

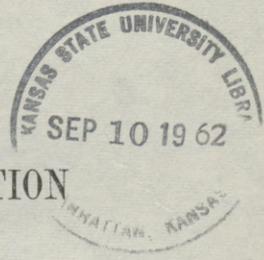
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ARBUCKLE RECLAMATION PROJECT, OKLAHOMA

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HEARING
BEFORE THE
SUBCOMMITTEE ON
IRRIGATION AND RECLAMATION
OF THE
COMMITTEE ON



INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

EIGHTY-SEVENTH CONGRESS
SECOND SESSION

ON

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

JUNE 20, 1962

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ARBUCKLE RECLAMATION PROJECT, OKLAHOMA

WEDNESDAY, JUNE 20, 1962

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

The subcommittee met, pursuant to notice, at 9:30 a.m., in room 3110, New Senate Office Building, Senator Clinton P. Anderson presiding.

Present: Senators Anderson (chairman), Jackson, Burdick, Hickey, Allott, and Kuchel.

Also present: Senator Moss; Roy Whitacre, committee assistant for reclamation; and Jerry T. Verkler, chief clerk.

The CHAIRMAN. We have a situation where every moment counts. Therefore, we will work a little more rapidly this morning than ordinarily, because we have protracted debate on the Senate floor.

The committee will move to the consideration now of S. 892 that would authorize the Secretary of the Interior to construct, operate, and maintain the Arbuckle reclamation project, Oklahoma, and for other purposes.

Its purpose would be to provide for the construction of the 106,000-acre-foot Arbuckle Dam and Reservoir on Rock Creek, a tributary of the Washita River for flood control, fish and wildlife, recreation and municipal and industrial water. No irrigation is involved in the project. A favorable benefit-to-cost ratio has been determined by the Department. A companion measure passed the House on May 9, 1962.

A copy of the bill and the favorable reports of the departments will be placed in the record at this point.

(The documents referred to are as follows:)

[S. 892, 87th Cong., 1st sess.]

A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the Arbuckle reclamation project, Oklahoma, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is authorized to construct, operate, and maintain the Arbuckle Federal 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), for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, and for controlling floods and for the conservation and development of fish and wildlife, and the enhancement of recreational opportunities. The project shall consist of the following principal works: A reservoir on Rock Creek near Sulphur, Oklahoma, pumping plants, pipelines, and other conduits for furnishing water for municipal, domestic, and industrial use, and minimum basic recreational facilities.

SEC. 2. In constructing, operating, and maintaining the Arbuckle 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 supply, including domestic, manufacturing, and industrial uses, shall be repayable to the United States by the water users 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 Water Supply Act of 1958 (72 Stat. 319). Such contracts shall be precedent to the commencement of construction of any project unit affecting the individual municipality or industrial users, and shall provide for repayment of construction costs allocated to municipal water supply in not to exceed fifty years from the date water is first delivered for that purpose: *Provided*, That the water users' organization be responsible for the disposal and sale of all water surplus to its requirements, and that 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. The interest rate used for purposes of computing interest during construction and interest on the unpaid balance shall be determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which construction is initiated, on the basis of the computed average interest rate payable by the Treasury upon its outstanding marketable public obligations, which are neither due nor callable for redemption for fifteen years from date of issue;

(c) Upon the completion of the payment of the water users' construction cost obligation, together with the interest thereon, the water users, their designee or designees, shall (1) have a permanent right to the use of that portion of the project allocable to municipal water supply purposes, subject, if the project is then operated by the United States, to payment of a reasonable annual charge to the Secretary of the Interior sufficient to pay all operation and maintenance charges and a fair share of the administrative costs applicable to the project; (2) be conveyed title to such portions of the pipelines and related facilities as are used solely for delivering project water to the water users.

Sec. 3. Contract may be entered into with the water users' organization pursuant to the provisions of this Act without regard to the last sentence of subsection (c) of section 9 of the Reclamation Project Act of 1939.

