit crop diversification.

We all know that there is an ever-growing demand for increased opportunities for outdoor recreation. The Waurika project will provide this through fish and wildlife development and recreational facilities at the reservoir site.

Mr. Chairman, I urge that the committee consider and favorably report on the bill which is before you. The project is needed, and local interests have assured me of their interest and their intention to participate in its development if it is authorized. About 80 percent of the total cost of the project will be repaid by participating local interests. I am sure their acceptance of the project is of interest to this committee.

Senator MONRONEY. May I introduce en bloc, Mr. Chairman, these gentlemen who will testify and then you can call them as witnesses? Some of them will probably want to submit statements for the record and others will probably want to have oral testimony.

With your permission, I would like to introduce the men who have carried this project from the fledgling days some 20 years ago or more and have never given up on it and now who come before you for the final necessary action which we hope could be done in this Congress to speed up by more than a year the final starting of this project.

I would like to present the Honorable Jim Bullard, president of the Beaver-Cow Creek Watershed Development Association of Dun-

can, Okla. Mr. Bullard is one of the senior members of our State legislature.

Mr. Frank Raab, executive director, Oklahoma Water Resources Board, of Oklahoma City. Mr. Raab has for some 20 years been an executive of our water resources board and affiliated agencies.

Mr. Don Morrison, the executive vice president, Beaver-Cow Creek Watershed Development Association, Waurika. Mr. Morrison is one of the leading editors of southwest Oklahoma.

We have the distinction of having most of the mayors who are concerned with water supply for their cities, and a portion of this will be devoted to human uses.

We have the Honorable Wayne Holden of Duncan, Okla., the mayor of that city.

We have the Honorable Wayne Gilley, mayor of Lawton, Okla., the site of Fort Sill, which the chairman has visited several times.

We have Mr. Milton Keating, the executive secretary of the Lawton Chamber of Commerce, who has always been active in this project.

We have Mayor Bill Sharp of Comanche, Okla., here, who is also affected by this near neighborhood.

We have the distinguished city manager of Walters, Okla., Mr. Ferrell Phillips, attending.

We have Mr. Dave Richardson of Temple, Okla., one of the leading citizens of that area and one of the builders of southwest Oklahoma.

We have the city manager of Waurika, Okla., the city that has been the hardest hit by these recurrent floods, Mr. Harvey Elliott.

I believe, Mr. Bullard, as president of the Beaver-Cow Creek Watershed Development Association, will introduce your witnesses in the order, if you will, please, sir.

Mr. BULLARD. I believe they come in the order that you have presented them.

Senator MONRONEY. Yes, sir.

Senator JACKSON. Mr. Bullard, do you want to make your statement first?

Mr. BULLARD. Yes, sir.

Senator JACKSON. It might expedite matters if you read your entire statement.

Does your statement outline the project?

Senator KERR. I am sure that Mr. Bullard will set the right example there. He is a man who is a very forceful speaker and capable of putting much in limited words.

Senator JACKSON. That is a common characteristic of Oklahomans.

Senator KERR. It is not a situation of which we are entirely captive nor with which we are entirely unfamiliar.

STATEMENT OF J. M. BULLARD, PRESIDENT, BEAVER-COW CREEK WATERSHED DEVELOPMENT ASSOCIATION

Mr. BULLARD. I might say, gentlemen, if I have any of that I acquired it at the feet of our senior Senator when he was Governor and I served under him in the legislature.

Mr. Chairman and members of the committee, my name is J. M. Bullard. I now live in Duncan, Okla., and am in business in that city. I am president of the Beaver-Cow Creek Watershed Develop-

ment Association. I was raised near Waurika in Jefferson County, Okla., and I am therefore well acquainted with that section of my State. I have served two terms as county treasurer of Stephens County. I am now a member of the House of Representatives of the Oklahoma State Legislature, having served in that body for more than 20 years.

I am presently a member of the water committee of the house, a State legislative committee that considers problems and legislative matters on a State level that are similar, in some instances, to water resource problems that are considered by your committee. I have served as speaker of the house, also as floor leader, and as chairman of the Legislative Council of Oklahoma. I am a member of the board of directors of the Oklahoma Reclamation Association.

My purpose at this hearing is to summarize for you the testimony you are to hear from representatives of the various parts of our district and to present you with a general picture of the area we serve. Our needs for the Waurika project should be amply demonstrated in the testimony to come.

Our association was organized 6 years ago, in June 1955, to explore the possibilities for use and control of the waters of Beaver Creek and Cow Creek, and to promote their development. Ever since that time, all of us have been actively working to secure such a development.

As a result of these efforts, and with the cooperation of the Federal and State Governments, the feasibility report on the Waurika project has been completed and a bill for authorization of the project, S. 114, is now before you for consideration. After the field draft of the report was reviewed by the Beaver-Cow Creek Watershed Development Association and the member cities that would be affected, our association and the member cities reached a firm decision that we would endorse the project and sponsor its development in accordance with the report of the Department of Interior. We recognize that upon authorization of the project, it will be incumbent upon us to carry out certain actions which are necessary to secure its ultimate construction. One important action already initiated is the formation of the Waurika Project Master Conservancy District. The first petition for formation of the district was filed March 29 this year, in the district court of Jefferson County, which court has jurisdiction, and signatures to the petition by all member project cities will be filed with the district court at an early date.

The Waurika Project Master Conservancy District is being formed under Oklahoma statutes, and I might add that these particular statutes were amended and revised during the last session of the legislature. It is now possible to work out more satisfactory repayment contracts between the conservancy district and the U.S. Government. Also, member cities of our association have requested the State water resources board to make the necessary hydrographic survey of Beaver Creek, so that we will be in a position to secure a final adjudication of the water rights of the project, if and when needed. I am giving these details to show your committee that we are mindful of our own responsibilities and that we are preparing ourselves to participate in the project should the Congress, in its wisdom, authorize construction. It is significant, I believe, that our association has contributed more than \$28,000 in funds and services to assist and to expedite the investi-

gations of the Bureau of Reclamation. These funds were secured by contributions from chambers of commerce and by passing the hat up and down the streets of some of our towns. We believe that these contributions and activities on the part of our association and the project cities manifest a great deal more than declaratory support. They are substantial proof that we recognize our problems and that we are willing to carry out our responsibilities in the future.

The six project cities participating in formation of the Waurika Project Master Conservancy District are Lawton, with a 1960 population of 61,697 (not including Fort Sill, one of the major training centers for the U.S. Army); Walters, 2,825; Temple, 1,282; Waurika, 1,933; Comanche, 2,082; and Duncan, 20,009. All are in Oklahoma, in 4 adjoining counties with a combined population of 145,016. These cities were crucially short of municipal water during the drought of the 1950's, and had suffered numerous water shortages during previous drought periods. All six cities share this common problem of finding additional water. Many of them have expended considerable funds in drilling more wells in search of adequate ground water supplies, only to find that ground water was unavailable, or, if available, was of unsatisfactory quality.

Several of these cities have an additional water problem—one of too much water during heavy rain periods that sometimes occur in Oklahoma—and you cannot tell just what time of the year they will occur. These rains, amounting up to several inches in a matter of hours, produce flash floods on the streams which overflow the farmlands and communities and cause tremendous damage. So the losses occur in two ways—loss through flood damage, and loss of water which could be beneficially used during dry periods.

Waurika Reservoir will provide us the means of curbing these losses. It will also produce some valuable byproducts in the way of recreational opportunities and enhancement of fish and wildlife.

Mr. Don Morrison, executive vice president of the Beaver-Cow Creek Watershed Development Association, has a statement which will give you a picture of the flood problems as seen by residents of the area. I also have letters, included as attachments, that point out the importance of recreation and fish and wildlife aspects of the project.

The reservoir will control a watershed of 562 square miles. Estimates show that its storage will supply adequate water for the six cities and the DX-Sunray Refinery near Duncan for the next 50 years. It will provide irrigation water for 2,000 acres of rich bottomlands downstream from the reservoir.

I believe it is very significant that the reservoir will provide recreation benefits on a regional and interstate basis in an area where recreational facilities are greatly desired. It will also provide fish and wildlife conservation benefits in a region woefully inadequate in this regard.

The plan worked out for Waurika project calls for construction of the reservoir and related works on Beaver Creek near Waurika, pipeline systems extending to the six cities, and an irrigation works.

Estimates of water requirements from the project have been arrived at by the various cities and users, and are in agreement with estimates of the Bureau of Reclamation. The general water supply situation

in the various project cities will be described by the city officials of the various municipalities in subsequent testimony, so I will not pursue it further here.

I want to emphasize what I'm sure this committee, in its broad experience, recognizes as valid reasons why most communities resort to temporary stopgap solutions when they are faced with water problems. Under local financing methods, they resort to the stopgap measures, and, as a result, the problems crop up every few years.

Here are a few of the reasons:

1. The marked increase in interest rates during the past year or so gives rise to estimates by local brokers that self-liquidating bonds of the type required would have to bear approximately 6 percent on the current market.

2. The normal term of bonds of this class is 25 years. This, together with a city's investment in a filtration plant or terminal storage facilities, for example, makes the obligation on a 25-year basis extremely difficult to repay and increases the cost of water beyond the point of maximum use.

3. The cities in question, by and large, face obligations for various existing improvements to the extent that sale of additional bonds might be difficult. Furthermore, to add a quick payout for a facility, the ultimate benefit of which will extend over 100 years, would create an unjust and burdensome hardship on present users, and a gratuitous benefit to those who use the facility in the future.

4. In addition, several of the cities may need to make additions to their filtration plants and to continue to satisfy the constant demand for extension of their distribution systems. Enlargement in the sewage systems of the communities is a need that arises at frequent intervals.

Our communities are confronted with a choice of solving the water problem on a hand-to-mouth basis or by seeking some form of long-term financing and solving their water problems with an eye to the future. Through the cooperation of several communities and the Federal Government, it is possible to develop our natural resources at a cost that we are able and willing to pay. It also insures optimum development of our resource potentialities.

Gentlemen, I want to point out that under this plan of development, almost 80 percent of the total investment cost, plus interest, will be returned to the Federal Government.

The Department of Interior report, which you have before you, shows that the recreation and fish and wildlife values of the Waurika Reservoir are very noteworthy. I'm sure you will understand their importance when you realize that within 3 hours' driving distance of the reservoir reside one-third to one-half of the population of Oklahoma, also a large area of Texas, and that Oklahoma is an outdoors-conscious State, as evidenced by the fact that there are 600,000 residents who have fish and game licenses.

We feel that the impact of this lake, if properly managed, will be felt far beyond the borders of Oklahoma. The site is conveniently situated with respect to access from major highways. The lake will lie in wooded hill country which will furnish beautiful surroundings for a spring or autumn vacation, and it is to be expected that it will be utilized to the fullest by the population of Oklahoma and Texas and other States.

We have purposely left out of this discussion the technical phases of the presentation. These will be given by other members of our group, who will describe in more detail the proposed Federal participation, the progress we have made and are making in legal matters, and the water situation in the project cities.

Let me make one final point about the widespread acceptance of this project. It has been endorsed by the Governor of the State of Oklahoma and by various State and Federal agencies. In addition to the sustained support of our own association, it has received the formal endorsement of the Oklahoma Reclamation Association, National Reclamation Association, Red River Valley Association, and the North Texas and Southern Oklahoma Area Development Association.

The citizens of our district are grateful to your committee for giving us the opportunity to state our case to you. It is of the utmost importance to us and we are thankful for your consideration.

Senator JACKSON. Thank you, Mr. Bullard, for your very well-prepared statement.

This is primarily a bill to provide for municipal and State water uses. I realize there is a small amount of irrigation and flood control, but where are they getting their water now?

Mr. BULLARD. From surface waters and wells. I believe one or two of the cities have some wells.

Senator JACKSON. And are the communities that are contemplated to be served by this authorization short of water now?

Mr. BULLARD. They are short on a long-term basis. For example, in Duncan at the present time we have a sufficient supply. We have had good rainfalls through the year in Oklahoma this year, but we do not have any future supply.

Senator KERR. In 1955, 1956, 1957, every one of these communities had been rationing water.

Mr. BULLARD. Yes.

Senator JACKSON. You do not have a reservoir system now?

Senator KERR. They have quite a reservoir system for Lawton. From Fort Sill, Lawton has been growing. It has grown from a city of 34,000 in 1950 to where now it is 61,000. It is the third largest city and it is moving ahead. It is tremendous, and the chain around their neck is an inadequate dependable water supply.

As I say, every community that you have heard about during those 3 years at some time was rationing water.

East of this section of the city of Ardmore, a city of 16 or 20 thousand people, people were paying 15 and 25 cents a gallon for drinking water in 1956.

Senator JACKSON. Of course, this is getting to be more and more a problem throughout the country. The water table is being lowered and part of the problem here is whether the Federal Government is going to get into the municipal water business.

Mr. BULLARD. Of course, this is a multiple-purpose project.

Senator JACKSON. We started it.

Mr. BULLARD. I should add that Duncan does have reservoirs, two, from which we have been rationed and are short on. We are in the process of trying to get more water.

Senator JACKSON. Any questions? Senator Kuchel?

Senator KUCHEL. How much territory is going to be included in the conservancy district, Mr. Bullard?

Senator KERR. There are six hundred and some square miles in the drainage area.

Mr. BULLARD. Five hundred sixty-two square miles in the watershed area.

Senator KERR. Most of which is in the conservancy district, or will be.

Mr. BULLARD. I suppose most of it will be.

I yield for that question to Mr. Barclay.

Senator JACKSON. Identify yourself for the record.

Mr. BARCLAY. M. G. Barclay, area engineer of the Bureau of Reclamation.

The drainage area above the dam site is 562 square miles. The conservancy district itself will involve the cities, participating cities, in the irrigation district but will not involve the rural areas in between.

It is just contiguous to city boundaries.

Senator KUCHEL. Will the rural areas in between be a part of the district?

Mr. BARCLAY. No, sir. The conservancy district law in Oklahoma provides that it is a binding organization that will bring several different entities into one organization and each individual entity would be the city of Lawton, the city of Duncan, and so forth. They are tied together with a legal type of instrument and it does not include the rural areas in between.

Senator KUCHEL. How many acres do you contemplate will receive irrigation water?

Mr. BARCLAY. 2,000 acres.

Senator KUCHEL. Where are they located?

Mr. BARCLAY. They are about 20 miles downstream on the terrace adjacent to the Red River right in this area, sir.

Senator KUCHEL. What kind of crops do you grow on there?

Mr. BARCLAY. They are the general crops in that area that are grown there now. They are feed crops, alfalfa, corn, maize, cotton, and a little bit of truck, very little truck. There is an expansion of truck crop into that area.

Mr. BULLARD. And peanuts.

Mr. BARCLAY. Peanuts; yes, sir.

Senator KUCHEL. We have had from time to time in the Senate some of our colleagues objecting to reclamation projects all across the country unless the legislation authorizing the projects would include language relative to the use of new properties for the purpose of growing crops under the CCC program.

While, as my friend, the chairman, has suggested, this does not seem to be one of the great issues involved in this legislation, I suppose there would be no objection, would there, if an amendment similar to—

Senator JACKSON. We are putting them in all irrigation bills, so it will be in there, regardless. We have not made any exceptions, to my knowledge, have we?

Senator KERR. I did not think we put them in the small ones.

Senator JACKSON. I am just advised that we have not put them in the real small ones, 2,000 acres.

Senator KERR. This is one.

Senator JACKSON. That is a different situation.

Senator KUCHEL. Yes.

Senator KERR. I hope that it does not develop into a situation where some of the great members of this committee would feel that it was heavily overloaded with water supply and another fine group on the committee feel that the fault of it was that it would be increasing the area to be irrigated.

I would hope it might find that fine, delicate line of balance that would be acceptable.

Senator KUCHEL. I share your minimal apprehension and we will seek to eliminate any cause for it.

Senator KERR. Thank you.

Senator JACKSON. Senator Hickey?

Senator HICKEY. Mr. Bullard, I am particularly interested in the program you present because we have the same basic problem in our State. We have not gone as far as you folks have in developing it, and I hope to use your plan here as a format in our State to set it up. Because you have discussed some municipal finances, I suspect one of the real important things here is the fact that most of these cities and towns currently carry pretty heavy water bonds as it is, the bonds required to drill your wells. Do you have the figures on those?

Mr. BULLARD. Each town has the figure, Senator, and they will submit them. The mayors or representatives of the mayors of each of the six cities have their financial statements.

Senator HICKEY. I would suspect that they are probably right up pretty nearly to your constitutional limit.

Mr. BULLARD. Yes, sir, I would say they run from 25 to 30 percent about the breaking point.

Senator HICKEY. I notice you indicate that the municipal bond market currently is about a 6-percent market for some of your stuff.

Mr. BULLARD. That is where there would be self-liquidating bonds, Senator.

Senator HICKEY. Revenue bonds generally?

Mr. BULLARD. Yes, revenue bonds.

Senator HICKEY. It is not that high, is it, 6 percent?

Mr. BULLARD. They are self-liquidating revenue bonds in the instance that we are referring to here.

Senator JACKSON. Maybe in your particular community, but that is way above the average interest rate on revenue bonds, I would think.

Mr. BULLARD. It would depend on the kind.

Senator JACKSON. What is your classification? What is your rating on those bonds?

Mr. BULLARD. I am not in a position to give you that. I do not know. It might be that someone else would have that information. However, if we had the regular funding bond with the full face and credit of the municipality behind it, or course we would come down.

Senator HICKEY. But you have used that. That is the question I want to get to.

Mr. BULLARD. We used that and this would now be on the basis of a self-liquidating bond, or finance bond.

Senator JACKSON. What you are saying is that you have used up your constitutional right for general obligation bonds?

Mr. BULLARD. Right.

Senator JACKSON. So you have to resort to revenue bonds and they bear a higher rate of interest because the change of payout looking to revenue alone is not always good in some of these communities. Is that not about it?

Mr. BULLARD. It is not considered as good an investment as the others, and you have to make the interest attractive, and, of course, they are of short duration, approximately 25 years.

Senator HICKEY. Do you have a State agency that attempts to set the water rates in your municipalities, or is it open ended?

Mr. BULLARD. It is set by each municipality.

Senator HICKEY. That is the way it is in ours.

I suspect that they are probably carrying the peak burden at the present time.

Mr. BULLARD. Yes, sir, most of the cities are.

Senator HICKEY. When you get into drilling wells, I know what you are up against.

Mr. BULLARD. Drilling wells or building reservoirs, either one.

Senator HICKEY. I would suspect that the bonds that will be required to issue these revenue bonds would be of what duration?

Mr. BULLARD. Well, 25 years approximately would be the limit.

Senator KERR. Are you addressing the question to what they would give back to the Government?

Senator HICKEY. Yes.

Mr. BULLARD. That would be on a 50-year basis.

Senator JACKSON. Fifty-five, I think.

Senator KUCHEL. Yes.

Mr. BULLARD. Fifty-five.

Senator KUCHEL. There is an initial 5-year period.

Senator JACKSON. There is a 5-year period.

Mr. BULLARD. That is right, and then 50 makes 55.

Senator JACKSON. Completed in 55 years?

Mr. PALMER. I am William I. Palmer, Assistant Commissioner of the Bureau of Reclamation.

Senator JACKSON, the proposed payout in this is 50 years for the municipal and industrial allocation. Then municipal and industrial users would continue to pay up to an additional 5 years to pay out their assistance to irrigation.

This in turn would be compensated on the other end by a 5-year development period for irrigation.

In other words, you have a 50-year payout period for municipal and industrial and a 50-year payout period for irrigation after a 5-year development period or a 55-year period for that portion allocated to irrigation.

Senator JACKSON. However, there is no development period, then, for the municipal part of it?

Mr. PALMER. The only thing that might be construed as being vaguely similar to that is that the Water Supply Act formula of 1958 would be applied to give them interest-free loading for a period of up to 10 years, but the 50-year payout period would apply straight through there. There is no new development period as such.

Senator KERR. That interest-free period is for such time as they are not using water.

Mr. PALMER. That is correct.

Senator KERR. Their interest begins when they start to use it.

Mr. PALMER. As soon as they start using about a third or a little over a third they begin to pay interest on the total allocation of municipal-industrial use.

Senator JACKSON. What is the interest rate?

Mr. PALMER. It would be on the basis of the water supply formula which now is 2.7 about—2.74

Senator KERR. It is determined by the overall average of the Government's long-term bonds.

Senator JACKSON. The Government's cost of servicing the debt.

Senator KERR. Of the Government's long-term bonds

Senator JACKSON. We have Senator Kerr who is the expert on bonds here for the Finance Committee. What is the current overall average rate now, Senator Kerr?

Senator KERR. On the long-term bond?

Senator JACKSON. All told, everything. What are we short and long; do you know?

Senator KERR. Something under 3 percent.

Mr. PALMER. The last certification from the Treasury is 2.742.

Senator JACKSON. Of course, it is going up all the time as we bring in the long term.

Senator KERR. You remember last year you gentlemen put an amendment on the Norman project bill which changed the interest rate on the upper Colorado project, as I remember, which had been authorized on a much higher interest rate basis than had been authorized on a much higher interest rate basis than was provided in the 1958 law. That bill last year carried an amendment for your program on the upper Colorado project. It conformed to the interest rates that are in this bill.

Senator JACKSON. Senator Hickey, excuse me.

Senator HICKEY. Just one more question. I suspect, Mr. Palmer, you can best answer this.

I take it from here there is approximately 20 percent non-reimbursable.

Mr. PALMER. That is approximately correct.

Senator HICKEY. Is that allocated to wildlife?

Mr. PALMER. It is allocated to flood control, and fish and wildlife, and recreation. There are three functions that are nonreimbursable.

Senator HICKEY. Thank you. I have no further questions.

Senator JACKSON. Senator Burdick?

Senator BURDICK. Mr. Chairman, I am happy Mr. Palmer gave that explanation on the 55-year payout because on the other side of the Capitol they are pretty conscious of 50 years. Does this arrangement square with reclamation law?

Mr. PALMER. This would square with reclamation law. Bear in mind that each specific project would be separately authorized, but it does give you the 50-year concurrent payout principal after the development period. With the Colorado Storage Act, for example, many of the recent enactments of Congress give that interpretation or that latitude.

Senator BURDICK. That is all.

Senator JACKSON. Do you contemplate taking over your operation and maintenance, the conservancy district?

Mr. BULLARD. Yes, sir.

Senator JACKSON. So you will be doing that?

Mr. BULLARD. Yes, sir. We will probably have contracts with our State fish and wildlife, of course, as part of it, but the conservancy district will operate it.

Senator JACKSON. And they will handle the irrigation and all of it?

Mr. BULLARD. Yes, sir.

Senator JACKSON. As well as the municipal and industrial uses?

Mr. BULLARD. Yes, sir.

Senator JACKSON. All right, sir. Thank you.

Senator KUCHEL. Mr. Chairman.