Sec. 4. 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, may deduct from the obligation of the water users the reasonable capitalized equivalent of that portion of the estimated operation and maintenance cost of the undertaking which, if the United States continues to operate the project, would be allocated to flood control and fish and wildlife purposes. Prior to taking over the care, operation, and maintenance of said works, the water users' organization shall obligate itself to operate them in accordance with criteria specified by the Secretary of the Army with respect to flood control and the Secretary of the Interior with respect to fish and wildlife and recreation.

Sec. 5. Construction of the Arbutle project herein authorized may be undertaken in such units or stages as in the opinion of the Secretary best serve the project requirements and the relative needs for water. Repayment contracts negotiated in connection with each unit or stage of construction shall be subject to the terms and conditions of section 2 of this Act.

Sec. 6. The Secretary may (1) contract for the construction of any part of the minimum basic recreational facilities with any qualified agency of the State of Oklahoma or a political subdivision thereof, and (2) upon conclusion of a suitable agreement with any such agency or political subdivision 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 reservoir of the Arbutle project, 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 and the protection of the public health, safety, and welfare. The Federal costs of constructing the facilities authorized by this section shall be limited to the nonreimbursable costs of the Arbutle project for minimum basic recreational facilities as determined by the Secretary.

SEC. 7. The Secretary may make such reasonable provision in connection with the works of the Arbuckle Federal reclamation project, in accordance with section 2 of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended, 16 U.S.C. 661, and the following), as he finds to be required for the preservation and propagation of fish and wildlife.

SEC. 8. Expenditures for Arbuckle 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. 9. There is hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, such sums as may be required to carry out the purposes of this Act.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., September 25, 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. 892, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Arbuckle reclamation project, Oklahoma, and for other purposes.

We recommend the enactment of this legislation, if amended as suggested hereinafter.

This bill would authorize the Secretary of the Interior to construct, operate, and maintain the Arbuckle project in south-central Oklahoma. The project would be a multipurpose development designed to provide municipal, domestic, and industrial water supplies, flood control, and fish and wildlife and recreational opportunities. The cities of Davis, Wynnewood, Sulphur, and Ardmore, all in south-central Oklahoma and within a distance of about 20 miles from the Arbuckle Reservoir, have indicated their interest in development of this project and in contracting for municipal water service. This interest has been further demonstrated by the substantial contribution of funds and services toward the cost of the project investigation and preparation of the planning report.

The plan of development for the Arbuckle project provides as a Federal project (1) the construction of the Arbuckle Dam and Reservoir, (2) the construction of pipelines and pumping facilities required for the delivery of water to the project cities, (3) the purchase and development of lands for fish and wildlife purposes, and (4) the development of basic recreational facilities at the reservoir site.

The Arbuckle Dam and Reservoir site is located on Rock Creek about 4 miles above its confluence with the Washita River near Dougherty, Okla. The dam would be a rolled earthfill structure 139 feet high and 1,870 feet long. The reservoir would have a total capacity of 226,450 acre-feet, of which 120,650 acre-feet would be surcharge. The balance of the capacity is tentatively allocated to provide 58,300 acre-feet for municipal and industrial water supply, 35,900 acre-feet for flood control, and 11,600 acre-feet is dead and sediment storage. The surface area at the top of the conservation (water supply) pool at elevation 871 is 2,248 acres.

The aqueduct systems required to serve the project cities require three separate pipelines together with necessary pumping facilities. The city of Sulphur would be served by a pumping plant and pipelines located on the east side of the Rock Creek arm of the reservoir. This pipeline would be about 3 miles long and would deliver water to Veterans Lake near Sulphur. The second pipeline would divert water from the reservoir at the pumping plant below the dam and deliver water northwestward to Davis, Wynnewood, and Kerr-McGee refinery near Wynnewood. This Wynnewood pipeline would be about 20 miles long. The third pipeline would serve Ardmore to the south and the Ardmore Airfield industrial park area en route. It would be about 22 miles long and would also divert from the reservoir at the dam. Flow in this line would be by gravity except for the last one-half mile where pump pressure is required to deliver water to terminal facilities at the Ardmore water treatment plant.

In the year 2015 the estimated demand of the project water users that will be served by the Arbuckle Reservoir is: Ardmore, including the airfield industrial

park area, 10.4 million gallons daily; Sulphur, 1.5 million gallons daily; Davis, 1.64 million gallons daily; Wynnewood, 0.86 million gallons daily; and Kerr-McGee refinery, 2.05 million gallons daily.

The flood control storage would provide protection to valley lands and improvements along Rock Creek and would give some flood relief to lands and improvements along the mainstream of the Washita River between Rock Creek and the head of Denison Reservoir.

It is believed that the Arbuckle Reservoir would provide good fishing opportunities. The plan for the project provides for acquisition of land adjacent to the reservoir for wildlife habitat to mitigate losses to upland game that would result from construction of the reservoir and to provide other additional habitat. It is contemplated that an appropriate State entity would administer and operate the fish and wildlife features of the project.

The project is situated in a scenic section of Oklahoma with recreational resources significantly desirable for a State recreation area. Being adjacent to Platt National Park, already congested by public use, adequate development of the Arbuckle site would greatly lessen the demand on the Department for more facilities and services at the park.

Minimum basic recreation facilities, including the land therefor, are recommended for Federal construction at this time. It is contemplated and the bill so provides that recreational facilities of the project will be administered and operated by a qualified State agency. Additional recreational facilities not appropriate for Federal development would be provided by local or other non-Federal interests.

The Department has under consideration the acquisition and development of additional lands and improved facilities for recreational development. We suggest, however, that any authorization for such additional purposes be delayed pending further study.

Based on prices as of July 1959, essentially equivalent to current prices, the total estimated Federal construction cost of the Arbuckle project is \$13,340,000, which is tentatively allocated as follows:

Municipal and industrial water-----	\$10,599,000
Flood control-----	362,000
Fish and wildlife-----	1,929,000
Recreation (Federal minimum basic)-----	450,000
Total-----	13,340,000

This total cost is exclusive of the estimated cost (\$850,000) of contemplated recreational facilities to be provided with non-Federal funds. The annual operation, maintenance, and replacement costs of the Federal works exclusive of the minimum basic recreational facilities are estimated to average about \$78,000. Operation of the Arbuckle Reservoir and the municipal and industrial water supply facilities would be turned over to the contracting entity as soon as practicable after the completion of construction.

The project is engineeringly feasible and economically justified. Average annual benefits from all uses are estimated to be \$899,200 on the basis of a 100-year period of analysis. Direct benefits are considered to be equal to total benefits. Comparison of these annual benefits with the estimated annual project costs of \$466,000 results in a benefit-cost ratio for both direct and total benefits of 1.93 to 1. For a 50-year period of analysis, this ratio would be 1.59 to 1.

Section 2, subsection (c) of the bill provides that on the completion of payment of the water users' obligation together with the interest thereon, that the water users will then have a permanent right to that portion of the project allocable to municipal 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 would recommend that the section be amended in line 20 on page 3 of the bill by inserting after the word "purposes" 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, lines 8 and 9, strike the words "the project water users" and insert therein the following words: "a water users' organization".
- (2) On page 6, line 5, strike the words "and propagation" and insert the following: ", development, and improvement".

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,

KENNETH HOLUM,
Assistant Secretary of the Interior.

Estimated additional man-years of civilian employment and expenditures for the 1st 4 years of proposed new or expanded programs

	1st year	2d year	3d year	4th year
Estimated additional man-years of civilian employment:				
Executive direction:				
Executive.....	1	1	1	1
Clerical.....	1	1	1	1
Stenographic.....	1	1	1	1
Total, executive direction.....	2	3	3	3
Administrative services and support:				
Accountant.....		1	2	2
Budget.....		1	2	2
Clerical.....	3	5	10	10
Personnel.....		1	1	1
Property management.....		2	3	3
Total, administrative services and support.....	3	10	18	18
Substantive (program):				
Engineering aids.....	5	30	52	32
Engineers.....	5	17	27	17
Total, substantive.....	10	47	79	49
Total estimated additional man-years of civilian employment.....	15	60	100	70
Estimated additional expenditures:				
Personal services.....	\$100,000	\$420,000	\$650,000	\$460,000
All other.....	30,000	730,000	5,470,000	5,370,000
Total estimated additional expenditures.....	130,000	1,150,000	6,120,000	5,830,000

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., September 20, 1961.