Senator JACKSON. Senator Kuchel.

Senator KUCHEL. Simply for the record, in the bill, Mr. Bullard, on page 4, line 19, the subsection reads as follows:

Upon the completion of the payment of the water users' construction cost obligation, together with the interest thereon, the water users shall have a permanent right to the use of that portion of the project allocable to municipal, industrial, and irrigation water supply purposes—

which is something in which the Senator from California wholeheartedly concurs.

Just so there may be no question, however, Secretary Udall has suggested that there be added to that section the following language, striking the period and inserting the comma:

so long as the space designated for those purposes may be physically available, taking into account such equitable reallocation of reservoir storage capacities among the purposes served by the project as may be necessary due to sedimentation.

I assume there is no objection to that by the people of Oklahoma?

Senator KERR. There would be no objection to that language.

Senator KUCHEL. All right.

Senator JACKSON. Thank you, sir.

Any further questions?

(Mr. Bullard presented the following communications for the record:)

COTTON ELECTRIC COOPERATIVE,
Walters, Okla., April 25, 1961.

HON. JAMES M. BULLARD,
State Representative, P.O. Box 369, Duncan, Okla.

DEAR MR. BULLARD: This is to express our appreciation for your efforts in behalf of the Waurika Project Master Conservancy District and to offer our endorsement and support of this project in any way possible.

For the past 23 years we have been providing electric service to the rural areas of the territory included in this district. During this time we have observed the development of conditions and circumstances which, in our opinion, makes the construction of the Waurika Reservoir extremely essential to the future social and economic welfare of this section of Oklahoma.

The control and conservation of water has long been recognized as the key to our economic development. In addition to insuring a dependable water supply for the municipalities in the district, this project would provide the foundation for industrial development in rural areas, which Congress has recognized as being vitally important to the national welfare.

Our small farm operators and other underemployed people must be afforded the opportunity to supplement their income by part-time, off-the-farm employment, or continue their migration to already overcrowded industrial areas. The Waurika Reservoir, together with the rural redevelopment program now being favorably considered by Congress, should provide the necessary incentives for

the location of new industries in this area and thus halt the flow of our population to urban areas.

We again wish to thank you for your interest in this project and to assure you our wholehearted support.

Yours very truly,

DON DAGE, *Manager.*

DUNCAN CHAMBER OF COMMERCE,
Duncan, Okla., September 5, 1961.

Mr. J. M. BULLARD,
*President, Beaver Cow Creek Watershed Development Association,
Duncan, Okla.*

DEAR MR. BULLARD: The Waurika Reservoir will create a lake of 27,072 acres in southern Oklahoma, and part of the lake will extend into Stephens County. This will affect several streams that run through the county. The project will also include 6,470 acres additional which will be devoted to wildlife.

The lake will be used for fishing and hunting, and the acreage will be utilized by approximately 150,000 people annually in southern Oklahoma and north Texas, all within a concentrated area of 100 miles or less. It will be very beneficial to southern Oklahoma. We have to travel over 100 miles now to find a favorable place to fish as the small local lakes are inadequate to take care of the group of fishermen and hunters in southern Oklahoma.

We, in southern Oklahoma, need this lake and game preserve very much as the majority of people in the county are wage earners or own their own places of business; normally, we have a 40-hour workweek and it is necessary we have outside interests and places of recreation for ourselves and our children. We can fish and hunt as a sport but the amount of fish will be a source of food supply for this county also.

By keeping young people interested in fishing and hunting it will help in decreasing juvenile delinquency as their spare time will be occupied. It is very seldom that our penal institutions have boys or girls who like to hunt and fish and love nature, develop into criminals, and this Waurika Reservoir with its wildlife will give us this much needed place. It also will be a means of employment for boys and girls out of school. These summertime jobs are something we do not have in Duncan or Stephens County to take care of our young people who are growing up in this area.

This project will require the joint supervision of our local, State, and Federal Fish and Wildlife Service. We will need to establish fish hatcheries to keep the lake properly stocked. It will also require commercial fishermen to keep the rough fish from the lake. The supervision and maintenance will need to be guided or controlled by experts in the various commissions. In the State of Oklahoma there are 23 known fish families and more than 150 species of fish are in the above group.

The wildlife area will support squirrels, rabbits, coon, deer, quail, various fur-bearing animals as well as predatory animals, and the lake will naturally be a habitat for our migratory fowls. The refuge would permit hunting for a large area of southern Oklahoma and north Texas, and would also permit propagation of the steadily declining wildlife.

For an enterprise of this size it needs proper planning, and the following are the suggested requirements:

- (1) Management and maintenance will be in proper hands.
- (2) Economically it will be sound because it will be self-supporting.
- (3) The project shows it will pay the original cost plus interest of acquiring and building the lake over the prescribed time.
- (4) It will supply our great need for occupation and outside interest and entertainment.
- (5) It will supply an abundance of food.
- (6) It will create new business.
- (7) It will generate new jobs for additional people, we have numerous people in Duncan and Stephens County out of employment at the present time.
- (8) It will pump new life into an area that has been hurt by a decline in the oil industry.

We urge you to consider the Waurika Reservoir and the wildlife area as a most needed program for southern Oklahoma and northern Texas.

Yours truly,

CLINT ROBERTS.

DUNCAN CHAMBER OF COMMERCE,
Duncan, Oklahoma, September 5, 1961.

J. M. BULLARD,
President, Beaver Cow Creek Watershed Development Association,
Duncan, Okla.

DEAR MR. BULLARD: We have very good authority for the statement, "Man does not live by bread alone." This fact is much more true today than when it was spoken. As chairman of a committee studying the recreational possibilities offered to southern Oklahoma by the proposed Waurika Reservoir, I would like to offer the following general observations:

We are fast reaching the place where a balanced growing community and area must have recreational facilities if we are to continue to grow and increase our population. I will not attempt to provide statistics that point out the many people in the southern Oklahoma area who have boats and motors but I am confident that it is well above the national average. Most of the residents of Stephens, Comanche, Cotton, and Jefferson Counties in southern Oklahoma are limited on boating facilities close to their homes. Boating is permitted on Clear Creek Lake and Lake Duncan in the Duncan area. Many of our citizens are forced to travel approximately 100 miles to Lake Texoma and Lake Murray in order to do any large amount of boating or water skiing.

The population of the southern Oklahoma area has increased at a rapid rate during the past 10 years; particularly in the Lawton and Duncan, Okla., areas and with this increase in population, the recreational facilities in the area are not proving to be adequate for the needs of the people. It has been our observation that a community or area that has insufficient recreational facilities to hold its retired population will suffer the constant drain of retired people which goes a long way toward wrecking the economy of the area.

At the present time we do not have any major recreational attractions in this particular area of southern Oklahoma and north Texas. As was pointed out earlier, our people are having to drive at least 100 miles to the nearest suitable lake resort. We believe that if the Waurika Reservoir is authorized it will be a major step in solving our recreational problems. There is reason to believe that people from Wichita Falls, Shephard Air Force Base, Lawton and Fort Sill, Duncan, Waurika, Walters, Temple, and Comanche will receive major benefits from the recreational facilities that it will offer. In addition to these communities in southern Oklahoma that will be directly involved, we believe that people from at least 20 counties in southern Oklahoma and north Texas will utilize the Waurika Reservoir recreational facilities. There will be major use of the boating and skiing facilities along with fishing that will be made possible. Also there will be a good possibility of the development of private and public resorts on the lake.

We personally feel that the recreational features of the Waurika Reservoir are sufficient to tip the scales for or against the future well-being of the south-central area of Oklahoma and north Texas.

Sincerely,

J. W. WILKINSON,
Chairman, Recreation Committee.

Senator JACKSON. Now, Mr. Bullard, I believe you are to call your witnesses.

Mr. BULLARD. Mr. Raab of the water resources board from Oklahoma City.

Senator JACKSON. All right, Mr. Raab.

Do you have a prepared statement?

Mr. RAAB. Yes, sir, I do.

Senator JACKSON. Why do you not file that for the record and then summarize it. I think we can save some time here.

Senator KERR. I am sure the witnesses will be happy to cooperate with the committee in that regard.

Mr. RAAB. We certainly will.

Senator JACKSON. Just identify yourself and whom you represent.

**STATEMENT OF FRANK RAAB, EXECUTIVE DIRECTOR, OKLAHOMA
WATER RESOURCES BOARD, OKLAHOMA CITY, OKLA.**

Mr. RAAB. I am Frank Raab, director of the Oklahoma Water Resources Board.

Senator KERR. Let me identify him for you.

He is the man who succeeded in the job that Don McBride occupied down there for many years. He did not immediately succeed Don, but he now has the job in the Oklahoma Water Development Agency that our friend, Don McBride, really made famous.

Senator JACKSON. Very good.

Senator KERR. And a worthy successor.

Senator JACKSON. A good introduction.

Senator KUCHEL. Is he a good man?

Senator KERR. Yes.

Mr. RAAB. Thank you. I must apologize, I addressed our statement to Senator Anderson.

Senator JACKSON. That is all right. He is still chairman of the committee. I am just the acting chairman.

Mr. RAAB. I will submit the report and without taking up the time of the committee I will just mention briefly that we have statements from our department, the Oklahoma Water Resources Board, the Department of Wildlife Conservation, and the Oklahoma Planning and Resources Board, Division of State Parks.

We want to submit those statements for the record.

Senator JACKSON. All right. Those statements will all be included in the record.

Mr. RAAB. Probably one point that the committee would be concerned about—and I notice Mr. Bullard mentioned it—is water rights. Under date of May 21, 1957, the Secretary of Interior withdrew all of the unappropriated waters of Beaver Creek as provided by Oklahoma law. On June 7, 1957, the State of Oklahoma acknowledged the withdrawal and advised the Secretary that the waters withdrawn by him would be withheld from further appropriation. In May 1958, the Oklahoma Water Resources Board began a hydrographic survey for the purpose of adjudicating the water rights in the basin. This survey will be processed through the district court in the near future so that the water rights for the Waurika project will be firmed up.

That survey is well along now.

We have gone into, Mr. Chairman, the irrigation features, recreation, fish and wildlife, and so forth and so on, but since we are submitting a written statement I will not take up the time unless the committee has questions on it.

Senator JACKSON. You must have a lot of potential wildlife down there with the amount of money that we are allocating here, which is what?

Mr. RAAB. \$2 million.

Senator KUCKEL. \$2,486,000.

Senator KERR. Is that a little less than 10 percent?

Senator KUCHEL. A little less than 10 percent.

Senator KERR. I would say that the possibility of developing is of more significance than certification of its present reality. I know nobody has done more than this committee in helping to develop the

environment in which fish and wildlife can become a significant factor in an area.

Senator JACKSON. Will one of the witnesses be in a position to address himself to the benefits, and so on, on that item?

Senator KERR. I would presume that Mr. Barclay would.

Senator JACKSON. I meant from the people from Oklahoma.

Mr. RAAB. We have here, Mr. Chairman, an astonishing exhibit, which I am sure will be of interest, to show reservoir visitations in Oklahoma on man-made lakes. The amazing feature of this report is that irrespective of the reservoirs that we have in operation, when we have a new reservoir, it does not detract from the daily visitation at the existing reservoirs, so it is an unpredictable thing. It far exceeds anything that we ever supposed would happen in Oklahoma.

Senator KERR. One of his statements that he is submitting for the record is from the Oklahoma Fish and Wildlife.

Mr. RAAB. Yes.

Senator JACKSON. Let me see that. Go ahead.

Mr. RAAB. I want to make another statement here.

On May 12, the Governor of Oklahoma, Hon. J. Howard Edmondson, together with our department, the Fish and Wildlife Commission, the Oklahoma Department of Highways, and Oklahoma Department of Health, prepared with the Governor a statement on the various features of the project and their responsibilities under Oklahoma law. This is the Governor's statement with reference to endorsement of the project.

It is very short. It is made a part of the formal report that you have before you, but this is what the Governor had to say on that and I would like to reemphasize for the benefit of the committee:

We cannot overemphasize the importance and the need for construction of the Waurika project as planned in your report. The urgent need for flood control has been disastrously demonstrated many times. The urgent need for municipal and industrial water supply is very evident to serve the present and future needs of the cities, and he names the cities.

The irrigation of approximately 2,000 acres of some of the finest quality lands located below the damsite on Beaver Creek is most certainly desirable due to the poor distribution of rainfall in the project area. The recreation and wildlife features of the project are necessary to serve the needs of the area.

Therefore, the State agencies involved concur with me in approving your report and ask that recommendations submitted herein be included and made a part of your report to the Congress. We urge the authorization and construction of the project at the earliest possible date.

That is all, Mr. Chairman. I am going to take up just as little of your time as possible.

(The statements referred to follow:)

OKLAHOMA WATER RESOURCES BOARD,
Oklahoma City, Okla., September 11, 1961.

Re Waurika project, Beaver Creek, Red River Basin, Okla.

HON. CLINTON P. ANDERSON,

*Chairman, Committee on Interior and Insular Affairs,
Washington, D.C.*

DEAR MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: Mr. Chairman and members, it is indeed a pleasure to again meet before your distinguished committee to discuss water resources development projects. I have had the pleasure for the past several years of appearing before your committee as Oklahoma director of the National Reclamation Association.

The Oklahoma Water Resources Board is the State agency that acts as a coordinator of our State agencies insofar as water resources projects are con-

cerned. In preparing the formal statement of the State of Oklahoma on the Waurika project report a very close coordination was had between the Bureau of Reclamation and our department, the State Highways Commission, the State Health Department, Planning and Resources Board, Division of State Parks, and the Department of Wildlife Conservation. Therefore, we come to your committee in support of the Waurika project unanimously agreed on the various functions and responsibilities of our State agencies in the operation and maintenance after construction.

The Oklahoma Water Resources Board has reviewed the Waurika project report as submitted to you by the Secretary through the Office of the President and we wholeheartedly concur in the recommendations of the report.

Flood control.—While there will be other witnesses this morning that will submit to you information on the flood problems in the Beaver Creek Basin, we cannot help but emphasize that the need for flood control has been disastrously demonstrated many times.

Water supply, municipal and industrial.—Supplemental water supplies for the area and the cities of Lawton, Duncan, Waurika, Comanche, Temple, and Walters and a large oil refinery are critically needed to supplement present supplies from surface and ground water which is now in short supply in the project area. We believe that further growth and development cannot be realized unless a dependable water supply is available which the Waurika project will supply.

Irrigation.—The alluvial lands in the Beaver Creek Valley below the dam-site are the finest to be found in Oklahoma. The production from these lands has been limited due to the fact that during maturing season of the crops rainfall is deficient to produce diversified crops. We believe that supplemental water for irrigation will triple production of these lands and they need not be crops now in surplus.

Recreation, fish, and wildlife.—The Waurika project is located in an area which has a population of over 280,000 people within a 50-mile radius in the project. It has been our experience in Oklahoma in every case where we have developed lakes and reservoirs that the recreational use exceeded many times the expected use while projects were in the planning and development stage. We attach hereto a visitation record of projects that have been in operation in Oklahoma. It is astonishing to note that when a new project is put into service the visitation record of that project does not reduce the visitation at other projects, therefore, recreation and fisheries is rapidly becoming a major function of our water resources projects, not only in Oklahoma but throughout the country.

Water rights.—Under date of May 21, 1957, the Secretary of Interior withdrew all of the unappropriated waters of Beaver Creek as provided by Oklahoma law. On June 7, 1957, the State of Oklahoma acknowledged the withdrawal and advised the Secretary that the waters withdrawn by him would be withheld from further appropriation. In May 1958 the Oklahoma Water Resources Board began a hydrographic survey for the purpose of adjudicating the water rights in the basin. This survey will be processed through the district court in the near future so that the water rights for the Waurika project will be firmed up.

Mr. Chairman and members of the committee, the Oklahoma Water Resources Board feels that the Waurika project is a good, sound project and that the investment by the Federal Government for its construction will be a sound one and be repaid many times in benefits in addition to the payments made by the water users of the project.

Respectfully submitted,

FRANK RAAB,

Executive Director, Oklahoma Water Resources Board.

OKLAHOMA DEPARTMENT OF WILDLIFE CONSERVATION,
Oklahoma City, Okla., September 8, 1961.

Re Waurika project, Beaver Creek, Red River Basin, Okla.

Hon. CLINTON P. ANDERSON,

*Chairman, Committee on Interior and Insular Affairs,
Washington, D.C.*

DEAR MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: Because of our inability to be present for the hearing before the committee on the Waurika project we are designating Mr. Frank Raab of the Oklahoma Water Resources Board to present to you and your committee our statement in support of the authorization and construction of the Waurika project.

Our department has worked very closely with the local planning office of the Bureau of Reclamation as well as State agencies having responsibility in the overall planning and preparation of the project report. Many meetings have been had with our agency and other agencies of the State of Oklahoma during formulation of the project report and also the formulation of Oklahoma's report on the project which was forwarded to the Secretary of Interior under date of May 12, 1961. Because of this coordinated activity and our responsibility under Oklahoma law with reference to the fish and wildlife aspects of the project, we feel that the development of the project is urgently needed, is economically sound and feasible and that the project, when constructed, will afford fishery and recreational opportunities inherent to all large water impoundments. We feel there is an urgent need for this project to afford fish and wildlife benefits to over 280,000 people living within a 50-mile radius of the project.

The Oklahoma Department of Wildlife Conservation pledges its full cooperation in bringing about the maximum benefits of the project for all purposes and respectfully requests that you and your committee give the project your favorable recommendation.

Respectfully submitted.

ROY A. STAFFORD, *Director.*

OKLAHOMA PLANNING AND RESOURCES BOARD,
Oklahoma City, Okla., September 8, 1961.

Re Waurika project, Beaver Creek, Red River Basin, Okla.

HON. CLINTON P. ANDERSON,
*Chairman, Committee on Interior and Insular Affairs,
Washington, D.C.*

DEAR MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: Because of our inability to be present for the hearing before the committee on the Waurika project we are designating Mr. Frank Raab of the Oklahoma Water Resources Board to present to you and your committee our statement in support of the authorization and construction of the Waurika project.

Our department, through the division of State parks, has worked very closely with the local planning office of the Bureau of Reclamation as well as State agencies having responsibility in the overall planning and preparation of the project report. Many meetings have been had with our agency and other agencies of the State of Oklahoma during formulation of the project report and also the formulation of Oklahoma's report on the project which was forwarded to the Secretary of Interior under date of May 12, 1961. Because of this coordinated activity and our responsibility under Oklahoma law with reference to providing facilities for recreation, we feel that the development of the project is urgently needed for the various functions assigned to it, is economically sound and feasible, and that the project, when constructed, will afford recreational opportunities to a densely populated area thereby rendering the recreational features of the project as one of its major functions.

While the project report recommends that minimum facilities will be provided, we feel that further study of the recreational benefits should be made to determine what additional facilities may be needed above those recommended in the report. It has been our experience here in Oklahoma that when a reservoir is constructed the recreational use of these projects far exceeds estimates made at the time they were under study and in report status. Therefore, while at the present time this department does not have a direct responsibility in the project as a working partner it has further been our experience that as soon as the reservoir is constructed and water is available for recreation as the public demands, our department is assigned responsibilities for the management and operation of the project areas for recreation, as was the case in the Altus project in southwest Oklahoma, and many other reservoirs that have been constructed throughout the State. We are attaching an item that may be of interest to you and your committee with reference to visitor days per year at reservoirs that are now in operation in Oklahoma, which reflects the tremendous use by the public of our manmade lakes.

We urge that you and your committee give a favorable recommendation for the authorization and construction of the Waurika project. We pledge our full cooperation and support for the development of the recreational opportunities.

Respectfully submitted.

MACK BURKS,
Chairman, Oklahoma Planning and Resources Board.

Attendance at Corps of Engineer Reservoirs, Tulsa District

[In thousands]

Year	Denison	Wister	Heyburn	Hulah	Fort Gibson	Tankiller Ferry	Fort Supply	Great Salt Plains	In Kansas		Canton
									Fall River	Toronto	
1945	1,250						12	39			
1946	500						3	47			
1947	1,500						24	73			
1948	2,250						59				
1949	2,294						103				
1950	4,079	1,28	14	18			103	125	1,178		174
1951	3,451	373	129	26	195	45	336	438	451		310
1952	4,574	762	192	1121	489	93	330	436	451		807
1953	3,485	680	310	186	1,779	169	313	526	449		761
1954	5,108	840	355	304	1,287	552	282	502	394		554
1955	4,37	1,437	426	349	2,163	1,152	239	389	448		388
1956	6,598	1,863	401	479	2,745	1,419	251	404	375		252
1957	7,471	879	518	471	3,708	1,865	251	456	303		343
1958	8,037	1,134	533	484	3,998	2,120	286	340	428		562
1959	7,113	863	464	578	4,177	2,297	316	608	428		511
1959	6,736	525	470	505	4,212	2,398	387	602	397		636
1960	6,624	610	480	430	3,781	2,283	324	694	490	1,429	765
											841

¹ Year of beginning normal operation. Beginning of normal operation was 1941 and 1942 for Great Salt Plains and Fort Supply, respectively, but visitation counts are not available.

Altus-Lugert project—Bureau of Reclamation, attendance

1957 calendar year-----	638, 468
1958-----	1, 208, 820
1959-----	1, 019, 650
1960-----	1, 076, 250

Senator JACKSON. Fine.

Any questions?

Senator KUCHEL. Would it be your testimony that this constitutes the most feasible fashion by which the communities in this area may receive the vitally necessary water supply?

Senator KERR. This is the only fashion.

Mr. RAAB. Yes; Senator, we have run all the water in that situation thoroughly and this is our only answer.

We have explored every possible means of securing water needed, ground water and our surface supply, in the vicinity.

Senator KUCHEL. Will you make a comment for the record on what Indian tracts may be included in the lands proposed to be irrigated?

Mr. RAAB. In our hydrographic survey we have no Indian lands in the project at all. It is one of the few areas in Oklahoma where we do not have that.

Senator KUCHEL. Where will the electricity come from to pump the water in this new conservancy district?

Mr. RAAB. I will let Mr. Palmer answer that, or Mr. Barclay.

Mr. BARCLAY. There are about 300 acres of irrigation in the lands that are scattered in here that are restricted Indian allotments, about 300 in the center of the area right down in here. Of course, there are not very many acres of Indian land.

Senator KUCHEL. 300 out of 2,000?

Mr. BARCLAY. Yes, sir.

Senator JACKSON. Is that the Red River?

Mr. BARCLAY. This is the Red River right here; yes, sir.

Senator KERR. Senator Kuchel asked you where will the electric power come from?

Mr. BARCLAY. There are two sources of power in this area. There is the Cotton Electric Cooperative that serves this entire area and also the Public Service Co. of Oklahoma has a network of power in here and both of those services are interconnected with the Southwest Power Administration and also with other power installations throughout the country.

Senator JACKSON. Is it contemplated there will be a contract with the Southwest Power Administration for the power wheeled to them?

Mr. BARCLAY. No, sir; we have not planned it on that basis. We planned, at the time the project was initiated, that the conservancy district would enter into contracts with the most favorable source of supply, either the Public Service Co. of Oklahoma or the Cotton Electric, whoever gave the best rate and service.

Senator JACKSON. Have you made an estimate in connection with the operation and maintenance cost?

Mr. BARCLAY. Yes, sir.

Senator JACKSON. Regarding the amount of power that you are going to use, is this a sizable amount?

Mr. BARCLAY. No; it is not too great. The operation of the municipal features alone run about \$140,000 a year and that includes power and other operating expenses.

Senator KUCHEL. With respect to your 3,500 acres for game management, does the Bureau contemplate the acquisition of that area in fee simple?

Mr. BARCLAY. Yes, sir. There are two tracts, the 3,500 acres for offsetting losses in the reservoir area, and then about 2,800 acres for migratory waterfowl, and they would be up in this area and be purchased in fee simple.

Some of those lands would be normally covered by easements, but instead of that will be covered by fee simple purchase.

Senator KUCHEL. Are there any gas or oil possibilities in that area?

Mr. BARCLAY. The area has been tested out. There have been a number of dry holes in here and we have reports from the Bureau of Mines indicating that there is no proven oil-gas in that area. There is always a possibility, but so far there have been several dry holes drilled in here and there is no developed oil or gas in the area.

Senator KUCHEL. Thank you, Mr. Chairman.

Senator JACKSON. Senator Hickey?

Senator HICKEY. No questions.

Senator JACKSON. Senator Burdick?

Senator BURDICK. Yes. I thought there was only one Red River in the country. What kind of a tributary is that?

Senator MONRONEY. One flows north and one flows south.

Senator JACKSON. This is the one that separates Texas from Oklahoma.

Mr. RAAB. Mr. Chairman, as far as our department records are concerned, there are no applications of record and therefore, we would have knowledge of any claims that they may have.

Senator JACKSON. I do not think that is of any major importance.

Mr. RAAB. I do not think it is significant in this case.

Senator JACKSON. Thank you very much.

Mr. RAAB. Thank you very much.

Mr. BULLARD. Mr. Don Morrison, executive vice president of the association.

STATEMENT OF DONALD J. MORRISON, EXECUTIVE VICE PRESIDENT, BEAVER-COW CREEK WATERSHED DEVELOPMENT ASSOCIATION, WAURIKA, OKLA.

Mr. MORRISON. I am Don Morrison, a native of Waurika, Okla., and a resident of this little town in the Red River Valley for most of my life. Since 1951, I have been publisher of the Waurika News-Democrat, a weekly newspaper with which my father became associated when he was 15 years old. My interest in this project dates beyond my election in June 1955 as president of the newly organized Beaver-Cow Creek Watershed Development Association.

Senator JACKSON. Why do you not just put your statement in the record in the interest of time and suppose that you either summarize it or supplement the comments that have been made.

Mr. MORRISON. I will be glad to.

Senator JACKSON. It will appear in the record at this point.

(The statement referred to follows:)

STATEMENT OF DONALD J. MORRISON, EXECUTIVE VICE PRESIDENT, BEAVER-COW CREEK WATERSHED DEVELOPMENT ASSOCIATION

Mr. Chairman and members of the committee: I am Donald J. Morrison, a native of Waurika, Okla., and a resident of this little town in the Red River Valley for most of my life. Since 1951, I have been publisher of the Waurika News-Democrat, a weekly newspaper with which my father became associated when he was 15 years old. My interest in this project dates beyond my election in June 1955 as president of the newly organized Beaver-Cow Creek Watershed Development Association. I served in this capacity for 3 years, and since July 1958 I have served as executive vice president.

You have available to you a very detailed report on the Beaver Creek flood problem and the measures proposed for control—a report prepared by the Corps of Engineers for the Bureau of Reclamation. We have studied this report and we believe it to be a very good technical appraisal of the problems and their solutions, insofar as a layman can judge. My purpose here today, however, deals not with the calm and calculating technical point of view. Instead, it deals with the unrest, the anxiety, the annoyance, the adversity of a people plagued by a problem too complex for solution by their own resources. I bring to you a panorama of the problem as viewed first hand by a newspaperman who has lived with this problem and is deeply concerned with the depressing effect of floods on people and property.

I first heard of floods from my parents, who as young people came their separate ways from Missouri and Kansas and settled in Waurika in the early 1900's. The flood of "naught eight" has long been a conversation piece in many a Waurika home and has served as the criterion for the many floods that have followed. Not until May 1955 were the 1908 flood stories exceeded.

During the past decade, I have seen for myself the deleterious raids of Beaver Creek and its tributary, Cow. Founders of the town reckoned not with the destructive potential of these normally placid streams which flow together just four blocks from the street designated as Main. They were intent on platting a town in Oklahoma Territory immediately west of the Rock Island Railroad, built in 1900 almost parallel to the 98th meridian which divided Oklahoma and Indian Territory. The booming townsite of Waurika was virtually locked in the four to five blocks between Beaver Creek on the west and the Rock Island Railroad on the east. Founded in 1902, the town's development was concentrated in that strip. Not until Oklahoma became a State in 1907 did settlement begin in the higher and safer environs of old Indian Territory, now Waurika's east side.

Now let me review for you some of the aspects of adversity—adversity that has been piled on top of adversity in the past decade alone, to say nothing of the numerous floods dating back to the early 1900's:

I recall the tired faces of young and old, also the crying of babes, in shelters and canteens set up by the American Red Cross and the Salvation Army. Both these fine organizations answered distress calls on six different occasions in the floods of 1950, 1951, 1953, 1955, and 1957. Records of the Red Cross show an expenditure of \$42,191.50 for Waurika floods during that period. Two hundred families, over one-fourth of the town's family units, contacted the Red Cross headquarters to discuss their disaster situations in May 1955, when expenditures for flood relief totaled \$14,261.94. The attached letter from Mrs. Sadie Stohl, ARC disaster representative, St. Louis, Mo., gives a breakdown of the May 1955 disaster operation.

I recall the help given by rangers of the State game and fish department and by concerned citizens from neighboring towns—how they brought motorboats to the scene on many occasions and evacuated those persons trapped by an overnight rise, or those stubborn souls who refused to believe that old Beaver would get high enough to force them from their homes. Their jobs done, rescuers would tie up their boats downtown, even on some parts of Main Street. An illustrated article in Oklahoma Wildlife magazine, submitted as an exhibit here today, tells of the May 1955 rescue operations.

I recall that an 80-year-old citizen underestimated the May 1955 rise and waited too long to wade to safe ground from his home over one block from city

hall. Authorities thought the entire northwest area had been evacuated, but were later attracted by an incessant hammering noise. By the time a rescue boat reached my friend, he was standing in 5 feet of swift water. He had endured this fright and discomfort for the better part of 6 hours.

I recall many a migration of northwest Waurika citizens to the courthouse on North Main—how they have bedded down, family after family, in the hallways of the building's three floors and in the large courtroom.

I recall the times that vacant buildings on Main Street have been opened to accommodate evacuated families—how the homeless have huddled in groups up and down the few dry stretches along Main Street sidewalks.

I recall that Waurika's separate school for Negroes was gutted by fire during the flash flood of May 1954. All avenues of approach were cut off by high water and nothing could be done to save the brick structure. This loss brought about the early and peaceful integration of Negroes into our school system the following fall.

I recall that Mayor Fred Richardson's house, just one and one-half blocks from Main Street, was reduced to a shell when fire struck during the May 1955 flood. Firemen battled the blaze in almost 4 feet of water, but to little avail.

I recall the times that many proprietors have stayed all night in their places of business, behind doors braced with tightly calked floodboards. Calking guns and floodboards are standard pieces of emergency equipment, but they don't always beat the marauding Beaver. In some buildings, the creek sneaks in and seeks a level as high as 2 feet above the floor.

I recall how neighbors in north and west side homes and friends from across town have worked together to stack furniture in a race to minimize the damaging effects of Beaver's encroachment. Here, again, the creek is frequently the winner, because it sometimes swirls high on the windows of west side dwellings.

I recall a more pleasing scene in west Waurika than the one I can show you today. The relentless ravages of floodwaters have left a cruel blight on a once beautiful valley. House after house has been moved to higher ground. Some have been abandoned. Others have been raised 2 to 4 feet on concrete blocks. Harmon Park, the football field and stadium, and a golf course with elevated greens—all in a pretty setting of trees—have managed to survive through constant care and rebuilding.

I recall the times that highway traffic from the West has been cut off completely. Waurika is a critical highway hub, with U.S. Highways 70 and 81 intersecting just east of town, State Highway 79 extending southwest to Wichita Falls, Tex., and State Highway 5 running northwest toward Lawton. Major rises, such as the floods of 1951, 1955, and 1957, stop traffic on 70, 79, and 5, and sometimes on 81. For the better part of a day in May 1955, the only highway access to Waurika was 70 from the east. In addition, washouts on the Rock Island Railroad forced rerouting of trains. There was no mail service by train for almost 5 days.

I recall that the Rock Island wye in north Waurika held back a wall of water in the flood of May 1955. It barely survived a breakthrough which would have deluged all of Main Street to a depth that could only be guessed.

I recall five rises in the space of 28 days in the last serious period of flooding in April and May 1957—how some homes were invaded or threatened by unruly waters on three successive weekends. That was the period of profuse rainfall which would have filled Waurika Reservoir, had the dam been in operation, and would have required the spilling of several thousand acre-feet of water in controlled releases downstream, without damage. So we were told by Bureau of Reclamation engineers.

I recall the times I have worked with my good friends Dutch Kauerauf, city water superintendent, and Bill Fowler, nightwatchman, in checking stream gages installed by the U.S. Weather Bureau on Beaver and Cow Creeks in Waurika. These were part of a flood warning system established by the Government in 1957 to supplement our "smell" for flood danger. Appreciated though it is, this system is helpful only to the extent for which it was intended—to warn Waurikans to get out of the way. Beaver's surges can only be measured, not controlled.

These recollections involve damages to residential, commercial, and industrial properties, streets and alleys, Federal and State highways, railroads, pipelines,

and telephone and telegraph facilities—losses totaling thousands and thousands of dollars. Damages to the Rock Island Railroad in the May 1955 flood were estimated at \$100,000. The attached letter of Assistant Division Engineer H. E. Womack estimated \$50,000 damage from Waurika south to Red River, \$10,000 from Waurika northwest to Hastings, Okla., and \$40,000 from Waurika north to Marlow, Okla. Later reports indicated losses far above the \$100,000 estimate.

Then there are the valley losses consisting of damages to growing crops, agricultural land, livestock, fences, private levees, farm ponds, and bridges and roads.

Repeated flooding has taken big bites out of the soil's productiveness, by stealth or by deposits, along the Beaver Creek valley. Scour and unproductive overwash have taken their toll. The history of flooding has discouraged land utilization in many areas. In Jefferson County alone, according to agricultural specialists, less than one-third of the bottomland acres are farmed along the 19-mile reach of Beaver Creek. Much of the land has been abandoned to brush.

Adversity not easily appraised is the loss of business during flood seasons, human suffering and inconvenience resulting from evacuation and reoccupation of flood areas, the penalty of unfavorable publicity imposed on a town that is trying to grow, and the accumulation of hurt absorbed by a much-battered community morale. Some of our people gave up. They moved. Others of us are looking forward to a better day.

I think it is appropriate to point out in this statement that Waurikans have given more than lip service to what has become our one big hope—the Waurika Reservoir. We are looking forward to the day that destructive floods can be channeled into beneficial uses. To help usher in that better day, flood-weary Waurikans have donated almost triple their \$6,000 quota for the contributive fund collected throughout the project area to participate with the Federal Government in the completion of feasibility investigations of the reservoir on Beaver Creek.

It is true that all of our flooding does not come from Beaver. Tributary Cow adds to the problems compounded every few years by severe flooding. One hundred percent control of Beaver at the damsite northwest of town will greatly minimize the pileup of water at Waurika, however, and let Cow flow through more freely. The shorter Cow Creek has excellent sites for upstream detention structures, and our association is a cosponsor of a move to harness this tributary stream.

For fear that my remarks have led you to believe that our all-consuming interest is flood control, I must emphasize that we recognize this function of the reservoir for what it is, a secondary benefit, extremely valuable though it is. To be sure, we want to do all we can to rid ourselves of this creek-fed malignancy that keeps eating away at our community and its agricultural environs. Above and beyond this consideration, however, we see the Waurika Reservoir as a much-needed tool to implement a diversified economy, to provide jobs for the products of our own schools, to realize our potential, to bear fruit.

Despite our difficulties and our frustrations, we have confidence enough in our capabilities to believe that we can increase our contribution to the culture and the economy of America. We prefer to maintain our homes in rural America which has so much to offer in the way of wholesome environment and the rewarding associations in small-town living.

The Waurika Reservoir will divert destructive water to constructive use. It will be salable. In brief, it will put flood water to work.

We and our neighbors can use good water. Controlled and stored in Waurika Reservoir, the waters of Beaver Creek will serve many fine purposes. Uncontrolled, they will continue to impose adversity on the people of this area; they will contribute again and again to the destruction of lands and improvements along the far reaches of Red River; and they will continue to spill away in a shameful waste of a precious resource—water itself.

Mr. Chairman and members of this committee, I thank you for your time. We respectfully request that you help us put flood water to work.

DONALD J. MORRISON,
Executive Vice President, Beaver-Cow Creek Watershed Development Association.

WAURIKA, OKLA.

BEAVER-COW CREEK WATERSHED DEVELOPMENT ASSOCIATION
Waurika, Okla.

GENTLEMEN: In May 1955 both Beaver and Cow Creeks overflowed their banks resulting in one of the worst floods, if not the worst in the history of Jefferson County. The town most badly affected was Waurika.

As duly appointed health officer at that time, it was my duty to look after the sickness developed by the people who were evicted from their homes by floodwaters.

The conditions which existed, within a few hours after the creeks left their banks, were deplorable, to say the least. The above-mentioned people were housed in dilapidated buildings which had no semblance whatsoever of any toilet facilities, making the problem of any degree of sanitation impossible. Injuries and infections were poorly treated due to lack of any type of first aid facilities.

These peoples' water supply was contaminated; however, due to the diligence of the public health service, a typhoid epidemic was averted.

It seems almost in the fantastic category to believe that such a condition could develop within a few hours in a town that is otherwise adequately served by the modern conveniences of today.

LEE PULLEN, M.D.

THE AMERICAN NATIONAL RED CROSS,
St. Louis, Mo., June 15, 1955.

Mr. GLEN D. MAGEE,
President, Chamber of Commerce, Waurika, Okla.

DEAR MR. MAGEE: This is to convey our appreciation for the support you as an individual and the members of the chamber of commerce as a group, have given to the Red Cross workers during the recent flood-hail-wind disaster in Jefferson County.

We trust that you will use the information in the attachments to this letter to acquaint the members of the chamber of commerce with the Red Cross activity in this disaster and for use in the efforts of the chamber of commerce to secure flood control in the area.

Sincerely,

Mrs. SADIE STOHL,
Disaster Representative.
Mrs. GERTRUDE B. WOODS,
Chapter Chairman, Jefferson County Chapter.

SUMMARY OF DISASTER OPERATION, DR 781, JEFFERSON COUNTY, OKLAHOMA,
MAY 1955 AMERICAN NATIONAL RED CROSS

Emergency period:

Persons fed and sheltered (mass care), May 19-24.....	140
Hot meals served during this period.....	2,000
Inquiries about the welfare of persons in disaster area received and answered.....	15

Rehabilitation period:

Families contacted Red Cross office to discuss their disaster situations..	200
Families completed applications requesting assistance.....	181
Contacts have been classified as "Information only".....	19
Of the 181 applying were owners of their homes.....	121
Rented their homes.....	60
Were receiving their incomes from the welfare department, Veterans pensions, social security or other small retirement benefits, or from general relief.....	115

Applications were handled and closed as follows :

1. Unable to locate family.....	None
2. Family not a disaster sufferer.....	None
3. Family states it can recover without Red Cross assistance.....	14
4. Investigation shows family requires no Red Cross assistance.....	1
5Z. Needs met by Red Cross emergency assistance only.....	153
5A. Needs met by Red Cross rehabilitation award.....	13
Total.....	181

Classifications of relief and cash cost thereof :

1. Emergency mass care program : Food, dry cleaning blankets and other incidental shelter expenses.....	\$556.30
2. 83 families assisted with food, clothing or other maintenance.....	1,210.00
3. 56 families assisted with repair of their homes.....	4,505.63
4. 144 families assisted with essential household furnishings.....	7,806.68
5. 2 families assisted with medical and nursing needs.....	91.75
6. 1 family assisted with repair of occupational equipment.....	40.65
8. Telephone services, postage, office supplies and bank charges.....	50.93
Total cash expenditures by Red Cross.....	14,261.94

Prepared and submitted by—

SADIE STOHL,
Disaster Staff, Midwestern Area—ARC, St. Louis, Mo.

Summary of American Red Cross disaster Expenditures in Jefferson County, Okla., for period of January 1950 through June 15, 1955

1950: So. central Oklahoma floods, DR 736 :	
66 persons given mass care.....	\$283.25
133 families assisted indiv.....	8,998.49
Total.....	9,281.74
1951: Flash flood, DR 007 :	
65 persons given mass care.....	479.98
175 families assisted individually.....	12,421.61
Total.....	12,901.59
1953: Flash flood, DR : 100 persons given mass care only.....	124.36
1954: Oklahoma tornadoes of Hay 1954, DR 574 :	
180 persons given mass care.....	479.00
4 families assisted individually.....	2,855.00
Total.....	3,334.00
1955: Texas-Oklahoma floods and storms, May 1955, DR 781 :	
140 persons given mass care.....	556.30
166 families assisted individually.....	13,705.64
Total.....	14,261.94
Total cost to Red Cross for all disaster operations in county, 1950-55	39,903.63

CHICAGO, ROCK ISLAND & PACIFIC RAILROAD CO.,
Fort Worth, Tex., June 27, 1955.

JEFFERSON COUNTY SOIL
CONSERVATION DISTRICT,
Waurika, Okla.

(Attention Mr. R. V. Howard, chairman).

DEAR SIR: Your letter May 24, addressed to Mr. C. H. Hardwick, has been referred to me for reply.

Wish to advise that estimated damage to the May 18-20 1955 flood is as follows:

(a) Red River to Waurika, Okla.....	\$50,000.00
(b) Waurika to Hastings, Okla.....	10,000.00
(c) Waurika to Marlow, Okla.....	40,000.00

Yours very truly,

/s/ H. E. WOMACK,
Assistant Division Engineer.

JEFFERSON ASC COUNTY COMMITTEE,
Waurika, Okla., March 4, 1960.

Mr. GLEN MAGEE,
Waurika, Okla.

DEAR Mr. MAGEE: Following the extensive rains and subsequent flood damage in many areas of the State during the spring of 1957, the State USDA disaster committee requested that each county USDA disaster committee survey the flood damage to crops, pastures, and livestock and submit a report to the State committee. The Secretary designated that the county disaster committee should consist of the chairman of the county ASC committee as chairman, and the other two members to be the county agent and the farm home supervisor.

In compiling the information for this report the personnel and facilities of the above stated agencies as well as help from other agencies working with farm people in the affected areas were used.

The original report covered acres that suffered flood damage on Red River, Cow, Beaver, and Mud Creeks. Listed below are acres damaged by flood water on Beaver and Cow Creeks as reported May 24, 1957:

	Acres
Beaver Creek.....	6,000
Cow Creek.....	1,900

During this one flood in May of 1957 this committee estimated that 2,000 acres of small grain and 8,000 acres of pasture were flooded which resulted in a 90-percent loss of small grains and a 2-percent loss on pastures. The grains destroyed by flooding were principally wheat, oats, barley, rye, and corn. It was estimated that at least 1,000 head of livestock were affected due to back water and sedimentation on pastureland.

We certainly hope that these figures will be of some value for your work toward obtaining the Waurika Reservoir.

Yours truly,

RAY M. HERRON, Office Manager.

Mr. MORRISON. I have some exhibits. I am not an ad lib speaker.

Senator JACKSON. You just present it in your own way.

Mr. MORRISON. I have some exhibits to submit for whatever use the committee has to make of them.

Senator JACKSON. They can be filed with the committee.

Mr. MORRISON. All right.

I would invite your attention to these clippings over here which tell the story, at least within the past decade, especially since 1955, of the adversity which has been imposed—

Senator KERR. Let me make one statement there, Don. The evacuation in some parts of this area has been as complete at times as it is now in Galveston, Tex., from floods.

Senator JACKSON. How is that again?

Senator KERR. There has been evacuation of certain limited areas in the part to be protected from floods that has been as complete with reference to the effect on the area as is now the situation in Galveston, Tex.

Senator JACKSON. Has Waurika been the main recipient of the flood damage?

Mr. MORRISON. Yes, sir.

Senator JACKSON. What other communities?

Mr. MORRISON. No other community on Beaver Creek. Of course, there are substantial losses in the valley to rural property, to agricultural lands.

Senator KERR. And homes.

Mr. MORRISON. And homes.

Senator JACKSON. What is the value of the agricultural lands in the area flooded, roughly?

Mr. MORRISON. I believe the Corps of Engineers states that from the damsite to the confluence of Beaver with Cow Creek at Waurika it is \$1.6 million, the rural lands.

Senator JACKSON. The value of the land?

Mr. MORRISON. Yes. From there on down to the Red River, from the confluence of Beaver with Cow, to Red River, I believe the Corps of Engineers estimate a value of \$13.9 million.

Senator KERR. Is that the corps, or the Bureau?

Mr. MORRISON. That is the corps' report to the Bureau of Reclamation, as I understand it. In Waurika itself, it is about \$9 million.

Senator JACKSON. About how much?

Mr. MORRISON. \$9 million.

Senator JACKSON. In the Waurika area?

Mr. MORRISON. Yes, in the community; not in the flood area but in the community.

Senator JACKSON. The value of the property in the town of Waurika?

Mr. MORRISON. Yes, sir.

Senator JACKSON. What is the population of Waurika? Two thousand?

Mr. MORRISON. 1,933 at the last census.

Senator JACKSON. All right, sir.

Mr. MORRISON. I would like to show you this overlay. This gives you a rather graphic story of what part of our town is flooded, not just once a year but several times a year—not every year, but many times within the past decade. For instance, we have had floods in 1950 and 1951. In 1951, it was a major flood. We had floods in 1953 and a flash flood in 1954. We had five rises in 28 days in 1957, in April and May.

The flood of May 1955 is generally considered to be the worst of these floods.

I am not speaking of all the floods that date back to the early 1900's.

Senator JACKSON. Your pictures are of the 1955 flood?