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

DEAR MR. CHAIRMAN: This in reply to your letter of February 14, 1961, requesting the views of the Bureau of the Budget on 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 purpose of this bill is clearly stated in its title.

The Secretary of the Interior, in a report which will shortly be submitted to your committee on this bill, recommends that section 2, subsection (c) be amended in line 20 on page 3 by inserting after the word "purposes" the following: "so long as the space designated for these 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."

In our review of the project report, we noted a problem with respect to the appropriate basis for the determination of flood control benefits and the economic justification for including flood control storage in the project. We believe, therefore, that prior to a request for funds to initiate construction on the Arbuckle project, the flood control features should be restudied using the evaluation standards for water resources projects to be established by the administration to determine whether the inclusion of flood control storage in the project is economically justified.

Accordingly, the Bureau of the Budget would have no objection to enactment of S. 892, if amended as recommended in the Secretary of Interior's report.

Sincerely yours,

PHILLIP S. HUGHES,

Assistant Director for Legislative Reference.

The CHAIRMAN. In order that we can save some time for everybody, I am going to ask Senator Kerr if he has any statement he wants to make and then his colleague, Senator Monroney.

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

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

This is a project that is very dear to the hearts of the people in a number of counties in southern Oklahoma. It is in an area near the Platt National Park, by Sulphur, Okla., which is a very fine recreational area, one of the most attractive natural recreational areas we have.

Mr. Chairman and members of the committee, I am happy to appear here today with a number of very distinguished citizens from Oklahoma, who have come to Washington to express to you the need for immediate consideration of the Arbuckle project which has been surveyed and recommended for construction by the Bureau of Reclamation of the Department of the Interior. This project has the endorsement of the State of Oklahoma, the Department of the Interior, the Bureau of the Budget, and the President of the United States. It has been favorably reported by the Interior and Insular Affairs Committee of the House and the House of Representatives has passed it without a dissenting vote.

The project generally is multiple-purpose in scope, combining the solution to the needs for supplemental municipal and industrial water supplies, flood control, conservation of fish and wildlife resources, and recreational opportunities.

The cities of Sulphur, Davis, Wynnewood, and Ardmore, Okla., will participate in the municipal water supply features of the project, and I would call your attention to the fact that of the \$13,340,000 estimated cost, 79 percent, or \$10,600,000, will be repaid to the Federal Government, with interest, for municipal and industrial water supplies.

Technical witnesses from the Department of the Interior will explain the flood control, fish and wildlife, and recreational benefits, and the allocation of cost to each of these functions.

Local witnesses will tell you of the need of supplemental industrial and municipal water supplies for each of their communities. I know what they will tell you and I wish to endorse their statements in general.

I wish to discuss a special feature of the Arbuckle project and how it fits in with the President's present program of developing and preserving the outdoor recreational, scenic, and natural phenomena of this country.

The Arbuckle project is near Platt National Park. This park was established because of unusual mineral springs and artesian wells and, at one time, it attracted people for health purposes from all over the United States.

Although the park is small, it is attended annually by a great host of visitors who still express interest in the phenomena of artesian wells of varying mineral content, located within close proximity of each other.

The Arbuckle project will provide a water impoundment that can be developed in a beautiful natural setting for water recreational pursuits. Nearby are other unusual natural phenomena such as Turner Falls, Pennington Creek, and other phenomena developed by the eons of time, in the process of unveiling geological formations.

Near the Arbuckle project is one of the greatest geology outdoor laboratories that exists anywhere in the world. Sometime in the far distant past nature caused an upheaval which raised geological structures from their deep resting places to horizontal folds across the Arbuckle Mountains.