Mr. MORRISON. 1955 and 1957, largely; some 1951. This red overlay shows the extremes of the 1955 flood. All of west Waurika is covered with water with the exception of certain high spots on the west side. We also have water over across the Rock Island main line.

on the east side and over into this residential area, part of it extending on down toward Highway 70. That probably is the extreme of the flood conditions.

Here is the 1957 flood. This is the May 27, 1957 rise. Such a flood occurs in our town very often. It is not an unusual flood. You can see that it covers a very great area.

Senator JACKSON. Do you have any further comments?

Mr. MORRISON. No, I have not. Thank you.

Senator JACKSON. Do you have any questions?

Thank you very much.

Mr. Bullard?

Mr. BULLARD. Yes, Mayor Wayne Holden, of Duncan.

Senator JACKSON. Do you have a prepared statement here?

Mr. HOLDEN. Yes, sir, Mr. Chairman.

Senator JACKSON. Just identify yourself for the record.

STATEMENT OF WAYNE M. HOLDEN, MAYOR, CITY OF DUNCAN, OKLA.

Mr. HOLDEN. Mr. Chairman and members of the committee, my name is Wayne M. Holden.

Senator JACKSON. You are the mayor of the city of Duncan?

Mr. HOLDEN. Yes, sir.

Senator JACKSON. All right, sir. We will put your statement in the record and could you summarize it or supplement any of the comments that have been made here this morning?

(The statement referred to follows:)

STATEMENT OF WAYNE M. HOLDEN, MAYOR, CITY OF DUNCAN, OKLA.

Mr. Chairman and Members of the Committee, I am Wayne M. Holden, a native of Stephens County, Okla., and have been a resident of this area all of my life. I was born on a farm about 20 miles from Duncan and have lived in Duncan for the past 20 years, all of which time I have been employed by the Halliburton Co. My grandparents on both sides of the family moved to Stephens County before statehood. I have served as mayor of the city of Duncan for the past 9 years and was elected to another 3-year term in April of this year. I own my home in Duncan and an 80-acre farm 4 miles west of Duncan. I also own part interest in a 270-acre farm in southeastern Stephens County.

I have been interested in the Waurika project, Oklahoma, ever since 1955 and have worked with the Beaver-Cow Creek Watershed Development Association in my capacity as mayor of Duncan. I have also served as vice president and as a director of the Beaver-Cow Creek Watershed Development Association. In my capacity as mayor, I have heard many expressions of enthusiasm for the Waurika project from Duncan civic leaders and from the rank-and-file citizens of the Duncan area. This is a project which many people in this section of Oklahoma are seeking, and they are continually assuring us of their support.

The city of Duncan has shown a rapid growth during the past 14 years, having doubled its population since 1947. As a result of this growth, we have been attempting to look ahead and anticipate our increased needs for water. In 1947 we were depending upon 14 wells and the 6,000-acre-foot storage of Lake Duncan. Since that date we have constructed Clear Creek Lake, with 10,000 acre-foot storage, and Lake Humphreys with 16,000 acre-foot storage in the permanent pool. We are now getting ready to start construction of Lake Doyle, which will have 23,000 acre-foot storage in the permanent pool.

Even though these lakes are meeting our current water needs, we realize that they are a short-range supply for a rapidly growing community. Our city officials and civic leaders are continually looking ahead to our long-range needs

and have been supporting the construction of the Waurika Reservoir ever since it was proposed.

It is estimated that the dependable yield from our present lakes, along with Doyle Lake, soon to be under construction, will be only about 5 million gallons per day. You will note in the Waurika project, table 9, page 18, that combined estimated needs of the city of Duncan and DX Sunray Refinery total 18 million gallons per day by the year 2015. These same estimates point out the need of 9,200,000 gallons per day by 1965 and 15 million gallons per day by 1975. These figures indicate that Duncan and DX Sunray Refinery need the long-range supply that would be provided by the Waurika project if we are to meet our growing demands.

I shall not attempt to cover all the aspects of Duncan's history, growth, economic development, and interest in the project. This information is contained in a letter from Mr. D. M. Putman, chairman of the Duncan Chamber of Commerce's Water Committee. Mr. Putman's committee and directors of the chamber of commerce have cooperated actively with city officials in maintaining our interest and support of the Waurika project. His letter is submitted as an attachment to this statement.

Chamber of commerce directors and city officials recognize the fact that well-spaced rains during the past few years have been a fortunate factor in avoiding water shortages. It was not many years back, however, that severe droughts frequently required a program of water rationing. Difficult experiences during these critical periods reminds us that drought is an ever-present threat in our section, and we are determined to make every effort to prevent their recurrence.

It is my privilege to submit for the record a resolution passed by the Duncan City Council on Tuesday, September 5, 1961, which reaffirms our endorsement of the Waurika project and indicates our intention to participate in the project through an appropriate repayment contract.

I am also submitting as an attachment a statement of the financial condition of the city of Duncan as of June 30, 1961.

I want to emphasize that the Waurika project is vital to the future growth of Duncan and this southern Oklahoma area which can reach its great potential only if we are assured of an adequate municipal and industrial water supply. We have the natural and human resources capable of making an outstanding contribution to the cultural and economic development of the Southwest and of our great Nation.

It is a pleasure to appear before this committee. I thank you for this opportunity, gentlemen, and I assure you that we in Duncan are ready to cooperate in any manner possible to make this project a reality. If we can provide any additional information to the committee, please call on us at any time.

RESOLUTION

Whereas the Secretary of the Interior has recommended to the Congress of the United States that the Waurika project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities; and

Whereas the U.S. Senate has scheduled a hearing on S. 114, a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

Whereas the city of Duncan has endorsed all preliminary studies and other proceedings having to do with the development of said project; and

Whereas, the mayor of the city of Duncan, by authority of the city council, has signed the petition to form the Waurika Project Master Conservancy District: Now, therefore, be it

Resolved by the City Council, city of Duncan, Okla., That said council reaffirms its official position of endorsement of the Waurika project, pledges its continued support, and restates its intention to participate in the water repayment obligations as set forth in the Secretary of Interior's plan for development; and be it, therefore, further

Resolved, That Wayne M. Holden, mayor, is authorized to present this resolution and the official statement of the city of Duncan in testimony to be given in support of this project before the U.S. Senate.

DUNCAN CHAMBER OF COMMERCE,
Duncan, Okla., September 5, 1961.

Re Waurika Reservoir.

MAYOR WAYNE M. HOLDEN,
City of Duncan,
City Hall, Duncan, Okla.

DEAR MAYOR HOLDEN: This letter is being written to you on behalf of the water committee of the Duncan, Okla., Chamber of Commerce, to set out some of the ideas, findings, and feelings of our committee as well as the townspeople of Duncan, regarding the above captioned reservoir project.

Various members of our committee have put down their thoughts and findings on the various aspects and facets of the project which are enclosed herewith. In addition, I would like to set out here a few facts and observations concerning Duncan and its immediate surrounding area.

Duncan, Okla., is located in the western part of south central Oklahoma, in T. 1 N., R. 7 W., and T. 1 S., R. 7 W., Stephens County.

The population of Duncan, Okla., has increased in the past 30 years as follows:

1930-----	8, 363	1950-----	15, 325
1940-----	9, 207	1960-----	20, 009

As of this date, the city of Duncan, Okla., has made use of all the reservoir sites that are available in the vicinity of this city that will impound water of the quality and quantity necessary for city water. In addition these reservoir sites appear to be the only ones available or near enough to make it economically feasible to deliver water to the city gates without the cost becoming exorbitant.

The present water supply reservoirs or sites range from 6 to 20 miles from Duncan. With the normal growth expectancy based on the past, and the predicted increase in population over and above the normal in the next 10 to 20 years, Duncan's available water supply is inadequate. We feel that our water supply at the present is adequate for domestic use only and that, for no more than in the foreseeable future.

With the fact in mind that our present reservoirs are filling with land erosion silt sedimentation which is constantly reducing their capacity to impound water, and with the increase in population expected, the water for domestic use only, can and no doubt will, become critical in the near future. In addition, it is noteworthy that our precipitation varies to a marked degree by cycles. There have been two periods of as much as 6 to 8 years each within the last 30 years when the rainfall received on our watershed was far below the average, and the capacity of Duncan's supply has been taxed severely during these times. The availability of a large impoundment of good water, such as the Waurika Reservoir, would undoubtedly remove the hazardous risk involved in these climatic changes. It is a known fact that changes in living conditions have brought about a marked and steady increase in the per capita consumption of water. It is quite possible that this increase will continue in the future at least to some extent.

We thus are led to conclude that there is no possibility of developing industrially within the area beyond a very limited extent unless an adequate source of water is developed that is within the economic reach of the community both for industrial as well as population growth.

The Duncan trade area is quite extensive. The nearest cities of equivalent or larger size are Chickasha, Okla., 40 miles to the north; Lawton, Okla., 35 miles to the west and north; Ardmore, Okla., some 70 miles to the southeast; and Wichita Falls, Tex., 65 miles to the southwest.

Located near Duncan are two large gasoline plants operated by the Skelly Oil Co. and Mobile Oil Co. There are also 11 smaller gasoline plants in this area. Sunray Oil Co. operates a large refinery, just south of Duncan, processing petroleum crude oil at the rate of approximately 42,000 barrels per day. This plant employs some 450 to 500 people. It is dependent solely upon the city of Duncan for its water supply which amounts to between 2 and 3 million gallons per day at the present time. In addition to their many other petroleum products, they produce aviation gasoline and jet fuels for both domestic and military uses. There has been some thought of adding a petro-chemical plant to the DX-Sunray installation here, but the water requirements which this would call for in the amount of 7 to 8 million gallons per day are not available.

The Halliburton Co.'s home offices and manufacturing plants, which are located in Duncan, employ from 1,900 to 2,000 people. Services are rendered, and equipment is manufactured and exported, through their facilities to the oil industry throughout the oil fields of the free world. The Halliburton Co. is the largest exporter of oil well service equipment of its type in the world. Their facilities, both in manufacturing and technical research, have been available in the past and would no doubt be available in the future, in case of a national emergency.

Duncan's small lakes or reservoirs are very much overloaded with boating, fishing, and water skiing. Fishing is poor here due to the overcrowded condition. The people of this community must go considerable distances to find places of recreation for cabin sites, boating, fishing, hunting, and other types of water sports. There are a large number of employed people on salaries and hourly wages in our area that could take advantage of a nearby large body of water for these purposes. They are prohibited in great part from doing so on weekends and on holidays due to the excessive distances necessary to travel to find ample facilities for such recreation.

The citizens of Duncan have shown in many ways their desire for and need of the consummation of the Waurika Reservoir. They have furnished some \$10,000 to help defray the expenses of the preliminary studies and reports. In addition, a great number of Duncan citizens have put in many man-hours of time and considerable travel expense in work meetings and study groups pertaining to the project and reports.

The people of Duncan and vicinity definitely realize the need for and show a keen desire to see the Waurika Reservoir completed in the near future.

If there is anything further that this committee can do to assist you in your reports or work, please feel free to call on us at any time.

Respectfully submitted.

D. M. PUTMAN,
Chairman, Water Committee.

Mr. HOLDEN. Mr. Chairman, would you like me to identify my background here just briefly?

Senator JACKSON. Yes, you may do that.

Mr. HOLDEN. I am Wayne Holden, a native of Stephens County, Okla., and have been a resident of this area all of my life. I was born on a farm 20 miles from Duncan and have lived in Duncan for the past 20 years, all of which time I have been an employee of Halliburton Co.

My grandparents on both sides of the family moved to Stephens County before statehood.

I have served as mayor of the city of Duncan for the past 9 years and was elected to another 3-year term in April of this year.

I own my home in Duncan and an 80-acre farm 4 miles west of Duncan. I also own part interest in a 270-acre farm in southern Stephens County.

I want to mention one thing I inadvertently left out. My parents moved to Pontotoc County and I attended high school at Ada, Okla., and I know Senator Kerr knows about that, and they still reside there.

Senator JACKSON. You are pretty native, I would say. You have been there quite a while on both sides.

Mr. HOLDEN. To conserve time and not to be repetitious of some of the other statements that have been made by Mr. Bullard and others, I will submit my statement for the record, particularly calling your attention to the municipal and industrial part of my statement.

Senator JACKSON. Duncan has 20,000 people?

Mr. HOLDEN. 20,009.

Senator JACKSON. I remember the figures someplace. It is next to the largest city. Lawton is the largest.

Mr. HOLDEN. Right. Attached to my formal statement is a letter from the chairman of the chamber of commerce water committee in our city. I would like to call your attention to that.

Senator JACKSON. Yes; I have that here.

Mr. HOLDEN. Then there is a resolution recently passed by my city council reaffirming our support of the program.

Senator JACKSON. You have a real need for the water for municipal and industrial purposes?

Mr. HOLDEN. Yes, sir; we do.

Senator JACKSON. That is pretty well set out from the industrial side in the letter from the chairman of the water committee.

Mr. HOLDEN. Mr. Putman's letter to me; yes, sir.

Senator JACKSON. That will be included with your statement.

Mr. HOLDEN. I have a statement with that attached.

I am prepared today to submit a financial statement in writing of the city of Duncan, if that will be required.

Senator JACKSON. I think it would be well to file it with the committee. I do not know that we necessarily need to have it in the record.

Thank you very much. We appreciate your statement. We appreciate your coming all this distance.

Mr. HOLDEN. Thank you very much.

Mr. BULLARD. Mr. Wayne Gilley, the mayor of Lawton.

STATEMENT OF WAYNE GILLEY, MAYOR, CITY OF LAWTON, OKLA.

Mr. GILLEY. Mr. Chairman, I am Wayne Gilley, mayor of Lawton. I have here my report and to speed up this hearing, may I have permission just to file it?

Senator JACKSON. Yes, sir.

Mr. GILLEY. In this report you will find where our city council recently reaffirmed our recommendation for this project.

Senator JACKSON. Fine. That will be included in the record at this point.

(The statement referred to follows:)

RESOLUTION

Whereas the Secretary of the Interior has recommended to the Congress of the United States that the Waurika project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities; and

Whereas the U.S. Senate has scheduled a hearing on S. 114, a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

Whereas the city of Lawton has endorsed all preliminary studies and other proceedings having to do with the development of said project: Now, therefore, be it

Resolved by the City Council, City of Lawton, Okla., That said council reaffirms its official position of endorsement of the Waurika project, pledges its continued support, and restates its intention to participate in the water repayment obligations as set forth in the Secretary of the Interior's plan for development; and be it further

Resolved, That Wayne Gilley, mayor, is authorized to present this resolution and the official statement of the city of Lawton in testimony to be given in support of this project before the U.S. Senate.

STATEMENT OF WAYNE GILLEY, MAYOR, CITY OF LAWTON, OKLA.

I am Wayne Gilley, mayor of the city of Lawton, Okla., having held this position since May 1, 1961. This is my first experience in serving the citizens of our city as an elected official. However, I have been a resident and taxpaying citizen of Lawton since 1931 and am, therefore, familiar with its needs and with its progress since that time. I operate a drycleaning business and am and have been vitally interested in the growth and progress of not only our city, but of Comanche County and the entire southwest Oklahoma area.

Since I appear heretoday on behalf of the governing body of our city, I wish to assure this committee that the city council is aware of the problems of both city and community and are progressive and dedicated public servants who desire to alleviate these problems to the best of their abilities. In action taken at a special meeting held September 6, 1961, the council reaffirmed its official endorsement of the Waurika project and are agreed that the establishment of this project will create opportunities for industrial development for this area, as well as provide water for irrigation of presently dry farmlands and for conservation and development of fish and wildlife. Of great importance, also, will be the controlling of floods which have in the past endangered life and lands in this area.

I feel privileged and honored to represent such a progressive city and governing body and am proud to present the following facts for your information and consideration:

PRESENT SUPPLY OF WATER

In 1904, the first public water system was installed, using as its source shallow wells in what was then the northeast part of the city. In 1906, it became apparent that this supply was not sufficient; and John Kennard, the then city engineer, was instructed to locate a new water supply. On March 4, 1907, Lawton voted bonds in the sum of \$200,000 to finance the construction of a dam on the Medicine Creek in the Wichita Mountains area, northwest of Lawton. A temporary dam 5 feet in height was constructed. In 1909 and 1910, due to drought conditions, an additional dam was necessary; and a permanent dam 16 feet in height with a base sufficient for a 50-foot dam was constructed. This was later raised to 50 feet. The lake was named Lake Lawtonka, meaning "limpid waters," and is on the original site selected in 1906. The watershed of the lake is 90 square miles. In December 1908, the U.S. Government asked the city of Lawton for a contract to supply nearby Fort Sill with water from Lake Lawtonka. This request was granted; the city of Lawton has continuously furnished the U.S. Government water since that date.

In 1918 and 1919, the first filtration plant installed by the U.S. Government, the cost of which was paid by the city of Lawton in water used by Fort Sill. Then in 1939 and 1940, the dam was again raised another 10 feet. Late in 1952 and 1953, 10-foot flood gates were installed in the spillway making a total storage capacity of 63,000 acre-feet of water. The filtration plant at the dam site has a daily capacity of 25 million gallons. Water mains from the lake serve Lawton and Fort Sill by one 16-inch line, two 24-inch lines, and one 30-inch line. Water storage at the filtration plant is 4,800,000 gallons; storage in the city, 4,300,000 gallons.

On December 18, 1956, the citizens of Lawton approved a bond proposal in the amount of \$6,182,000 to construct a reservoir on Cache Creek about 13 miles north of the city. The lake is completed and now filling with water. The connecting pipeline is under contract and expected to be completed in approximately 8 months. It has a drainage area of 240 square miles; and at a later date when flood gates are installed on the spillway, it will have a storage capacity of approximately 95,000 acre-feet of water. We are advised that it will supply a dependable yield of about 10.3 million gallons daily when operated in conjunction with the existing Lake Lawtonka.

The city records reveal that the city of Lawton water usage is as follows, exclusive of Fort Sill:

[In millions of gallons daily]

1951	-----	8.67	1956	-----	10.35
1952	-----	8.82	1957	-----	9.40
1953	-----	7.83	1958	-----	10.40
1954	-----	10.14	1959	-----	10.56
1955	-----	7.92			

The daily peak consumption occurred August 1961, when 22 million gallons of water were used.

The Oklahoma City office of the Bureau of Reclamation indicated that Lake Lawtonka has a dependable yield of about 10.7 million gallons daily.

In addition to the city of Lawton's responsibility of furnishing water to the U.S. Government for use at Fort Sill, it also furnishes water to the Fort Sill Indian School which is a federally operated institution under the Department of Indian Affairs of 250 resident students plus faculty. They also furnish water to the U.S. Public Health Hospital (formerly Kiowa Indian Hospital) which is a federally operated hospital maintained to provide service to approximately 16,000 Indians in southwest Oklahoma. All of the above institutions, in the past few years, have had greater demands for the use of water in about the same ratio as the average homeowner.

Out of necessity, water restrictions for the maintaining of lawns and shrubbery are imposed in the city of Lawton during the long, hot, arid summer months. This is a continued, aggravating problem and will continue to be so in the foreseeable future.

Senator JACKSON. As I understand it, the city of Lawton is in need of both the municipal and the industrial water?

Mr. GILLEY. That is right, sir. We are, I guess, the most rapidly growing city in Oklahoma in that by 1970 we will have more than 100,000 people and we are taking great areas in and people are coming in continuously.

Senator JACKSON. What is coming in there? What industry are you bringing in?

Mr. GILLEY. Industry and the fact that we are centrally located in America, and it is ideal from that standpoint.

Senator JACKSON. But your big growth, of course, is in connection with Fort Sill and the increase of operations at Fort Sill?

Mr. GILLEY. That is right, sir.

Senator JACKSON. Did any new industry come with it?

Mr. GILLEY. Small industries, yes, sir. Of course, we have hopes of getting other industries, but we have increased continuously over these past several years.

Senator JACKSON. Fine. We appreciate having your statement. Any questions?

Thank you very much.

Mr. GILLEY. Thank you, sir.

Mr. BULLARD. Mr. Milton Keating, the secretary-manager of the Lawton Chamber of Commerce.

**STATEMENT OF MILTON KEATING, SECRETARY-MANAGER,
LAWTON CHAMBER OF COMMERCE, LAWTON, OKLA.**

Mr. KEATING. Mr. Chairman and gentlemen, I am Milton Keating, secretary and manager of the Lawton Chamber of Commerce. I have held that position since May 1, 1943.

Senator JACKSON. We will file your statement at this point in the record, Mr. Keating.

(The statement follows:)

STATEMENT OF MILTON KEATING, SECRETARY-MANAGER, LAWTON CHAMBER OF COMMERCE, LAWTON, OKLA.

I am Milton Keating, secretary-manager of the Lawton, Okla., Chamber of Commerce, having held that position continuously since May 1, 1943.

The water committee of the chamber and the Lawton Chamber of Commerce have been interested in the Waurika Basin project since its inception:

1. To prevent the terrific flooding and damage to our neighbors at Waurika.
2. To furnish badly needed municipal water in a semi-arid region where there is a great shortage of water.
3. To furnish industrial waters to the plants desiring a location in southwest Oklahoma.
4. To further improve the agricultural production in the area by providing irrigation for 2,000 acres of land.
5. To give additional recreational facilities to the area, such as, boating, fishing, skiing, and hunting.
6. To assist in controlling the destructive floods of Red River.
7. To continue the expansion of the economic opportunities and the utilization of the natural resources in the area embracing Comanche, Stephens, Cotton, and Jefferson counties.
8. The Lawton Chamber of Commerce formally endorsed the project on the 10th day of November 1959, by a resolution to the Commissioner of the Bureau of Reclamation.

HISTORY OF LAWTON, OKLA.

August 6, 1901, was the date set by the President of the U.S. Government for the opening of the Kiowa Comanche lands for settlement. A one-half section was subdivided in lots for a townsite which was sold at public auction by the Federal Government. The proceeds of the lot sales were to be used for the organization of a city government, building of schools, city hall, courthouse, and et cetera. The new town was named Lawton in honor of General Lawton who had formerly served as a junior officer at nearby Fort Sill, Okla., as quartermaster. It is reported that on the day of the sale, there were as many as 50,000 people camped in the vicinity, and a small tent city was born overnight.

Lawton was incorporated on September 28, 1901, and has an aldermanic form of government with a mayor and city council.

Lawton, the third largest city in Oklahoma, is the county seat of Comanche County, and is located in southwest Oklahoma, 100 miles southwest of Oklahoma City, 50 miles north of the State line, and 100 miles east of the west State line of Oklahoma.

As of March 1960, Lawton has an area of 12 square miles. Lawton has had a rather phenomenal growth in the short period since it was established. Many things have contributed to this growth, such as: a junior college, the Fort Sill Indian School, the U.S. Public Health Hospital (formerly Kiowa Indian Hospital), agriculture, ranching, tourists, Fort Sill, wholesaling, jobbing, and manufacturing.

The population of Lawton according to the U.S. Census Bureau appears below:

Year	<i>City of Lawton</i>
1910.....	7,788
1920.....	8,930
1930.....	12,121
1940.....	18,055
1950.....	34,757
¹ 1960.....	61,697

¹ Source: Statistical Abstract of Oklahoma by the Bureau of Business Research, University of Oklahoma.

In the years 1958 and 1959, there were constructed in the city of Lawton 1,730 new homes. For the 10-year period of 1949-59, there were constructed 7,270 homes according to the city building inspector.

During the first of April 1960, a survey by the Home Builders and Realtors Association of Lawton revealed that there were 16,860 family-living units within this city with an occupancy percentage of 98.1.

Lawton is the principal distribution center for a wide area in southwest Oklahoma. It is the largest retail market in southwest Oklahoma serving a large area. In recent years it has developed a reputation as a medical center. There is a small industrial background of some 40 plants employing from 3 employees upward to 160. The Oklahoma Employment Security Commission reports that there are 1,125 people employed in industry. The principal manufactured products of Lawton are: distribution of frozen foods, meatpacking, men's hats, boat trailers, steel fabrication, paper cartons, house trailers, wire fence, dairy products, chili, and canned meats. Lawton maintains third place in the State of Oklahoma in the volume of retail trade according to the Oklahoma Tax Commission. In 1960, the retail sales of the city exclusively of beer, gasoline, and liquor were \$71,029,613.

Needs of water

Lawton being located on the edge of what is known as a semiarid region in Oklahoma has an annual average rainfall of approximately 30 inches. The 25-year period 1928-57: During 14 years of this period, the annual rainfall was less than 30 inches; in the year 1939, it was only 18.08. The longest period during which no measurable precipitation was recorded in Lawton was 73 days, from September 21, 1950, to January 1, 1951. The present water supply, known as Lake Lawtonka, with a small watershed of only 90 square miles, coupled with the recent expansion demands for water by the growth of Lawton and the activities of Fort Sill, along with the possibility that Lake Lawtonka will not be able to produce in excess of 10.7 million gallons of water daily, since during the drought period of 1953, 1954, and 1956, the total water in reserve dropped to only 11,000 acre feet; it was mandatory that an additional water supply be obtained in order to supply the daily demand of water; thus, the bond issue for the construction of an additional water supply on East Cache Creek. A thorough study of the entire area reveals that the only other additional supply of water available to the city of Lawton is at the proposed Waurika project.

An economic base study of the Wichita Mountains area of Oklahoma by Francis R. Cella and Neal J. Dikeman, Jr. of the Bureau of Business Research, College of Business Administration, University of Oklahoma, points out that in 1965, Lawton will require 19.7 million gallons of water daily; in 1975, 23.7 million gallons daily; 1985, 26.5 million gallons daily; 1995, 28.6 million gallons daily; 2005, 30.3 million gallons daily; and 2015, 31.5 million gallons daily. Thus with the present source that will yield 20 million gallons daily, by 1965 we will require an additional water supply according to the above figures in the following amounts:

1975: An additional 4.7 million gallons daily.

1985: An additional 8.8 million gallons daily.

On January 9, 1902, it assumed an artillery aspect; and in 1905, it definitely became an artillery post. In 1907, when the Field Artillery was established as a separate branch, the 1st Field Artillery was organized with regimental headquarters and three of its six batteries stationed at Fort Sill. In 1911, the School of Fire was established at Fort Sill. In April of 1919, the name was changed to the Field Artillery School. It was designated as the Artillery Center in November of 1946; and in 1957, it was designated the U.S. Army Artillery and Missile Center and the U.S. Army Artillery and Missile School.

The area of the reservation of Fort Sill is approximately 100,000 acres. The replacement costs of the investment of the U.S. Government at Sill would exceed one-half billion dollars. Training for surface-to-surface missiles is done at Fort Sill.

The post is one of the important Army installations in the Nation where training in all phases of artillery and surface-to-surface missiles is conducted. The Artillery and Missile School has an output of 8,500 officers and men an-

nually, with an average resident class of approximately 2,500 students including 145 allied officers from the free world. The curriculum includes 44 different courses in artillery and surface-to-surface missiles. An advance training program for the army is conducted at Fort Sill as well as an Officers Candidate School.

All of the Artillery National Guard units, Artillery Reserve units, and Artillery ROTC students come to Sill for training during the summer months.

The water requirements of Sill for the following periods are below :

Year	Popula- tion	Average daily con- sumption ¹	Average daily per capita	Year	Popula- tion	Average daily con- sumption ¹	Average daily per capita
1954.....	23,093	2.69	108	1960.....		3.12	
1955.....	17,429	2.30	124	1961.....		3.25	
1956.....	17,333	2.33	140	1962.....		3.25	
1957.....	17,436	1.95	119	1963.....		3.25	
1958.....	17,376	2.26	123	1964.....		3.25	
1959.....	20,607	2.52	133	1965.....		3.25	

¹ Millions of gallons.

Remarks: Estimates 1960-65 based on increased on-post population due to completion of Capehart housing. Daily per capita usage increased, based on as increased supply and removal of restrictions.

Recreational

Lawton is extremely fortunate in having the Wichita Mountains Wildlife Refuge operating adjacent to it. The refuge is comprised of approximately 65,000 acres containing herds of buffalo, elk, deer, Texas longhorn cattle, and a variety of birds and wild turkeys. The area is rather unusual in that approximately 30,000 acres are set aside for recreational purposes which were designed to accommodate 100,000 visitors annually. The records reveal that during the past 12 years the attendance in the recreational area approaches 1 million visitors or more each year.

Visitor Use—Annual Total

1948.....	186,630	1955.....	872,224
1949.....	312,524	1956.....	845,600
1950.....	346,181	1957.....	906,256
1951.....	677,926	1958.....	747,000
1952.....	713,495	1959.....	899,000
1953.....	742,047	1960.....	1,023,000
1954.....	852,286		

Source: Records of Wichita Wildlife Refuge. These people come from western Oklahoma, western Texas, southern Oklahoma, and northern Texas.

It is a known fact that the development of the Waurika project will further attract visitors to the four-county area of Comanche, Stephens, Cotton, and Jefferson.

Fish and Wildlife

Although there are 27 lakes in the Wichita Mountains Wildlife Refuge, only 1, of approximately 350 acres, permits boating. Lake Lawtonka also permits boating and water skiing. All of these lakes receive tremendous fishing pressure; and many, many of the residents of southwest Oklahoma are forced to drive more than 125 miles to Lake Texoma to enjoy fishing, boating, and water skiing. It is felt by the residents of the four-county area that the construction of the Waurika project will tremendously enhance the fishing and hunting opportunities as well as boating and skiing in southwest Oklahoma.

Water consumption: Tabulated by months, millions of gallons, and average daily use by months

Month	1954		1955		1956		1957	
	Million gallons	Average daily use	Million gallons	Average daily use	Million gallons	Average daily use	Million gallons	Average daily use
January	53,792,000	1.73	54,072,000	1.68	48,735,000	1.57	45,567,000	1.47
February	59,190,000	1.91	55,574,000	1.82	49,433,000	1.60	43,488,000	1.40
March	56,898,000	2.03	53,181,000	1.90	52,520,000	1.81	36,279,000	1.29
April	68,643,000	2.22	62,377,000	2.01	65,160,000	2.10	43,506,000	1.40
May	71,518,000	2.38	71,787,000	2.29	81,446,000	2.71	54,072,000	1.80
June	96,966,000	3.13	69,714,000	2.35	104,700,000	3.38	59,085,000	1.93
July	134,712,000	4.49	98,623,000	3.29	103,371,000	3.46	100,287,000	3.34
August	117,702,000	3.80	107,064,000	3.45	99,054,000	2.87	97,002,000	3.13
September	118,836,000	3.83	88,830,000	2.87	79,533,000	2.57	91,071,000	2.94
October	79,776,000	2.66	62,748,000	2.09	74,133,000	2.47	51,066,000	1.70
November	67,059,000	2.16	58,941,000	1.90	46,790,000	1.51	46,782,000	1.51
December	53,347,000	1.94	57,069,000	1.90	48,420,000	1.61	41,904,000	1.40
Total	983,439,000		840,980,000		853,695,000		710,109,000	
Average		2.69		2.30		2.33		1.95

Month	1958		1959		1960		1961	
	Million gallons	Average daily use	Million gallons	Average daily use	Million gallons	Average daily use	Million gallons	Average daily use
January	33,687,000	1.09	49,428,000	1.60	62,670,000	2.02	70,397,000	2.27
February	45,405,000	1.46	56,952,000	1.84	77,305,000	2.49	81,112,000	2.89
March	45,477,000	1.62	58,095,000	2.07	71,336,000	2.46	81,081,000	2.61
April	54,972,000	1.77	68,949,000	2.22	82,656,000	2.42	89,473,000	2.98
May	62,649,000	2.09	70,677,000	2.35	86,729,000	2.38	99,274,000	3.20
June	108,270,000	3.49	92,043,000	2.97	102,944,000	3.43	107,760,000	3.59
July	100,944,000	3.36	86,526,000	2.88	122,149,000	3.93	124,986,000	4.03
August	105,660,000	3.41	102,726,000	3.31	118,863,000	3.83	117,352,000	4.17
September	92,061,000	2.97	111,263,000	3.59	126,312,000	4.21		
October	64,098,000	2.14	83,844,000	2.79	93,408,000	3.01		
November	61,137,000	1.97	70,974,000	2.29	82,001,000	2.74		
December	51,984,000	1.73	67,735,000	2.26	77,294,000	2.49		
Total	826,344,000		919,212,000		1,103,667,000			
Average		2.26		2.52		2.95		

Remarks: Tabulations show monthly usage in millions of gallons, and the average daily use per month and average for the calendar year.

Water consumption study, Fort Sill

Item	1954	1955	1956	1957	1958	1959
Adjusted population	23,093	17,429	17,333	17,436	17,376	20,607
Water consumption:						
Total yearly	983,439,000	840,980,000	853,695,000	710,109,000	826,344,000	919,212,000
Daily averages	2.69	2.30	2.33	1.95	2.26	2.52
Daily per capita	108	124	140	119	123	133
Rainfall yearly (inches)	20.57	33.68	20.37	36.79	22.58	37.67

REMARKS

Adjusted population: Resident population, Fort Sill, plus $\frac{1}{4}$ of military residing offpost and $\frac{1}{4}$ civilian employees.

Water consumption: Totals shown are for calendar years, metered delivery. Consumption in Artillery Village added to totals beginning Sept. 1, 1959.

Daily averages: Shown in millions of gallons.

Daily per capita: Total consumption shown divided by average daily population shown.

Rainfall, yearly: Totals from weather records maintained by post engineer, Fort Sill.

Water consumption study, Fort Sill—Continued

Calendar years	Popula- tion	Average daily con- sump- tion ¹	Average daily per capita	Calendar years	Popula- tion	Average daily con- sump- tion ¹	Average daily per capita
1954	23,093	2.69	108	1960		3.12	
1955	17,429	2.30	124	1961		3.25	
1956	17,333	2.33	140	1962		3.25	
1957	17,436	1.95	119	1963		3.25	
1958	17,376	2.26	123	1964		3.25	
1959	20,607	2.52	133	1965		3.25	

¹ Millions of gallons.

Remarks: Estimates 1960-65 based on increased onpost population due to completion of Capehart housing. Daily per capita usage increased, based on an increased supply and removal of restrictions.

Senator JACKSON. Is there anything that you would like to add that has not been brought out here?

Mr. KEATING. I believe not, Mr. Chairman. I merely attempted to briefly give the reasons why the organization is for this, and give you a brief history of the city of Lawton, and then discuss the future needs of our water as far as projected from statements made by a study made by the Bureau of Business Research, University of Oklahoma.

Senator JACKSON. Did you have to ration water a while back here in Lawton?

Mr. KEATING. Yes, sir. My statement will reveal that in 1953 during a drought period our visible water supply got down to 11,000 acre-feet. It was dangerously low.

Senator JACKSON. Any questions?

Senator HICKEY. Mr. Keating, I wonder if your city has had a survey made of the economic impact that the recreation program developed by such project would give to your general area?

Mr. KEATING. No. I should not say no. In this survey that was made by the Bureau of Business Research, that is discussed at length. We are fairly familiar with it due to the fact that there is a wildlife refuge located adjacent to our city which last year attracted more than a million visitors. There are 23 lakes in there for fishing and recreation.

Senator HICKEY. Did they give you an estimate of the amount of money that will come into your area?

Mr. KEATING. No, they did not reveal that. The figure commonly used in Oklahoma is that the average will be about \$12 a day, not quite as high as it is in Colorado.

Senator HICKEY. That is all.

Senator JACKSON. Senator Burdick?

Senator BURDICK. No questions.

Senator JACKSON. Thank you, Mr. Keating.

Mr. KEATING. Thank you.

Mr. BULLARD. Mr. Bill Sharp, mayor of Comanche.

Mr. SHARP. Mayor Bill Sharp from Comanche, Okla.

Senator JACKSON. Fine. Go ahead.

STATEMENT OF W. N. SHARP, MAYOR, CITY OF COMANCHE, OKLA.

Mr. SHARP. I would like to submit a complete statement from the City of Council of Comanche at this time to this committee, Mr. Chairman.

Senator JACKSON. Fine. That will be included at this point in the record.

(The statement referred to follows:)

STATEMENT OF W. N. SHARP, MAYOR, CITY OF COMANCHE, OKLA.

Mr. Chairman and members of the committee, the city of Comanche, Okla., incorporated as a town November 23, 1898, was changed to a city on June 16, 1960. It is located in southern Stephens County, on Cow Creek, 10 miles south of Duncan, Okla., the county seat of Stephens County. We are also on the intersection of U.S. Highway 81 and State Highway 53. We are on the main line of the Rock Island Railroad.

The city is at an elevation of 1,020 feet above sea level and our population as shown by the 1960 census is 2,072.

The present water supply is obtained from a 2,455-acre-foot reservoir, located approximately 4 miles east of Comanche on the Mud Creek Basin, a tributary of Red River. The drainage area tributary to the reservoir is only 3½ square miles. Our reservoir was completed in 1936. In the drainage area of Comanche Lake there are oil operations which are a pollution hazard to our water supply. Our present water supply is the bare minimum for the present population, and until we obtain additional water no industrial expansion is possible.

Comanche, Okla., is located in a farming area. However, we have 135 of our residents that are employed at Halliburton Co., located 10 miles north of Comanche. Comanche contributes roughly one-half of the labor force at D-X Sunray refinery, situated 3 miles north of Comanche.

The construction of the Waurika Reservoir would make available to the city of Comanche an abundant water supply which would enable us to expand industrially as well as allow irrigation in our area.

Comanche, flooded many times in the past by Cow Creek, has made local improvements to the streambed, and succeeded in avoiding serious flooding hazard since 1955. Flood control on a limited local scale will not suffice, however, under abnormal weather conditions.

Cow Creek and Beaver Creek intersect at Waurika, Okla., and we in Comanche have assisted with boats, tents, and aided in rescue work at Waurika many times in the past. The diverting of Beaver Creek into the proposed reservoir will materially assist both communities in averting flood hazards.

The Waurika Reservoir would afford this section of southwestern Oklahoma an excellent recreation area. Many of our residents have to travel to Lake Murray and Lake Texoma, 100 miles, to enjoy boating, skiing, and good fishing. An industry that we were trying to obtain went to Ardmore because of recreational facilities that was obtained at Lake Murray and Lake Texoma.

Comanche is a growing community. In 1951 we had 780 water meters. In 1960 we had 942. In 1950 we had 585 telephones and in 1960 we had 1,021. In 1950 our sales tax reports showed \$29,842.03; and in 1959 it was \$47,857.56. In 1940 the assessed valuation was \$368,352; in 1960 it was \$4,783,560. The total bank deposits for the year 1950 was \$1,116,399; for 1960 they were \$1,580,336.

In 1960, Comanche black-topped 55 streets. This year, so far, we have black-topped 47 of our streets. Within 1 year every street in Comanche will be made all-weather streets.

A new \$40,000 post office is being constructed in Comanche at this time. The new modern high school plant has a school enrollment of 853 students.

Our new telephone office with dial equipment that was installed at a cost of \$93,000. Our businessmen are young and progressive and with an adequate water supply, flood control, and recreational facilities, we should double our population in 10 years.

RESOLUTION

Whereas the Department of the Interior has recommended to the Congress of the United States that the Waurika project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities; and

Whereas the U.S. Senate has scheduled a hearing on a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

Whereas the mayor of the city of Comanche, by authority of the city council, has signed the petition to form the Waurika Project Master Conservancy District; and

Whereas the city of Comanche has endorsed all preliminary studies and other proceedings having to do with the development of said project: Now, therefore, be it

Resolved by the City Council of the City of Comanche, Okla., That said council reaffirms its official position of endorsement of the Waurika project, and restates its intention to participate in the water repayment obligations as set forth in the Department of the Interior's plan for development, pledges its continued support; and be it further

Resolved, That W. N. Sharp, mayor of the city of Comanche, Okla., is authorized to present this resolution in testimony to be given in support of this project before the U.S. Senate.

Senator JACKSON. Have you had to ration water in Comanche?

Mr. SHARP. Yes; we have. We have one small reservoir of about 2,700 acres of water level there covering the water supply system and that is all the water.

Senator JACKSON. Your problem is both meeting the current requirements during a low water period and the long term. Is that essentially it?

Mr. SHARP. That is right. That is the only place that we have a chance for a reservoir there. I have lived in Comanche there since 1948, and I was in the flood in 1951 and 1952 in our town which flooded our entire Cow Creek there.

Senator JACKSON. What year was that?

Mr. SHARP. 1951, when Waurika had a pretty bad flood.

Senator JACKSON. How much damage did it do in the Comanche area?

Mr. SHARP. I could not estimate that exactly, but it was quite a bit. Quite a few houses floated downstream.

Senator JACKSON. The Corps of Engineers will have all those figures in connection with the flood control.

Mr. SHARP. Yes; they will.

Senator JACKSON. Thank you very much, Mr. Sharp.

Mr. SHARP. Thank you.

Mr. BULLARD. Ferrell Phillips, city manager of Walters, Okla.

**STATEMENT OF FERRELL PHILLIPS, CITY MANAGER,
WALTERS, OKLA.**

Mr. PHILLIPS. Ferrell Phillips, sir; I have here, Mr. Chairman, a recent resolution reaffirming the city of Walters' position and a prepared statement that I would like to offer for the record.

Senator JACKSON. All right.

Do you have anything additional that has not been brought out here?

Mr. PHILLIPS. No, sir; other than the fact that we have had tests for water wells completed in 19 holes with no results; just salt water.

Senator JACKSON. You have had all salt water results?

Mr. PHILLIPS. Yes, sir; salt water.

Senator JACKSON. How many drillings?

Mr. PHILLIPS. Nineteen test holes. I did not bring that out in my statement.

Senator JACKSON. Have you had the same problem of water rationing?

Mr. PHILLIPS. Yes, sir. We have a nice lake. However, we only have a 5-square-mile watershed. That is the problem.

Senator JACKSON. Thank you. We appreciate having your statement very much and it will be included at this point in the record.

(The statement referred to follows:)

STATEMENT OF ERNEST SMITH, MAYOR, CITY OF WALTERS, OKLA.

Mr. Chairman and members of the committee, the City of Walters, Okla., founded in 1903, is located on the drainage of the sheds of East Cache Creek and West Cache Creek, which flow in a southerly direction on the east and west sides of the city respectively. The city is at an elevation of 1,006 feet above sea level. Our population as shown by the 1961 census is 2,825.

The present water supply consists of four gravel-treated wells north of the city and the Boyer Lake northwest of the city. The city has had to abandon two other wells because of pollution by salt water from oil field operations and we face a very strong possibility of having to abandon others for the same reason.

The Boyer Lake was constructed in 1936 and impounded approximately 1,593 acre-feet of water on Little Snake Creek, a tributary of East Cache Creek. Surface area of the lake at spillway level was 165 acres. Some siltation of the lake has occurred in the past 24 years intervening since its construction. Present storage at spillway level is 1,359 acre-feet, indicating a loss of 234 acre-feet, or approximately 15 percent of the original capacity. The drainage area of Little Snake Creek, above Walters Dam, being only 5 square miles in area, affords such a small amount of runoff water that only on a few occasions has water gone around the lake spillway. The city has, therefore, been forced many times to enter the season of heavy water demand with the lake only one-half to two-thirds full.

Construction of the Waurika Reservoir would make available to the city of Walters an abundant water supply which would alleviate the most harassing problem we of the city of Walters are required to face from year to year. So often, we find ourselves wondering if this might be the year we will face a serious summer drought. We can recall that in the 1930's we had to ration or curtail the use of water during the summer months, as some of our neighboring cities have had to do in years past.

In addition to municipal water supply, the Waurika Reservoir would afford other very beneficial functions such as flood control and irrigation.

Almost yearly we have watched Waurika, our neighboring city to the south, contend with very disastrous and damaging floods. Many times residents of Walters have taken boats and equipment into the Waurika area to assist in the rescue efforts. We very seriously doubt if anyone, even officials of the city of Waurika, can closely estimate the damage in dollars to the residential and business establishments of the city due to these floods.

The Waurika Reservoir would afford this section of southwestern Oklahoma an excellent recreation area. At the present time we must travel 125 to 175 miles round trip to enjoy anything comparable for boating, skiing, or fishing in the dry, hot summer here in this section.

We the city officials and other interested residents of the city of Walters, have studied the feasibility report and are of the opinion that this is a worthy and just project and that we of the city are willing and able to assume the repayment schedule as set forth in the report. As evidence of our position, we are submitting for the record a current resolution which reaffirms our endorsement of the project and indicates our intention to participate in its development through an appropriate repayment contract.

RESOLUTION No. 346

Whereas the Department of the Interior has recommended to the Congress of the United States that the Waurika project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities; and

Whereas the U.S. Senate has scheduled a hearing on S. 114, a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

Whereas the city of Walters has endorsed all preliminary studies and other proceedings having to do with the development of said project; and

Whereas the mayor of the city of Walters, by authority of the city council, has signed the petition to form the Waurika Project Master Conservance District: Now, therefore, be it

Resolved by the city council of the city of Walters, Okla., That said council reaffirms its official position of endorsement of the Waurika project, pledges its continued support, and restates its intention to participate in the water repayment obligations as set forth in the Department of the Interior's plan for development; and be it further

Resolved, That Ferrell F. Phillips, city manager, is authorized to present this resolution and the official statement of the mayor of the city of Walters in testimony to be given in support of this project before the U.S. Senate.

Mr. BULLARD. Mr. Dave Richardson, former mayor of Temple, Okla.

Senator HICKEY. Mr. Chairman, I wonder if we may just ask the city manager one question?