Therefore, it is possible for students of geology to see, exposed on the surface along the ridge of the Arbuckle Mountains, the formations that exist thousands of feet below the surface of the earth, to the north and to the south of this phenomenal display of formations. It is for this reason that thousands of young men, seeking their degrees in geology, visit this unusual area.

I am relating these particular incidents in order that it may be shown that the Secretary of the Interior has used good judgment in suggesting the possibility of annexing satellite areas to the Platt National Park to make it one of the outstanding national parks in the United States. The Arbuckle project will become a part of that proposal. Therefore, in addition to the recommendations and justifications which have been made by the Bureau of Reclamation, this committee should be fully advised relative to the additional potentials that this project may make possible.

I urge your consideration of this project at an early time, in order that authorization may be completed during this session of Congress. We will be back at another time to talk to you about the national park aspects of which this project will be a part.

I thank you for your courtesy in setting up these hearings, listening to these fine Oklahomans express their desires relative to this project, and giving me an opportunity to advise you of my hearty endorsement of the project.

That completes my statement, Mr. Chairman.

In view of the fact that I have another committee, of which the chairman is also a member and at which I will await his presence in order that we might jointly make an effort for the mutual development of New Mexico and Oklahoma in the matter of sugarbeets, to which I will go, I am going to ask Senator Monroney to give the committee his statement and present this wonderful group of Oklahomans who are here for this hearing, if that is agreeable with the chairman.

The CHAIRMAN. Surely, Senator. Thank you very much.

Incidentally, I want to say with reference to the project generally that the chairman of this committee and the full committee has said many, many times that we had better start considering water not only from the standpoint of irrigation but from the standpoint of domestic use and irrigation.

We have made a little study on some of the water of Colorado and I think most of that water is more valuable for recreation than it is for

even domestic purposes, but certainly domestic purposes is even more valuable and pays more dividends than even farming or irrigation uses.

Therefore, I am glad to see a statement that recognizes that the future of reclamation may lie in conserving water for whatever purposes may be intended.

Senator Monroney.

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

Senator MONRONEY. I appreciate your giving us this opportunity. I know our schedule is crowded and I am grateful to you for letting our people appear.

This bill is identical to H.R. 23, which was passed by the House on May 9, 1962.

Arbuckle Dam and Reservoir is a multiple-purpose project which we consider vital to the economy of south central Oklahoma. It will be located 6 miles southwest of Sulphur, Okla.

The project is overwhelmingly supported by the local population. It has been endorsed by the chambers of commerce, planning boards and city councils of all the cities affected by the project, 8 to 1.

The total cost of the project is estimated to be \$13,340,000, of which 80 percent is allocated to municipal and industrial users. Thus, 80 percent, or \$10,599,000 plus interest will eventually be repaid to the Federal Government. The Department of the Interior states that the benefit-cost ratio is 1.93 to 1 on a 100-year analysis and 1.59 to 1 on a 50-year analysis. Thus, almost \$1 million annually in benefits will be realized against less than half a million in costs.

Municipal and industrial water supply: Principal cities ready to contract for municipal water service are Davis, population 2,381; Sulphur, population 5,000; Wynnewood, population 2,500; and Ardmore, population 20,184; all of which are within 20 miles of the proposed lake. All of these cities have contributed substantial funds and services toward investigation and planning of the project.

Also affected is the Ardmore Air Park—formerly Ardmore Air Force Base—a very important link in the the commercial and general aviation network in southern Oklahoma.

Periodic severe droughts, increasing demand for water, both industry and domestic, and a lowering water table all make this project vital to the affected communities. Department of the Interior indicates that in just a little over 50 years Ardmore alone will need 10.4 million gallons of water daily, or more than 2½ times its present requirement of 4 million gallons daily.

During the drought of 1956, all of the affected communities except Sulphur had to ration water. Sulphur's water supply, ordinarily artesian, dropped 18 and more feet below the surface. Since then, new irrigation and industrial development, increased population, and further drilling of wells by neighboring communities into the common source of supply have put further strain on the already inadequate supply of water.