Senator JACKSON. Yes, sir.

Senator HICKEY. Do you have any idea what the cost of the drilling of these wells that bore no fruit was to your municipality?

Mr. PHILLIPS. Yes, sir. We had a contract with the Lane Western Drilling Co., of Wichita, Kans., and they were drilled at the expense of \$1 per foot and it was approximately \$1,500. We hit the so-called red bed, and they say you will never find water below that and we, of course, stopped there, 28 to 40 feet, and we did go to 120 feet on some tests.

Senator HICKEY. This is just money lost.

Mr. PHILLIPS. That is right. We have made a very diligent effort to find more water but it is not there.

Senator JACKSON. Thank you very much.

Mr. PHILLIPS. Thank you.

Senator JACKSON. Mr. Richardson.

STATEMENT OF DAVE RICHARDSON, REPRESENTING THE MAYOR OF THE CITY OF TEMPLE, OKLA.

Mr. RICHARDSON. I am Dave Richardson, Temple, Okla.

Senator JACKSON. You have a prepared statement?

Mr. RICHARDSON. Yes, sir.

Senator JACKSON. Whom are you representing?

Mr. RICHARDSON. I am representing the town council and mayor. I have a resolution by the council giving me authority to represent him.

Senator JACKSON. All right, sir.

Mr. RICHARDSON. I had been mayor there for the past 18 years until this year, and, incidentally, I did not file for office again.

Senator JACKSON. You just got tired.

Mr. RICHARDSON. I got tired.

Senator JACKSON. Your statement will be included in the record at this point.

(The statement referred to follows:)

STATEMENT OF CHARLES PRATHER, MAYOR, TOWN OF TEMPLE, OKLA.

Mr. Chairman and members of the committee, Temple is located in Cotton County in southwestern Oklahoma about 12 miles west of the dam and 4 miles west of the reservoir of the proposed Waurika project. Although not in the Beaver Creek watershed, Temple's location is strategic in that the pipeline from the reservoir to Lawton will pass through town. It will supply Temple with an adequate supply of suitable quality water for present and future municipal and industrial needs at a reasonable and feasible cost (average 5.2 cents per 1,000 gallons). Its location will also enable Temple to benefit directly and substantially from the fish and wildlife program and the recreational facilities of the project.

Temple obtains its water from 13 shallow wells in the alluvium of Cache Creek. The well field is about 2½ miles west of town along the south side of State Highway No. 5. Water consumption totaled an average of 92,000 gallons per day in 1940; 125,000 gallons per day in 1950; 175,000 gallons per day in 1955; and 156,000 gallons per day in 1959. During peak months it has been necessary for Temple to supplement its ground water by pumping from Cache Creek.

Since information was gathered for the plan for development by the Bureau of Reclamation, Temple has acquired a new garment industry. Hagggar Co., Dallas Tex., located in Temple in 1958 and at the present time employe 270 workers.

While the employment in basic agriculture will increase little in the future, employment in the mining of oil and gas should increase considerably as greater efforts are made to meet rising demands. Some chemical production can be started eventually in the community as well as the production of some stone and clay products. In addition there will be other increases in basic manufacturing expansion.

City officials desire to obtain all of their future water supplies from the project and have adopted the forecast of future needs prepared by the Bureau of Business Research. The estimated future water requirements for Temple, as found in table 12 of the plan for development are shown below:

TABLE 12.—Estimated water requirements, city of Temple

Estimated total requirement, University of Oklahoma		Adopted by local interests	Present sources ²	Adopted additional requirements
Year	Bureau of Business Research ¹			
1965	0.18	0.18		0.18
1975	.22	.22		.22
1985	.26	.26		.26
1995	.32	.32		.32
2005	.38	.38		.38
2015	.40	.40		.40

¹ Adjusted from 1960 to 2010.

² Present sources would be abandoned.

Especially since 270 basic workers have been employed who were not considered in the report, it is evident that Temple will have to obtain a sizable increase in its available water supply if its economic development potential is to be realized.

The officials of Temple recognize the necessity, desirability, and feasibility of this project. The many favorable reports of the various State, regional, and Federal agencies of Government throughout many years of investigations, surveys, and development of plans for this project, are the basis for this decision by the officials of Temple, Okla.

Temple needs water. We are willing and able to pay for it. We join the good people of our neighboring towns and area in petitioning the Congress of the United States for this project for the benefit of our own people and the general economic welfare of the Nation.

We accordingly submit as an attachment to this statement a current resolution reaffirming our endorsement of the Waurika project.

RESOLUTION

Whereas the Department of the Interior has recommended to the Congress of the United States that the Waurika project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities; and

Whereas the U.S. Senate has scheduled a hearing on S. 114, a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and Whereas the town of Temple has endorsed all preliminary studies and other proceedings having to do with the development of said project; and

Whereas the mayor of the town of Temple, by authority of the town council, has signed the petition to form the Waurika Project Master Conservancy District. Now, therefore, be it

Resolved by the town council of the town of Temple, Okla., That said council reaffirms its official position of endorsement of the Waurika project, pledges its continued support, and restates its intention to participate in the water repayment obligations as set forth in the Department of the Interior's plan for development; and be it further

Resolved, That Dave Richardson is authorized to present this resolution and the official statement of the mayor of the town of Temple in testimony to be given in support of this project before the U.S. Senate.

Senator JACKSON. Do you have the same problem on municipal water?

Mr. RICHARDSON. Yes, sir.

Senator JACKSON. What is the population of Temple?

Mr. RICHARDSON. Approximately 1,300.

Senator JACKSON. 1,300?

Mr. RICHARDSON. Yes, sir.

Senator JACKSON. What about the flood situation?

Mr. RICHARDSON. We are not bothered with the floods.

Senator JACKSON. You are primarily concerned about meeting the municipal water requirements?

Mr. RICHARDSON. Municipal and industrial.

Senator JACKSON. Limited industrial?

Mr. RICHARDSON. We have a factory there now that employs 260 people.

Senator JACKSON. What kind of a factory?

Mr. RICHARDSON. Men's dress slacks.

Senator JACKSON. They do not use much water.

Mr. RICHARDSON. Not a lot, but we have to ration water and we certainly cannot ration them. We have to let them have it.

Senator JACKSON. Thank you very much for your statement. We certainly appreciate your coming, Mr. Richardson.

Mr. RICHARDSON. Thank you.

Mr. BULLARD. We have Mr. Harvey Elliott, who will conclude our witnesses, city manager of the city of Waurika.

STATEMENT OF H. B. ELLIOTT, CITY MANAGER, REPRESENTING
THE MAYOR OF WAURIKA, OKLA.

Mr. ELLIOTT. Mr. Chairman and members of the committee, I am Harvey Elliott, city manager of Waurika.

Senator JACKSON. You are making the statement for Mayor George Brown?

Mr. ELLIOTT. I am making the statement for Mayor George Brown upon the authorization of the city commissioners of Waurika.

Senator JACKSON. That statement will be included in the record at this point.

(The statement referred to follows:)

STATEMENT OF GEORGE A. BROWN, MAYOR, CITY OF WAURIKA, OKLA.

Mr. Chairman and members of the committee, Waurika, the county seat and principal trading center of Jefferson County, Okla., operates under a city charter and commissioner-manager form of city government. Our city is privileged to be well situated among good neighbors and to have excellent facilities for travel and transportation. Ardmore Okla., is 50 miles east on U.S. Highway 70, which forms South Boundary Street across Waurika. Wichita Falls, Tex., is 35 miles southwest by way of U.S. Highway 70 and State Highway 79, Duncan, Okla., is 23 miles north on U.S. Highway 81, which passes alongside Waurika less than one-half mile to the east. Lawton, Oklahoma is 52 miles northwest on State Highway 5, which passes through Waurika. Waurika is a division point on the main line of the Rock Island Railroad from Fort Worth, Tex. to El Reno, Okla. The Rock Island also has a branch line running out of Waurika to Lawton, Okla.

Waurika became known in June 1902, when the first town-lot sale held there was promoted by the Kingfisher Improvement Co. The original township of Waurika and the first addition, West Waurika, were platted and sold. The present business district was within the original township of Waurika. Two brothers, T. B. and E. J. Kelley, were developers in this company. A post office was opened in July 1902. Later that same year Waurika's first newspaper, the Waurika News, came into being.

The 98th meridian of longitude was the eastern boundary of the original township of Waurika. This meridian is better known to Oklahomans as Indian meridian, because it separated the lands of the Five Civilized Tribes from the lands of the Plains Indians to the west. Title to the lands of the Civilized Tribes could not be obtained at that time, because of governmental controls. Soon after statehood, when Waurika became the county seat of Jefferson County, some of these restrictions had been lifted. Waurika grew to the east and thereby gained the distinction of being the only Oklahoma county seat town through which Indian meridian passed. This restrictive eastern boundary was a contributing factor in the locating of the original township on the flood plains of Beaver and Cow Creeks.

So at that time all of Waurika lay along Beaver Creek and its tributary, Cow Creek, and around the confluence of the two streams. The pioneer fathers could dip water from either channel. Both were beautiful streams that provided sparkling clear water. The Choctaw Indians had a colorful name for clear water—Waurika—hence the name of our town.

The location of the entire areas of original Waurika and West Waurika, and parts of other additions made later, has presented a serious and very difficult problem. Don Morrison will present testimony related to that problem in support of the need for flood control.

Although Waurika has a great surplus of good quality surface water that needs to be controlled and used, it is recognized that we need an improved water supply for our present needs, and an additional water supply would be required to make possible the urban and industrial growth and development of our city.

Waurika on its own initiative has thoroughly investigated sources of water supply that might be developed within its own resources. The investigations show that such a water supply cannot be developed by the city. We must look to the Waurika Reservoir as the most satisfactory water supply that is available to us.

Of 26 shallow wells developed from many tests, 21 wells were producing in 1957. In April 1959, only 18 wells were producing. Those 18 wells still produce. Some have always been light producers and one or more have failed during drier periods each of the past three summers. The water is high in dissolved solids and is very hard, almost 25 grains per gallon. Maximum production is slightly less than 600,000 gallons per day. Peak usage has been 600,000 gallons per day. The trouble is that these never come together. Dependable minimum production during a severe and sustained drought is about 100,000 gallons per day. It is not unusual at some time during almost any summer to request voluntary rationing of water. Such requests were made in August 1961 and July 1959. Neither was a drought year.

Average daily use of water in 1940 was 89,000 gallons per day; in 1950 it was 117,000 gallons per day; and in 1959 it was 169,873 gallons per day. The increase in water usage over this 19-year period was 91 percent. Due to automation, Jefferson County and Waurika have suffered declines in population and economy. This has been the trend in predominantly agricultural regions. The population of Jefferson County declined from 15,170 in 1940 to 11,122 in 1950 and to 8,192 in 1960. Waurika declined from 2,458 in 1940 to 2,327 in 1950 and to 1,933 in 1960. This trend apparently has ceased, as we have had a gain from 814 water users in April 1959 to 839 in August 1961.

Waurika's financial condition has improved in the past 2 years. From July 1, 1959, to July 1, 1961, bonded indebtedness was reduced from \$154,500 to \$112,500; the valuation of city property increased from \$890,484 to \$978,832; and city revenues gained from \$54,293.42 to \$62,917.23. During the 2 years there has been no increase in rates for services. The tax rate for the sinking fund to retire bonded indebtedness has decreased.

Waurika recognized her problems and realizes that the economic growth of Jefferson County depends primarily upon the growth of Waurika. The growth of Waurika depends upon the initiative of local citizens to utilize the basic resources of the area. The great and good Book, in all its wisdom, repeatedly uses water as the symbol of life. We feel deeply that the Waurika Reservoir represents such a symbol.

Our city will benefit in many ways from all provisions of this multipurpose project. Our people will obtain plenty of water at reasonable rates for urban and industrial growth and development. Water would be delivered by gravity flow through 4.77 miles of aqueduct extending southward from the dam. This water would be of good quality, would be only 9 grains hard and would cost an average of only 4.1 percent per thousand gallons.

Complete flood control protection would be afforded along Beaver Creek to the mouth of Cow Creek, and there would be a high degree of protection below that point.

Water would be available for use in the growth of crops on 2,000 acres of excellent irrigation-type land lying immediately west of Ryan and about 10 miles south of Waurika. Irrigation of this land would greatly bolster the sagging agricultural economy of the trading area.

Many benefits, both direct and indirect, would accrue from the fish and wildlife and recreational phases of the project. Such facilities are needed for day use in the area and they would not appreciably detract from existing facilities.

The actual construction, operation, and maintenance programs outlined in the proposed project, together with the many economic benefits already mentioned, would contribute much to the economy and development of the general area.

The citizens of Waurika have understood their problems for many years and have taken advantage of every opportunity afforded them to do something about those problems. On June 15, 1955, following the worst flood in Waurika's history, the Beaver-Cow Creek Watershed Development Association was formed. On June 20, 1955, the mayor of Waurika proclaimed mobilization day and a large caravan was led through neighboring towns of north Texas and southern Oklahoma. In July 1955, Waurika collected \$7,077.65 for initial promotion of a water conservation and development program in this area. In May 1957, a second fund drive netted \$8,838.26, from which \$6,000 was contributed to the Beaver-Cow Creek Watershed Development Association. This association was credited with \$28,000 by the Bureau of Reclamation toward the investigation. Throughout all these years Waurika has cooperated to the best of her ability with agencies at local, State, area, and national levels by providing information and supplying necessary requests, resolutions of approval and other actions

required by the agencies. Waurika has actively participated in the Beaver-Cow Creek Watershed Development Association, the Oklahoma Reclamation Association, the North Texas-Southern Oklahoma Area Development Association, the Red River Valley Association, and the National Reclamation Association.

The officials of the city of Waurika realize that it would be impossible for them to develop such a multipurpose project. We realize, too, that substantial benefits from such a project accrue on a regional and interstate basis to other users. We consider the estimates of the governmental agencies to be adequate, and we respect the opinion of Government engineers that the project is economically feasible and is planned for maximum capacity development and optimum use. This is clearly in the public interest.

As evidence of our position we are submitting for the record a current resolution which reaffirms our endorsement of the Waurika project and restates our intention to participate in its development through an appropriate repayment contract.

The officials of the city of Waurika, Okla., on behalf of the people of Waurika and the good neighbors of the other project cities of Temple, Comanche, Walters, Duncan, and Lawton, all in Oklahoma, respectfully request that you help us to do that which we know we cannot do alone. We are convinced that this project will open up new avenues toward fulfillment of the splendid potential we possess here in this part of our great country.

RESOLUTION

Whereas the Department of the Interior has recommended to the Congress of the United States that the Waurika project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, for irrigation, for controlling floods, and for the conservation and development of fish and wildlife and the enhancement of recreational opportunities; and

Whereas the U.S. Senate has scheduled a hearing on S. 114, a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

Whereas the city of Waurika has endorsed all preliminary studies and other proceedings having to do with the development of said project; and

Whereas the mayor of the city of Waurika, by authority of the board of city commissioners, has signed the petition to form the Waurika Project Master Conservancy District: Now, therefore, be it

Resolved by the Board of City Commissioners of the City of Waurika, Okla., That said board reaffirm its official position of endorsement of the Waurika project, pledges its continued support, and restates its intention to participate in the water repayment obligations as set forth in the Department of the Interior's plan for development; and be it further

Resolved, That Harvey B. Elliott, city manager, is authorized to present this resolution and the official statement of the mayor of the city of Waurika in testimony to be given in support of this project before the U.S. Senate.

Financial statement, City of Waurika, Okla. (as of Sept. 6, 1961)

Actual valuation, estimated (at 18.22 percent actual rate)-----	\$7, 399, 512. 00	
Assessed valuation (latest date) (18.22 percent actual) including homestead exemptions-----		1, 348, 191. 00
Real property (including homestead exemp- tion)-----	\$872, 722. 00	
Personal property-----	198, 081. 00	
Corporate public service-----	277, 388. 00	
Net assessed valuation (latest date) (18.22 percent of actual excluding homestead exemption)-----		994, 799. 00
Total bonded indebtedness-----	112, 500. 00	
Sinking funds-----	29, 488. 98	
Net bonded indebtedness-----	83, 011. 02	
Ratio of net debt to net assessed valuation (percent)-----		8. 34
Population of Waurika (1960 census)-----		1, 933
Population of Waurika (present estimate)-----		1, 990

Waurika, Okla., Municipal and Industrial Water Use, 1960

[Jan. 1, 1961]

<i>Month</i>	<i>Gallons</i>
January-----	3, 574, 800
February-----	3, 685, 000
March-----	3, 116, 100
April-----	3, 182, 800
May-----	3, 650, 200
June-----	3, 930, 000
July-----	5, 154, 500
August-----	6, 957, 200
September-----	9, 232, 300
October-----	6, 343, 000
November-----	5, 680, 100
December-----	5, 584, 100
<hr/>	
Total, domestic and industrial-----	58, 090, 100
Fires, 93 at 10,000 gallons each-----	930, 000
<hr/>	
Total, including fires-----	59, 020, 100
5 percent additional; flushing, breaks, leaks, and taps-----	2, 951, 005
Backwashing filters; 365 days, at 17,000 gallons-----	6, 205, 000
<hr/>	
Total water used, 1960-----	<u>68, 176, 105</u>
<hr/>	
Total water used :	
1940-----	32, 485, 000
1950-----	42, 705, 000
1959-----	62, 003, 345
1960-----	<u>68, 176, 105</u>
<hr/>	
Percent of increase, 1940 to 1959-----	91. 0
Percent of increase, 1940 to 1960-----	109. 8

*Waurika water well production*¹—*Maximum, Aug. 15, 1960*

Well No. and location	Casing depth	Sand depth	Diameter	Type	Date	Maximum capacity
	<i>Feet</i>	<i>Feet</i>	<i>Inches</i>			<i>Gallons per minute</i>
1. Town Frisco addition-----	50	25	20	Brick	Prior 1918	25
2. Talley addition-----	50	25	8	Casing	1949	26
3. Talley addition-----	50	25	8	do	1949	28
4. 1 mile northwest-----	50	25	10	do	1949	29
5. 1 mile northwest-----	130	30	8	do	Prior 1939	15
6. 1½ miles northwest-----	130	30	8	do	Prior 1949	19
7. 1½ miles northwest-----	130	25	6½	do	Prior 1949	15
8. 1 mile west-----	50	25	6½	do	Prior 1949	13
9. 1 mile northwest-----	130	25	8	do	Prior 1932	17
10. ¼ mile south-----	50	25	8	do	1945	15
11. Ed Crew-----	50	25	8	do	1948	Failed
12. Ed Crew-----	50	25	8	do	1948	Failed
13. Ed Crew-----	50	25	8	do	1948	Failed
14. ¼ mile south-----	50	25	8	do	1948	15
15. ¼ mile south-----	50	25	8	do	1948	15
16. ¾ mile south-----	54	25	36	Concrete	1935	27
17. 2½ miles northwest-----	50	25	10	Casing	1954	28
18. 2½ miles northwest-----	50	25	10	do	1954	30
19. 2½ miles northwest-----	50	25	10	do	1954	29
20. 2½ miles northwest-----	50	25	10	do	1954	35
21. 2½ miles northwest-----	50	25	10	do	1954	35
Total-----						<u>416</u>

¹ Total production, 599,040 gallons per day.

WAURIKA, OKLA., AUGUST 15, 1959.

MAXIMUM WATER USAGE REPORT

On August 15, 1959, the city water plant pumped 600,000 gallons of water to the elevated tank that supplies the city's needs.

This is slightly more than the maximum production of Waurika's 18 producing wells (599,040 gallons per day), evidenced by the fact that the level of the water in the fresh water reservoir was slightly lowered.

Continued peak drawdown such as this will necessitate restrictions on the use of water.

Senator JACKSON. Is there anything that has not been brought out here, Mr. Elliott, that you might mention at this point?

Waurika is right in the heart of the flood area, is it not?

Mr. ELLIOTT. Yes, indeed.

Senator JACKSON. You are also in the heart of the water problem as well.

Mr. ELLIOTT. That is right.

Senator JACKSON. For your municipal and industrial use?

Mr. ELLIOTT. I might state that I would like to attach in addition to the resolution and the mayor's statement a financial statement and some statements as to municipal and industrial water usage.

Senator JACKSON. Financial statement of the city?

Mr. ELLIOTT. Yes, sir; and a statement as to water usage, and a statement as to the number of wells and types of wells and production, and a statement from the water superintendent affirming the maximum usage of water.

Senator JACKSON. All right, sir.

Have you used up your general obligation authority for general obligation bonds in Waurika?

Mr. ELLIOTT. No, sir.

Senator JACKSON. I understand that is set forth in the record in your statement of the mayor's on page 2.

Senator HICKEY. It shows your general obligations.

Mr. ELLIOTT. Yes, sir.

Senator HICKEY. What is your population?

Mr. ELLIOTT. 1,933.

Senator HICKEY. That is pretty nearly \$100 a person on your bonded debt?

Mr. ELLIOTT. About \$75.

Senator JACKSON. Any question?

Senator BURDICK. No questions.

Senator JACKSON. Thank you very much.

Just leave the statement with the reporter.

Mr. Bullard, does that conclude your witnesses?

Mr. BULLARD. Yes, that concludes our witnesses and we certainly want to express our appreciation to the committee for the courtesy in hearing us and we hope that we might have your favorable consideration.

Senator JACKSON. We want to express our appreciation to all of you gentlemen for coming here, and especially to Senator Kerr and Senator Monroney who arranged the hearing this morning.

We are pleased to have Congressman Wickersham come over from the House.

It is contemplated that Senator Anderson will return late tomorrow and the testimony from the departmental witnesses will be deferred

until his return at his request. As to whether that can be held later this week, I will have to talk to Senator Anderson when he returns, but that was the arrangement that we worked out and we will have a definite time on that when he returns.

Again we want to thank all of you gentlemen for coming, and we are all cognizant of the problem that you have in this area. It is different in each part of the country.

You have a real problem trying to meet your municipal requirements. At the same time you have a flood control situation that apparently is fairly serious and we will certainly look into this very carefully, and we are very, very grateful to you for coming. We appreciate having your fine statements and the trouble that you have gone to in preparing them and to provide the material.

If we need any additional material, we will be in touch with your Senators at the appropriate time.

Mr. BULLARD. I was going to say that and to say also that we realize that this does not solve our problem. It is just one of them. We have others that we are now in the process of working on.

Senator JACKSON. We want to explain that your Senators have been very diligent about this matter.

The reports were not up here from the Department, and they have problems, too, in the Department, until just, as a matter of fact, 2 or 3 days ago.

Under the rules that we follow in the Senate, and the same apply in the House, we want to have the views of the Department before we proceed.

I am sure you understand that.

Mr. BULLARD. Yes, sir.

Senator JACKSON. Thank you very much.

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

Senator MONRONEY. Thank you very much for the speed to which you have taken this hearing.

Senator JACKSON. Thank you.

(Whereupon, at 11:25 a.m., the subcommittee proceeded to other business.)

(Subsequently the following communication was received:)

STATE OF OKLAHOMA,
EXECUTIVE CHAMBERS,
Oklahoma City, September 14, 1961.

Re Waurika project, Beaver Creek, Red River Basin, Okla.

Hon. CLINTON P. ANDERSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, Senate Office Building, Washington, D.C.

DEAR SENATOR ANDERSON: I deeply regret that it was impossible for me to appear before your committee on Tuesday of this week when hearings were held on the Waurika project, located on Beaver Creek, Red River Basin, Okla. It is my understanding that the hearings will be continued on the project and Federal representatives will be heard on Friday of this week.

It will be greatly appreciated if you will include this letter as my statement in the record of the hearings in support of the project for authorization for construction.

This office has carefully reviewed the Waurika report with the assistance of the Oklahoma Water Resources Board, State department of health, department of wildlife conservation, Division of State Parks of the Oklahoma Planning and Resources Board, and the Oklahoma Department of Highways. We have previously advised the Secretary of the Interior of the urgent need for

development of the project for flood control for the Beaver Creek Valley and supplemental water supplies for the cities of Lawton, Duncan, Waurika, Comanche, Temple, and Walters, Okla., as well as a large oil refinery in that vicinity. There are no alternate water supplies available to these communities and industry either from ground water sources or surface water supplies. The Waurika project reservoir will supply this need.

Therefore, we respectfully request that your committee give favorable consideration and approval on Senate bill 114 which would authorize construction of the project. The development of this very essential project, in addition to flood control and supplemental water supplies to the areas, will also furnish a high degree of other benefits, such as fish and wildlife and recreational opportunities.

This office and Oklahoma, through its several State agencies, pledge their full support in the development and operation of the project so that the full maximum benefits will accrue to the project, as planned.

I urge your very careful consideration of the Waurika project.

Respectfully submitted.

J. HOWARD EDMONDSON, *Governor.*

WAURIKA RECLAMATION PROJECT, OKLAHOMA

WEDNESDAY, APRIL 4, 1962

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

The subcommittee met, pursuant to notice, at 10:30 a.m., in room 3110, New Senate Office Building, Senator Anderson (chairman) presiding.

Present: Senators Anderson (chairman of the full committee), Pearson, Allott, and Burdick.

Also present: Roy M. Whitacre, professional staff member; and Jerry T. Verkler, chief clerk.

The CHAIRMAN. We will now continue with S. 114, to authorize the Secretary of the Interior to construct, operate, and maintain the Waurika reclamation project, Oklahoma. Hearings on this measure were initiated on September 12, 1961, at which time complete testimony of witnesses from Oklahoma were heard. The meeting was recessed without hearing departmental witnesses who are here to testify today.

STATEMENT OF FLOYD E. DOMINY, COMMISSIONER OF RECLAMATION; ACCOMPANIED BY DONALD R. BURNETT; M. G. BARCLAY, AREA ENGINEER, OKLAHOMA CITY DEVELOPMENT OFFICE; WILLIAM M. WHITE, CHIEF OF RIVER BASIN STUDIES; AND JAMES T. McBROOM, CHIEF OF TECHNICAL SERVICE, SPORT FISHERIES AND WILDLIFE

Mr. DOMINY. I would like to bring up to the witness table with me Mr. Burnett, chief of my project development staff in Washington, and Mr. Barclay who is the area engineer in Oklahoma under whose immediate direction has been basically performed all the engineering and economic studies leading to this report.

Mr. Chairman, Assistant Secretary Holum had expected to be here this morning and present a brief statement in support of this bill, and if it pleases the chairman, I would like to have this in the record at this point.

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

The Department's planning report on the Waurika project was transmitted to the Congress on August 31, 1961. We strongly endorse the plan of development proposed therein and support the conclusions and recommendations of the report.

The report of the Department of the Interior on the proposed bill being considered here was sent to the chairman on September 11, 1961. We recommended

enactment of the bill and suggested a number of clarifying amendments. We are pleased to reiterate our recommendations here today and to present such additional information as the committee may desire.

The proposed Waurika project, located in south-central Oklahoma, has the principal purposes of providing a much-needed municipal and industrial water supply to six project cities and an oil refinery and providing water for irrigation of some 2,000 acres of high quality lands. It would also provide substantial recreation benefits and improved fishing opportunities in this area where such facilities are presently inadequate and much in demand. In addition, it would provide substantially full control of floods at the proposed damsite. Strong local support has been demonstrated for the proposal. The project is economically justified and financially feasible.

An aqueduct system would convey municipal and industrial water to the cities of Waurika, Comanche, Lawton, Duncan, Temple, Walters, and the DX-Sunray Refinery between Duncan and Comanche from the proposed reservoir. A pumping plant and distribution system would divert flows from Beaver Creek, downstream from the dam, and deliver them for irrigation of lands in the vicinity of Ryan, Okla., to provide a dependable water supply to permit wider crop diversification and provide increased crop yields and crop returns.

The existing low value stream fishing in the reservoir area would be replaced by a good reservoir fishing opportunity. Waterfowl and aquatic fur habitat would be provided which would offset the wildlife habitat lost by reservoir construction.

Minimum basic recreation facilities, such as access roads and parking lots, picnic areas, water supply and sanitation, beach developments, tree planting and grass seeding, would be provided with Federal funds. After authorization, formulation of a detailed recreation plan would be accomplished by cooperative efforts of Federal and State agencies, the water users and the proposed Waurika Project Master Conservancy District.

We believe the Waurika project is a highly desirable project which would provide maximum beneficial utilization of the water resources available and is essential to continued economic development of the area. We recommend favorable action on its authorization.

Mr. DOMINY. As Commissioner of the Bureau of Reclamation, I am pleased to appear before this committee in support of S. 114 to authorize construction of the proposed Waurika project.

This project is located in southwestern Oklahoma in Jefferson, Stephens, Cotton, and Comanche Counties. Waurika damsite is in Jefferson County about 6 miles northwest of Waurika on Beaver Creek, a tributary of Red River. The urban areas which would be furnished water supplies from Waurika Reservoir surround the Beaver Creek Basin. The lands to be irrigated from the reservoir are located along the north bank of the Red River near Ryan, Okla., near the confluence of Beaver Creek, about 20 miles downstream from Waurika damsite.

The water resource potentials of this area were summarized in the June 1955 report of the Arkansas-White-Red Basins Interagency Committee. Subsequently, representatives of the project cities and towns organized the "Beaver-Cow Creek Watershed Development Association" to promote developments for the use and control of water resources of the Beaver-Cow Creek Basin.

The Bureau of Reclamation in 1956 initiated reconnaissance investigation of the watersheds of the Beaver Creek and the other streams in that general geographic area to determine the problems, needs, and potentialities of those watersheds. This included an appraisal of available information on ground water and on surface water storage sites. Findings of this investigation were summarized in a report dated February 1957, which established that the water needs of the area could best be served by regulation of Beaver Creek flows at the

Waurika site to provide needed surface water supplies and related benefits. A feasibility report on the multiple-purpose Waurika project was completed in February 1960 and submitted to all concerned interests.

The project cities and other interests evidenced their full endorsement of the project plan, their willingness to repay the reimbursable capital costs in accordance with the repayment plan advanced in the report. They also expressed desire for expedited construction of the project as a Federal development.

The Waurika project would provide for maximum practicable regulation of Beaver Creek flows at the damsite for the dominant purpose of municipal and industrial water supply for six municipalities and an oil refinery and a vital national defense installation. It would provide for construction of the Waurika Dam and Reservoir; an aqueduct system to deliver Beaver Creek flows from the reservoir to the cities of Lawton (including Fort Sill), Duncan, Waurika, Comanche, Temple, Walters, and the DX-Sunray refinery; a pumping plant and distribution system at a point 20 miles below the damsite to deliver reservoir releases to lands in the vicinity of Ryan, Okla., for the irrigation of about 2,000 acres; and recreation and fish and wildlife facilities. The project would provide essentially full control of floods on Beaver Creek at the Waurika damsite and desirable flood control benefits along the Red River.

The CHAIRMAN. Can I stop you there so I will not forget it. This is a \$25 million project of which \$15 million, nearly \$16 million is municipal and industrial water.

Mr. DOMINY. Yes, sir.

The CHAIRMAN. If it is a project for irrigation the amount charged against irrigation does not bear interest under the reclamation law?

Mr. DOMINY. Yes, sir.

The CHAIRMAN. What about municipal and industrial water?

Mr. DOMINY. Yes, sir. That bears interest not only over the period of construction but over the repayment period.

The CHAIRMAN. That is what I wanted to get into the record if you had a project which was for the benefit of six municipalities and an oil refinery it looks like a change in the reclamation program. If the interest factor is added as it was in the Canyon project and the west Texas project, and other projects that you have had, then it is a different story.

Mr. DOMINY. This is a very excellent point and I want to say I think the Congress was very wise in passing the original reclamation project act to give us the kind of authority that has let us change our emphasis as the changing needs of the West justify. We had authority even in the 1906 act to bring municipal and industrial water into our program and the 1939 act reaffirmed this and as the needs of the areas in the West changed, we have been able to shift the emphasis.

The CHAIRMAN. If this nearly \$16 million bears interest, does that make the cost of water too high for Duncan and Waurika and Fort Sill, and so forth, or is it a reasonable charge?

Mr. DOMINY. It is still reasonable by comparison with their alternatives. It is not real cheap water as compared with some other cities but it is reasonable compared with other alternatives that these cities would have.

The CHAIRMAN. Very well.

Mr. DOMINY. Project studies indicate that the Waurika Reservoir will yield about 44,000 acre-feet of water annually. The predicted year 2015 demand is 39,000 acre-feet per year for municipal and industrial purposes. Until that year, there is ample surplus water available for irrigation of some 2,000 acres of land downstream from the reservoir. By the end of the initial 50-year municipal repayment period, needs for additional municipal water will then begin to encroach upon the supply available for irrigation. It is planned that this additional municipal water will be developed at a nearby reservoir site, as a second stage of development, and water supply therefrom can be integrated with that provided by the Waurika Reservoir.

There is an additional reservoir site on Deep Red Run Creek that we think can be fitted into the program at such time as the demand justifies it.

Land classification studies established that ample high quality lands are available for irrigation development. The project studies also established that inclusion of irrigation as a project purpose, using water that is surplus to municipal and industrial needs, would be economically justified. The increased crop returns which would result to the farmers and the increased income which would accrue to business interests in the surrounding areas supported this conclusion. They also established that the increased crop returns which would result from irrigation would permit the irrigators to pay all irrigation operation, maintenance, and replacement costs and repay all construction costs of the pumping plant and distribution system, as well as a portion of the joint reservoir costs allocated to irrigation. On this basis, utilization of the surplus waters for irrigation of 2,000 acres was deemed merited and included in the project plan. It provides for full utilization of valuable land and water resources.

The project plan contemplates that operation of the reservoir would recognize the primary demand for satisfying municipal and industrial water requirements. On this basis, the first 115,000 acre-feet of the 155,000 acre-feet of conservation storage capacity would be jointly used for municipal and industrial water supply and irrigation purposes and the last 40,000 acre-feet would be reserved at all times for municipal and industrial use.

The CHAIRMAN. I am lost again, sir; 2,000 acres. Are you going to put an irrigation charge of \$4 million against them?

Mr. DOMINY. We have an allocation of—

The CHAIRMAN. \$4 million, \$2,000 an acre?

Mr. DOMINY. Under the allocation process when you allocate that portion of the reservoir that is being utilized for irrigation and use the standard allocation procedures where we have multiple-purpose projects, it comes out to that figure. Now, on an incremental cost basis—

The CHAIRMAN. Doesn't this say you will charge \$4 million against the irrigation of 2,000 acres?

Mr. DOMINY. We allocate that but the farmer will not be expected to pay that full amount.

The CHAIRMAN. What will he pay?

Mr. DOMINY. He will pay about 25 percent.

The CHAIRMAN. \$500 an acre.

Mr. DOMINY. He will pay a little more than the incremental cost of adding irrigation works to this project. If we build it strictly for municipal water and charge it all to the cities, it could be built for \$750,000 less than if we had no irrigation. The incremental cost of irrigation is \$376 per acre.

The CHAIRMAN. What is the other \$3 million?

Mr. DOMINY. It is irrigation storage cost to be repaid but without interest, and it will be repaid from surplus moneys received from municipal and industrial water.

The CHAIRMAN. What I am trying to get at is it is repaid to the Treasury. We do not just lose it: \$4 million is set up for irrigation; \$1 million is repaid by the farmer and the other \$3 million is repaid as well, but without interest from municipal water.

Mr. DOMINY. They are agreeable to the addition of that extra cost into the repayment for municipal water.

The CHAIRMAN. Each time on these questions, we get the question of whether or not this is going to contribute surplus crops. What is the nature of the crop on these 2,000 acres? Is it just additional water to land that is already producing certain types of crops?

Mr. DOMINY. This is additional land that is already being cropped in the usual crops of Oklahoma which is cotton and feed grains and alfalfa hay. We think that when we irrigate this land some of it will shift into vegetables.

The CHAIRMAN. It may not contribute to, but it may help the surplus.

Mr. DOMINY. It will probably decrease the amount of surplus crops grown on this particular land because, under irrigation they can shift out of these surplus crops.

The CHAIRMAN. This is not new land being put to farming, it is land that is now being used.

Mr. DOMINY. It is good river bottom land already in agriculture production.

The CHAIRMAN. You have a rainfall in that area of 20 inches per year?

Mr. BARCLAY. Thirty inches.

Mr. DOMINY. As you well know a 30-inch average does not mean he gets it when he needs it every year. With irrigation he can shift to truck crops which he cannot do under natural rainfall conditions.

The Fish and Wildlife Service has found that the Waurika project would provide an increase in fishing opportunity of regional significance and waterfowl benefits of national significance. The existing stream fishery of low value would be replaced by a good reservoir fishing opportunity. Inundation of the reservoir area will eliminate some upland game habitat, but waterfowl and aquatic fur-animal habitat will be provided, which will offset the wildlife values lost due to reservoir construction. New fish and wildlife habitat would be provided by acquisition of some 3,500 acres of land adjacent to the reservoir, to be purchased in fee simple, to be developed and managed for fish and wildlife purposes and administered by the Oklahoma Wildlife Conservation Commission.

The CHAIRMAN. Who will acquire this land?

Mr. DOMINY. We will acquire it, sir, as part of the project cost.

In addition, it is contemplated that 2,580 acres of land above the 5-year flood frequency level would be purchased for use as a national waterfowl refuge. The reservoir is favorably situated for this purpose, and it would contribute substantially toward the solution of the acute problem of caring for and maintaining waterfowl populations in this flyway.

The CHAIRMAN. Who will acquire this land?

Mr. DOMINY. We would buy it as part of the project.

The CHAIRMAN. How much money is in the project for the purchase of this 6,000 acres of land?

Mr. BARCLAY. \$871,000.

The CHAIRMAN. \$150 an acre.

Mr. BARCLAY. About that.

The CHAIRMAN. Is that the customary practice to buy land and turn it over to the Wildlife Conservation Commission to be used as a National Waterfowl Refuge?

Mr. DOMINY. May I say, Mr. Chairman, it is becoming a customary practice to incorporate in all reclamation reservoirs in the 17 Western States the optimum of multiple-purpose uses incident to the use and enjoyment of the water in the surrounding areas.

The CHAIRMAN. Generally, this is public domain in some of the Western States and this happens to be in an area where you do not have available public domain and therefore have to acquire the land.

Mr. DOMINY. Exactly, most of the projects you have been familiar with over the years have been out where we have national forest lands or public domain lands for a major part and we can incorporate that land into the project but as we move into Oklahoma and Kansas and Nebraska with these projects if we are going to provide these kinds of benefits, in these thickly settled places then we have to buy land.

The CHAIRMAN. Did we buy any land on the Norman project?

Mr. BARCLAY. Not for fish and wildlife.

Mr. DOMINY. Development, operation, and management of this refuge area will be accomplished by the Federal Bureau of Sport Fisheries and Wildlife.

The National Park Service has concluded that the Waurika project could provide reservoir recreation opportunities of substantial value to the population of the general area. The plan provides for recreation facilities at and near the reservoir, as recommended by the National Park Service. Project funds would provide for land acquisition and construction of minimum basic facilities required for the protection and accommodation of the visiting public. These would include access roads, parking areas, water supply and sanitation, picnic areas, overlook developments, boat-launching ramps, beach developments, protective fencing, tree planting, and grass seeding. If found to be in the best interests of the Federal Government, funds would be transferred under appropriate agreement to the Division of Recreation and State Parks of the State of Oklahoma Planning and Resources Board for construction of these basic facilities. Additional recreation facilities not appropriate for Federal construction would be provided by local interests. After authorization, a more detailed recreation plan would be developed by cooperative efforts of Federal and State agencies and the water users' organization. Thus, full consideration would be given to recreation needs, to safe-

guarding of the public health, and to problems of administering and supervising both the recreation and water supply functions of the reservoir.

Based on April 1959 prices, which are still applicable today, the construction cost of the Waurika project is estimated to total \$25,019,500. This cost includes \$12,914,400 for Waurika Dam and Reservoir, \$10,080,000 for the aqueduct system, \$752,500 for irrigation works, \$367,500 for recreation facilities, and \$905,100 for the fish and wildlife facilities.

Annual operation, maintenance, and replacement costs for the dam and reservoir are estimated to total \$13,000 on the basis of current prices. This is exclusive of the costs of the recreation and fish and wildlife aspects of the plan. Comparable costs of the aqueduct system for municipal water delivery and of the irrigation system are estimated to average \$137,060 and \$18,650 respectively.

The Beaver-Cow Creek Watershed Development Association was formed by officials and citizens of Lawton, Duncan, Waurika, Comanche, Temple, and Walters to sponsor the Waurika project. This organization has been active throughout the investigation period of the Waurika project and has contributed funds and services toward the investigation. By formula resolution dated July 8, 1959, this association endorsed the plan of development and recommended the reimbursable project costs allocable to irrigation that are in excess of the payment capacity of the irrigators be underwritten by the municipal and industrial water users. This proposal provides that, after repayment of the reimbursable construction obligation of the project allocated to municipal and industrial uses, annual payments to the United States from payments by the municipal and industrial water supply users shall continue at approximately the same rate, together with payments by the irrigation water users, until that portion of construction costs allocated to irrigation is fully repaid. The association sponsored the now-organized Waurika Project Master Conservancy District, which agency would contract with the United States for repayment of reimbursable project costs.

Construction of the proposed works is fully justified by the ratio of benefits to costs, which is 1.38 to 1 on the basis of total net benefits and total economic costs over a 100-year period.

The Department believes the Waurika project to be a highly desirable project which will provide maximum beneficial utilization of the water resources available and is essential to continued economic development of the area. We recommend favorable action on its authorization.

The CHAIRMAN. Now, before we start to question again, Senator Kerr, do you have a statement you want to make on this project?

Senator KERR. I would like to make a few brief remarks.

The CHAIRMAN. All right.

STATEMENT OF HON. ROBERT S. KERR, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator KERR. Mr. Chairman, this project was before you and had the opportunity of presenting a statement last year at which you will recall there was a very dramatic presentation made by the officials

of Waurika and the citizens of Waurika and other communities of the fearful flood control losses in the past which would be eliminated in the future by this reservoir. I think one of the unique features of this project is the fact that approximately 80 percent of the total cost will be repaid to the Federal Government. And of the 80 percent to be repaid over three-fourths will be repaid with interest. Only the part allocable to the irrigation being repaid without interest. It is in an area that can be developed industrially if this additional water supply is made available. It will be the foundation for a very substantial economic growth. It will be one of the finest recreation facilities in Oklahoma and the recommendations of the Bureau with reference to accommodations for waterfowl refuge and game replacement habitat and recreational facilities give evidence of their very wise program for fish, wildlife development, and improved recreational facilities. With reference to the irrigable lands in Oklahoma as in New Mexico, I believe in New Mexico more and more of our land that has been taken out of production of crops with reference to which there is a surplus are going into the production of soybeans; which seems to be a crop or a product with such a tremendous present demand and one that is growing so rapidly it appears that it might be some time before they would be able to produce enough to supply the demand really without the creation of a surplus.

I want to express my appreciation to the committee for their consideration of the project and say that both the junior Senator, who will be over here in a few moments, and myself and the entire delegation and the people of Oklahoma especially those in this area are tremendously grateful to the Bureau of Reclamation, to Mart Barclay, the director down there who has made such a tremendous record and such a wonderful impact on the thinking and psychology of the people of Oklahoma and built such a great regard and respect on their part for him and his group there and the great agency that he represents.

The CHAIRMAN. Senator Kerr, you were chairman of the Select Committee on Water Resources. It happens that the chairman of this committee has been very much interested in trying to hang onto the limited supplies of water that we have in the constant building-up problem of providing enough water. A good deal of this water would be wasted if it were just allowed to flow and evaporate. Don't you think that the utilization of reclamation facilities and engineering studies for the development of municipal water supplies is a very important function of that Bureau?

Senator KERR. I think the Bureau is unexcelled and I think the opportunity for its increasing value to the economy and welfare of the United States in its activities in that regard is unlimited and one of the things for which I have such great admiration and respect for this committee on which I, at one time, had the honor to serve and for its chairman is the fact that it now gives evidence of having the most enlightened view in the field of providing needed additional conservation of water that it has ever had and I think it is making a tremendous contribution to our country in that regard.

With reference to that water committee, I would like to remind the chairman that one of the finest meetings we had was in New

Mexico and the two most significant facts were developed there that I remember very distinctly.

By the way, we had the honor of being in the State of Senator Burdick, also, for a very fine meeting. New Mexico loses so much of its limited water supply through evaporation. As I remember, evidence developed there indicated that of the amount of water that you thus far had been able to find means to save and beneficially use, 95 percent was for agriculture and 5 percent was for industrial and municipal purposes and I shall never forget the impact of the statement of one of your witnesses that if you could allocate, or if you could save enough water either in addition to what you now are able to conserve or if you could obtain it by the allocation of 5 percent of the total available to municipal and industrial development that you could thereby double the industrial economy of your State. I thought that was one of the most significant facts developed in any hearing in any State and dramatized the extent to which limited quantities of water can make such significant contributions to the growth and development of a State.

The CHAIRMAN. I appreciate the statement of the Senator from Oklahoma. The reason I was getting around to this was that we have about found, I think, that the most productive use of water from the standpoint of financial returns to a community is certainly not in irrigation. It may not be for domestic water supplies although it might be. It is probably in recreation and the development of all of these small lakes, is a very interesting subject.

I was trying to find in the report of the recreation and review commission some material that I furnished awhile ago in which I pointed out how some of these communities that grew up near a dam had a greater per capita growth in their trade, in their buildings and so forth, two to three to five times what a community in the same valley or in the same locality a little farther away from the dam had, because people came there to fish and to boat and the stores were selling powerboats.