Flood control: Although flood control represents a relatively small portion of the allocated costs of this project, the effect of this aspect

will be interstate and highly important. The dam will contribute to controlling floods not only on Rock Creek, where it is located, but also in the fertile Washita and Red River Valleys in which watersheds the project will be located. It also will have the important effect of decreasing the siltation in Lake Texoma.

Recreation: The proposed lake will have approximately 2,248 surface acres of water to afford recreation to the inhabitants of the area, including Oklahoma City only 85 miles to the north, and Dallas and Fort Worth only 135 miles to the south.

It will be adjacent to Platt National Park, which is the smallest of our national parks in area but one of the most popular from the standpoint of visitation. Over 1 million visitors to Platt National Park were registered in 1961.

Department of the Interior refers to Platt as congested. Arbutle Reservoir can relieve a great part of this congestion and be of additional economic benefit to the United States by elimination of some of the need for expansion of facilities at Platt.

Arbutle Reservoir will be located in one of the most scenic areas of the Southwest in the Turner Falls area of the Arbutle Mountains, which are widely known as an open air geological laboratory. Here, due to a gigantic upheaval in the earth's surface eons ago, rock strata, ordinarily buried a thousand and more feet below the surface, are exposed to the view of hundreds of thousands of tourists and scientists every year.

The plan for the project also provides for acquisition of land around the reservoir for a wildlife refuge to mitigate losses to upland game that would result from construction of the reservoir and to provide an additional refuge for game in the area. It is expected that some State bureau will administer the fish and wildlife features of the project.

Department of the Interior calls this project engineeringly feasible and economically justified.

I will ask permission, if I may, to introduce witnesses en bloc at this time and each of them and then they will appear to testify, if that is all right.

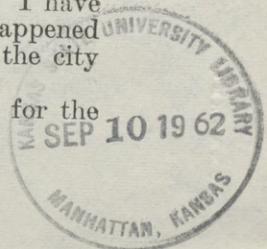
Mr. Gene Cope, Sulphur, Okla., ward 4 councilman and chairman of Water Resources Committee of Southern Oklahoma Development Association.

**STATEMENT OF GENE COPE, SULPHUR, OKLA., WARD 4 COUNCILMAN
AND CHAIRMAN OF WATER RESOURCES COMMITTEE OF SOUTHERN
OKLAHOMA DEVELOPMENT ASSOCIATION**

Mr. COPE. My name is Gene Cope. I have been ward 4 councilman in Sulphur, Okla., for about 8 years, and chairman of the Southern Oklahoma Development and Water Resources Committee, who have been pushing this project all of this time.

I have been very familiar with the project and I think I can answer most of the questions as long as they are not too technical. I have the official statement here from the city of Sulphur, which I happened to prepare. It is signed by the mayor and attested to by the city clerk.

The CHAIRMAN. Without objection, they will be received for the record.



(The official statement of the city of Sulphur, Okla., is as follows:)

STATEMENT OF THE CITY OF SULPHUR, OKLA., BY GENE COPE, COUNCILMAN,
WARD 4

Mr. Chairman and members of the committee, it is with pleasure that I am permitted to come before you on behalf of Senate bill 892 to authorize construction of the Arbuckle project on Rock Creek, a tributary of the Washita River in south central Oklahoma.

The "Lake of the Arbuckles" will be situated in the north foothills of the Arbuckle Mountains to the southwest of its watershed which extends through Murray County, into Garvin and Pontotoc Counties. The Arbuckle project is a part of the plan for development of the Washita River Basin and has been under study by Government agencies since 1937. However, active local support only began about 8 years ago. Local sponsorship of the project was initiated by the Murray County Water Resources Committee which was later expanded into the Southern Oklahoma Development Association. This organization comprises five counties in the southern part of the State. I have been chairman of the water resources committee of both organizations.