There was a tremendous development of trade in those areas. As the chairman of this committee suggested not too long ago, to some communities in Colorado they probably would make more money, if they were looking for money, by the development of their recreation facilities than if you took that water and spilled it out on irrigation. This project points in the direction, I think the Bureau of Reclamation ought to be pointing, namely, to take these streams of water that we have and be sure they are utilized and they do not just flow away, but they are put not merely to irrigation which may not be or probably is not the highest use of that water from the standpoint of highest return to the contribution to this economy, but turns it to industrial—to a greater degree to industrial use and to a greater degree to recreational use. When you get this dam finished there will be a whole new development of people next to it who want boating and fishing and who come there for recreation, and income of that town will be higher than the income of the adjoining towns in Oklahoma.

You can be sure of that.

Senator KERR. That has proved dramatically in the town of Madill, Okla., which is surrounded by branches of the Lake Texhoma. The leadership of that town, it being a county seat of a rather small county

in Oklahoma vigorously opposed the construction of the Texhoma Dam which was probably one of the great dreams of the late Speaker Sam Rayburn, and they presented evidence in reams as to what it was going to do to their economy and take so much of the land out of production that produced the agricultural products on which their economy was based and that supported their local tax structure, their local government in its tax revenues. Today it is twice as large as it was at that time and the slogan of the city is this: "Nestling in the arms of Lake Texhoma Lake."

The CHAIRMAN. Thank you, Senator Kerr.

Senator BURDICK. I would like to ask the Senator a question. I quite agree with the chairman that although there is only 2,000 acres of irrigated land in this project that the other phases of the project are very desirable.

I am curious about the mechanics of this project. The water that is dammed and stored in this reservoir on Beaver Creek. Where would that water go but for the dam?

Senator KERR. Normal flowage. Of course, all this water goes to Red River.

Senator BURDICK. Is that the small Red River?

Senator KERR. That is the Red River which constitutes the boundary line between Oklahoma and Texas.

Senator BURDICK. I just want the record to make a distinction between that Red River and the Red River of the North.

Senator KERR. Let me say to my good friend from North Dakota that we recognize the tremendous resources that he has in the Red River of the North and we do not seek to be a competitor. We just seek to move along over the trail which the people from his, and adjoining States have made in the development of their great resource and find on the basis of our relatively smaller river and relatively lesser quantity of water a proportional amount of development and improvement by its conservation and use which you have done so ably and with such great vision on the Red River of the North.

Senator BURDICK. That is why, as a member of this committee, I am so anxious to help you down there.

The CHAIRMAN. Do you have any questions?

Senator BURDICK. I have several. What are the cost-benefit ratios in a shorter period say for example, 50 years.

Mr. DOMINY. Mr. Barclay has that here.

Mr. BARCLAY. 1.34.

Senator BURDICK. Is that direct benefits?

Mr. BARCLAY. No; that is the total benefits.

Senator BURDICK. What are the direct benefits for 50 years?

Mr. BARCLAY. The direct benefits. The direct benefits are 1.41 on a 100-year period of analysis and, on 50 years, 1.38.

Senator BURDICK. Now, Mr. Dominy, you say that you have allocated \$4 million to irrigation, yet the irrigator is only going to pay about 1 million of that.

Mr. DOMINY. Yes, sir.

Senator BURDICK. Who pays the other 3 million?

Mr. DOMINY. That is incorporated in the charges that will be repaid by the municipalities in their water rates.

Senator BURDICK. Will that 3 million carry interest?

Mr. DOMINY. No, sir. That part which is allocated to irrigation does not bear interest.

Senator BURDICK. In other words, the municipal and industrial water users will pay about \$19 million, but of that, \$15,800,000 will carry interest only.

Mr. DOMINY. Yes; all of the part allocated to municipal and industrial purposes is repaid with interest.

Senator BURDICK. I am not critical. I just wanted to get that.

The CHAIRMAN. Go ahead. It would be good to explain here why you put 2½ times as much on this rather small lake as you put in the entire Upper Colorado River storage plant, sir. All the Colorado River area. All of the area in the State of Colorado, Utah, Wyoming, and New Mexico.

STATEMENT OF JAMES T. MCBROOM

Mr. MCBROOM. My name is James T. McBroom. I am Chief of the Division of Technical Services of the Sport Fisheries and Wildlife.

The Colorado River storage project in the most recent report had \$30 million allocated for this purpose.

The CHAIRMAN. \$30 million.

Mr. MCBROOM. Yes, sir.

The CHAIRMAN. It had \$1 million at one time.

Mr. MCBROOM. Perhaps. The Bureau of Reclamation can explain, since they make the allocation of cost. Not the Fish and Wildlife Service. We have never made an allocation to a project in our lives. This is done entirely by the construction agency. Our role in water development economics is to provide a measure of the economic benefits that might be expected from fish and wildlife. The Corps of Engineers or Bureau of Reclamation takes it from there and makes the cost allocation.

The CHAIRMAN. Then you have no responsibility for this \$2 million figure?

Mr. MCBROOM. Only insofar as we provided to the Bureau of Reclamation the annual benefit figure of \$170,000 per year on fish and wildlife for the Waurika project. That agency then took that benefit figure, related it to the other benefits from flood control irrigation and municipal water and came through with the allocation which you have before you.

Senator BURDICK. And you think the fish and wildlife allocation of a little less than 10 percent of the total project is a fair allocation to this project?

Mr. DOMINY. Yes. We have representatives of the Fish and Wildlife Bureau here if the committee wants to hear them in detail on this but the manner in which we have allocated it we think is fully consistent with the facts as has been demonstrated throughout the West as to the economic gains that result from the fish and wildlife activities when incorporated in these reservoir projects.

Senator BURDICK. In other words, this is more or less the result of a new policy to give greater weight to other benefits than irrigation?

Mr. DOMINY. Yes; and the Congress has given us legislative authority to take advantage of this increased use by the public of their free time in fish and wildlife and recreational pursuits at these water-

holes of the West. It has amazed all of us the number of people that come to these facilities for recreation and use.

The CHAIRMAN. Maybe we had better have a statement from the Fish and Wildlife people. I just said to Senator Burdick that I raised a good many questions about it on not only the Norman project but the one in Wichita. They allocated far more to fish and wildlife on the Cheney Division of the Wichita project than the whole Upper Colorado storage basin. I never knew why. I never found out.

The CHAIRMAN. Actually, you just put a factor against what they give you and come out with the answer?

Mr. DOMINY. They give us the economic evaluation and we throw it into the whole pot with recreation and municipal and industrial water and come out with an allocation on the Colorado River project.

The CHAIRMAN. Wasn't there a time when it was only \$1 million?

Mr. DOMINY. Yes; because at that time we did not have the full evaluation of what the recreational uses or prospects would be on that great project. Now, as we are getting there we are getting allocations that are going to be up in the \$3 million range and we are in the process of reevaluating that thing on its merits right now. But at the time of the original allocation we had very fractional information as to just how this thing was going to work in terms of the fish and wildlife and recreation.

Mr. MCBROOM. The Secretary of the Interior, as you know, Senator, is required to report to the Congress annually on the Colorado River storage project and to bring up to date these allocations. The new report which was just submitted contains an allocation to fish and wildlife of somewhat more than \$30 million.

The CHAIRMAN. That follows my home State. It grows as it goes.

Senator BURDICK. I just make the comment. When I came to Congress and sitting on the House Interior Committee the percent allocation of fish and wildlife is considerably less than it is today.

Mr. DOMINY. There is a growing acceptance of the fact that this is a legitimate and proper function of these reservoirs and should not be charged to the irrigator and municipal water user and power user. If the recreationist uses it, in the national interest point of view, it ought to have the charge made against the purpose of the use.

The CHAIRMAN. Maybe this would be a good time for me—I have found the material I was looking for a moment ago that points to what happens to an undeveloped area when you get a dam there and have an opportunity for recreation. And it mentions this area on the Arkansas-White-Red River Basin. Three of these reservoirs have been established for 15 years, three for the past 8 years, one was opened in 1960. All 17 counties in the 4 States with significant shorelines on these reservoirs were studied and comparison made with 8 adjacent counties that do not have shorelines.

Population growth per capita income and wages, retail sales, bank deposits, taxes, and investment were considered. In the 10-year period ending in 1960 all counties in the study lost population but the 17 reservoir counties lost only 8 and 5 percent as contrasted with 25 and 1 percent in nonreservoir counties.

In 1949 to 1959 annual per capita income increased from \$669 to \$1,053 or 57 percent while there was only 23 percent in the nonreservoir counties and it goes on to point out all the way through how this

has been going on. Now, in Oklahoma 10 reservoir county tax levies increased nearly 64 percent and nonreservoir counties were up only 3 percent.

So that the construction of these reservoirs leads to a whole development for recreational and I think these recreation figures and the fish and wildlife figures are very important to us along with the development of municipal water supplies.

Mr. McBROOM. May I say, Mr. Chairman, we are most gratified for you to express that point of view as you did now and as you did before to Senator Kerr. We have been before this committee on numerous occasions expressing the viewpoint that fish and wildlife benefits are economic benefits as well as esthetic benefits.

The CHAIRMAN. I have obtained—it is difficult to recall exactly what takes place some time, but I was making a talk to a group of people who were interested in the conservation of water and utilization of water from irrigation projects and I made the statement to this group that they would be very fortunate if not a drop of that water ever poured out over the land in irrigation but that the dams might be built and recreation developed, fishing developed, tourism stressed. They would get three to five times more dollars in actual financial return than if the farmer took the water and spread it across his land in the production of crops. I was severely challenged. The only thing came out of it was we raised the figure to about 10 times better off in some instances if it was used as recreation. And I think that is true. A small flood-control dam would go to the Hamus River where it comes into the Rio Grande: immediately boats both in Albuquerque and Santa Fe were sold and they all showed up on the reservoir. Unfortunately, they had to drain the reservoir and then of course, they appealed to the congressional delegation I regret to say, but recreation is very popular.

Mr. McBROOM. Senator, last year we prepared a survey which the Bureau of the Census accomplished for us in which we measured the fish and hunting and the amounts spent on them in the United States. Our report, a copy of which was sent to each Member of Congress earlier showed that nearly \$4 billion are spent annually in the pursuit of hunting and fishing in this Nation. It is a sizable sum.

Senator BURDICK. It is about a third of farm income, is it not?

The CHAIRMAN. That is right. A little more than a third.

Mr. McBROOM. I have a brief prepared statement. I think some of this material was covered with Mr. Dominy's testimony and your questions.

The Waurika reclamation project will provide substantial benefits to fish and wildlife resources.

The project plan includes the following measures for fish and wildlife: (1) the acquisition and development of 3,500 acres of upland adjacent to the reservoir for purposes of upland game management.

I might interpose it is not simply for the game, itself, but primarily for the people. It is to be operated by the Oklahoma Department of Wildlife.

(2) The acquisition of 2,580 acres of land for the development and management as a national wildlife refuge.

I would interpose again and say the refuge will not be primarily for the ducks but for the people who are interested. The total size

of the refuge that we anticipate would be 13,400 acres. Under the new land acquisition policy 11,300 acres of that will be acquired by the Bureau of Reclamation anyway and only 2,100 acres of a total of 13,400 will be needed to be acquired above the maximum flowage line.

(3) Trashracks on irrigation pumps designed to minimize loss of catchable-sized fish and (4) reservoir clearing generally to retain some of the important wildlife habitat and flush clearing of specified areas to facilitate fishery management. Inclusion of these measures in the project plan, to be financed with project funds, is contemplated by the provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-666c.) Moreover, the two measures for land acquisition we have noted above are in accord with the new reservoir land acquisition policy, approved jointly by the Secretaries of the Interior and the Army on February 16, 1962. This policy provides, among other things for acquisition in fee of all lands below the maximum flowage line, with certain exceptions, and such additional lands as are needed for fish and wildlife as determined pursuant to the Fish and Wildlife Coordination Act. Of the 6,100 acres to be purchased for wildlife, about 1,400 acres are below the maximum flowage line, and so, would be acquired under the new policy, and about 4,700 acres are above it—to be acquired specifically for wildlife purposes.

Waurika Reservoir is expected to provide suitable habitat for a variety of warm water fish species. The fishery created is expected to provide a net increase of 36,300 man-days of fishing each year in an area where there is comparatively little fishing at the present time.

The reservoir project provides an opportunity for the establishment of a national wildlife refuge which is greatly needed in this region. The refuge will better distribute the waterfowl in this part of the central flyway, and it will constitute an important unit in the management of that flyway.

This phase of the project will provide waterfowl benefits of national significance. This is appropriate in view of the Federal responsibility for migratory waterfowl and other migratory birds. The refuge will also provide much needed hunting opportunities in the project area. The reservoir's large surface area, moderate fluctuations, and suitable land within and adjacent to the water will provide most of the refuge requirements. A total of 10,810 acres of project land and water within the area acquired in fee for other project purposes will be included in the refuge. Additional lands will be needed, however, to assure an adequate waterfowl food supply. Acquisition of the recommended 2,580-acre area will assure a minimum of 1,370 acres of cropland to provide waterfowl foods and prevent local crop depredation. The area will be acquired at a cost of \$447,900 which will be nonreimbursable. The costs of development, operation, and maintenance of this area as a national wildlife refuge will be borne by the Bureau of Sport Fisheries and Wildlife.

The present waterfowl use of the project site is estimated to average 22,700 duck-days annually and provide about 180 man-days of waterfowl hunting. With the project, but without the refuge, it is expected that the area would be used by waterfowl to the extent of 497,000 duck-days and 50,000 goose-days, and provide waterfowl hunters with 1,800 days of sport. With the establishment of the

refuge the use of the area will be increased to an estimated 6,640,000 duck-days, 840,000 goose-days and provide 10,700 days of waterfowl hunting. The refuge is expected to attract peak populations of about 100,000 ducks and 15,000 geese.

The 13,390 acres proposed for the national wildlife refuge and included in an estimated 780,000 acres of waterfowl lands which this Bureau has estimated could be acquired throughout the Nation under the Fish and Wildlife Coordination Act in connection with Federal water development projects by the year 2000. This acreage has therefore been considered as lands needed in addition to those proposed for acquisition with duck stamp funds and was included in the Bureau's estimates of total waterfowl lands needed.

The 3,500 acre upland game management area will compensate for most of the losses in important upland game habitat which would otherwise result from project construction. Development of this area will include fencing, control of native vegetation, and some plantings to provide cover and food for the native species of upland game—bobwhite, fox squirrel, cottontail, and mourning dove. Cost of acquisition and development of this area is estimated at \$457,200 and will be nonreimbursable in accordance with the Fish and Wildlife Coordination Act.

The annual operation and maintenance costs, estimated to be \$5,160, will be borne by the Oklahoma Department of Wildlife Conservation which will manage and administer this area under provisions of the Fish and Wildlife Coordination Act. With the installation of the mitigation measures, utilization of upland game resources is expected to be slightly less than the preproject levels of about 2,400 man-days of hunting. However, with installation of the national wildlife refuge there will be a substantial increase in hunting opportunity for waterfowl and loss of upland game hunting opportunity will be more than offset.

Our Department has endorsed S. 114. We believe that this project as planned provides outstanding opportunities for fish and wildlife conservation and development.

We endorse S. 114. We believe the project will make a substantial contribution to filling the need for outdoor recreation resources.

Thank you.

The CHAIRMAN. Thank you, Mr. McBroom and I am very glad that your group continues to stress the fact that it is worthwhile along with providing dams to store water for irrigation and these purposes to be sure there is also some opportunity for recreation there.

Mr. McBROOM. Thank you, sir.

The CHAIRMAN. The recent labor contract I think of the steel industry illustrates that there is going to be more and more leisure time. I do not go as far as the electric industry, the one that works 25 hours a week but there is going to be more and more leisure time and the employment of that leisure time in hunting, fishing, boating, is a very much worthwhile development.

Mr. McBROOM. Thank you, sir.

I was going to add that these water resource projects with which you are so familiar, Senator, are some of the prime opportunities for providing needed new recreation and fish and wildlife areas.

The CHAIRMAN. Do you have any questions?

Senator BURDICK. No.

The CHAIRMAN. Senator Monroney is now here.
Will you come forward, please?

**STATEMENT OF HON. A. S. MIKE MONRONEY, U.S. SENATOR IN
CONGRESS FROM THE STATE OF OKLAHOMA**

Senator MONRONEY. Thank you, Mr. Chairman, for the opportunity of being here.

I apologize for delay in getting here as I was presiding over a Public Works Appropriation Committee hearing.

I did want to come here particularly because of the intensity of my interest in a project of this type for the Waurika area since I first came to Congress along with the distinguished Senator from New Mexico.

This is one of the most troubled flood spots if not the most troubled that I have experienced in my service in the Congress. Almost every year, sometimes like in 1957, five times a year, the town of Waurika and its environs and the valley below have been struck with floods that reached the portion of a major disaster area. Being a confluence of Beaver-Cow Creek when these streams go on a rampage even singly or doubly, we would have the town under several feet of water and almost no area in the entire townsite was spared. It has cost the Red Cross tremendous sums of money to go in each year and rehabilitate this flood damage.

As you can see, from the map, the closeness of the city to the Red River, it was difficult if not impossible for a single flood control project to be able to justify the cost that would be entailed with adequate protection from the floods. Therefore, for that reason we are tremendously grateful for the study and time that has been put in by the Reclamation Service in designing such a multiple-purpose dam as this. If you will note on the cost allocation, while flood control is one of the major motivations in this dam construction, only 9 percent of the cost can be allocated to flood control because of the short reach of the river, of the stream, before it reaches Red River. Therefore, because of the great need for industrial and municipal water as well as for irrigation and wildlife factor, we feel that we have at last reached a position for a major solution to this recurrent annual flood devastation of Waurika. The benefits-to-cost annually as you will note, is 1.4 to 1 which is a high ratio and beyond that, which the figures cannot show, is the very scarce amount of rainfall and the irregularity of this in an area which has the best growing climate of any place in the State. Its effect on increasing the agricultural production and going forward into vegetable and other higher types of agricultural produce will, I think, prove to be one of the high spots of this program when it is finally put into being.

It is not far from the great missile school at Fort Sill where all of our ground missile crews are trained and reach the point of perfection of going direct from that school into operational activities. There is a recurring problem in that area of an adequate water supply.

The city of Lawton has had to seek other sources and has now joined in this as well as others, because of the proximity to this great military installation.

On top of that, a great many activities that are in that area have had to be turned away during the past year because of the lack of any suitable water supplies for any type of industry, the depressed condition of the oil production industry. There is also another reason why industry is needed badly to pick up this employment. When you figure that 79 percent of the cost will be paid with the interest by local users or neighborhood users for municipal, industrial, and agricultural water, you can see how vital this project would become to Oklahoma.

In regard to the transportation, it is a highway hub of U.S. 70 and U.S. 81 and these State highways are blocked almost annually because of high water, not once but several times a year. The Rock Island Railroad, which also runs through there suffered in 1955 alone damages of over \$100,000.

Now, to show the keen interest in this small community in trying to solve this problem through cooperation is an example that nearly three times the quota of \$6,000 that was usually assessed has been paid by this local community. I know of no area in the State where the sport or enthusiasm and need for a project has been so continuing over more than a score of years and I certainly want to add my word to the desirability and the feasibility of constructing this project and putting it into work.

We need it badly. It will liquidate itself with very small chargeoff. Less than 21 percent of cost that would be attributable to other than the local users or the use of the water that is impounded there.

I do appreciate the committee's taking this up at this time and hope that we can bring about its authorization this year.

The CHAIRMAN. May I ask you, Senator Monroney, when you were in the House, did you represent this district?

Senator MONRONEY. No; I did not, but because of its spectacular devastation, all of us felt concerned with this. This was in Toby Morris' old district, formerly Judge Johnson's old district.

While it was far distant from the district I represented, it was of great State interest. Wherever these continuing devastating floods would strike, and they struck almost annually, and people were continually asking, "Why can't the Federal Government, with its flood control work, do something about this situation?" They claimed it was too near Red River and that the Government could not consider it important enough for attention because there was not enough mileage between the construction of this Beaver and Cow Creek before it reached Red River.

Now, we have worked it out through the facilities of the Reclamation Service by making a multipurpose project out of it.

The CHAIRMAN. You are fully familiar with the little communities, I say "little"—they are not too small, of Lawton and Waurika, and so forth. Do you think that these estimates of the use of municipal water are sound? These people want a water supply of this nature.

Senator MONRONEY. Indeed, they do. For instance, Duncan is a rapidly growing industrial area. They have the world headquarters of the Hill-Burton Cement Co. there. They have the Rockwell Oil Refinery, which is one of the great refineries of the State. There is a great opportunity for petroleum, petrochemicals, if we have the available water supply.

Duncan, in order to have a dependable water supply for the interim period while this was being planned, had to join with a small agricultural upstream flood control project in order to assure themselves of the surface water caught in small areas for an auxiliary water supply. Fort Sill, as I say, which is nearby, relatively is always on an expanding basis and, in the event of war, would probably see as many as 100,000 troops there. Without this water that is necessary, we would face not only a dislocation but a loss of a war base or mobilization base that has served this Nation well in two World Wars.

Gen. George C. Marshall, when we were mobilizing prior to the outbreak of World War II, practically closed Fort Sill because of the lack of a dependable water supply. We begged him to delay 2 weeks and the Lord was on our side and the rains came and filled the reservoir that made it possible for this valuable installation to remain in being. Today it is even more valuable because all the technical training and all of the electronics that go into training our men to man the missiles that go with the ground army is done there and only there. And so, for no other reason than the protection of this base and giving it a very dependable water supply, I think this is badly needed.

The CHAIRMAN. Are there any questions?

Senator BURDICK. The Senator has done such a thorough job I have no questions.

The CHAIRMAN. I would like to say, Senator Monroney, we appreciate your coming here when we know you are very busy with other responsibilities in giving us the time today.

Senator MONRONEY. I am very grateful to you, sir. I know the schedule you both are on. I would like to say in regard to your interest in wildlife and the preservation of fish and all this, that in these dams that are built in this area, it seems that the fishing worm industry is one of the growing industries that come in. I recall a year or so ago when going down to meet with Mr. Sam Rayburn at Dennison Dam, a dam that was once opposed by many of the people in that area, but has become one of the great recreational areas of the country seeing signs all along the road, "Fishing worms wholesale and retail." When you can get into the wholesale fishing worm business, you can see that there is a great little industry even of that nature that grows up.

The CHAIRMAN. Any other statements that you want to make, Mr. Dominy?

Mr. DOMINY. I think not, Mr. Chairman. I believe the committee has a very full record on this now.

The CHAIRMAN. Thank you.

(Whereupon, at 11:35 p.m. the subcommittee recessed subject to the call of the Chair.)