By early investigations by a private engineer firm, also the Bureau of Reclamation and engineers commissioned by the U.S. Air Force to investigate all possible water supply in the area, it was determined that the Arbuckle site was the only logical place for an adequate surface water supply. Present municipal and industrial supplies are inadequate and in some cases of poor quality, and until supplemented by the Arbuckle project it will be impossible for the towns to grow or attract any new industry.

The Arbuckle drainage area lies between the abundant rainfall section of eastern Oklahoma and the Texas Panhandle where only 20 inches are measured annually. The average rainfall here is about 38 inches which arrives usually in April and May. The yearly rainfall is very erratic. As an example during 1937 only 6,700 acre-feet flowed past the Arbuckle damsite while 161,400 acre-feet passed down Rock Creek in 1957.

Even though the urban centers are showing a gradual increase in population, the rural areas have been losing population for the past 25 years. The Arbuckle project, by guaranteeing a permanent water supply for Ardmore, Ardmore Industrial Park, Wynnewood, Davis, Sulphur, and other industries and communities, is our one hope for recovery and expansion.

During the drought of the fifties it was necessary for Ardmore, population 20,000, to pass laws forbidding the use of water for carwashing, lawn sprinkling, and water coolers. It was even against the law to use bath water to keep evergreens and shrubbery alive. This was necessary in order to have sufficient water for human consumption. Ardmore voted a \$2 million bond issue in order to raise the dam at their municipal lake and to drill emergency water wells to supplement their diminishing water supply. With the increasing per capita consumption of water, Ardmore will be out of water again at the next drought.

Wynnewood suffered several disastrous fires due to the lack of water for fire-fighting. Carwashing and other uses of water were banned several times there and many new wells have been sunk seeking more water. The superintendent of a large oil refinery at Wynnewood told me that his company spends more money "looking for water" than will be the cost of water from the Arbuckle project. The city of Davis drills into the alluvium of the Washita River, as does Wynnewood, for their water supply. But when the river goes dry the wells go dry.

The city of Sulphur, where I have been city councilman for the past 8 years, is the most fortunate of the other towns in past water-supply experience. However our only supply comes from wells drilled in the Arbuckle limestone near the east edge of the city. These wells were all artesian until during the long drought of the fifties when the water level dropped to 18 feet. Platt National Park, which is adjacent to Sulphur, has two large springs which when in full flow, produce 7 million gallons of water daily. These springs originate in the same formation as Sulphur's municipal water supply wells. During the past 40 years, the springs have gone completely dry several times. In 1956-57, during the last long drought, they were dry for a period of 18 months. Since that time, the city of Ada, 30 miles east, has drilled a number of wells in the same strata and also a large irrigation project just 6 miles east, have also tapped the same supply. This is the reason that the citizens and city council of Sulphur have been so

deeply concerned in this matter and have gone all out to promote the Arbusckle project as a visible and adequate water supply.

This multipurpose project will also offer flood control for the Lower Washita River and Lake Texhoma and will bring about the development and conservation of fish and wildlife resources. Although 79 percent of the cost of the project will be paid for by the water users, the vital factor of recreation will bring a very needed economic boom to the area and will be the deciding factor in stopping the population loss in the counties involved.

Platt National Park, the only national park in Oklahoma, is the smallest in area in our National Park System but consistently ranks near the top in visitation. In the 1960-61 season, Platt had a total of 1,259,816 visitor-days and the amazing fact is that the figure compares favorably with many of our larger and more famous parks such as Grand Canyon, Yellowstone, and Yosemite. The visitation here has reached the saturation point and the National Park Service is contemplating an addition of about 2,500 acres to the present 912 acres of the park. The new addition will be situated between the Rock Creek and Buckhorn Creek arms of the proposed "Lake of the Arbuckles." This expansion, coupled with the enhancement of the recreational features of the lake will provide untold recreational opportunities, especially for the people of southern Oklahoma and north Texas.

I can assure you that the residents and elected officials of the project area are eagerly awaiting congressional action for we know it will bring renewed hope for a dependable water supply, community expansion and development, economic advancement, and unlimited outdoor opportunities in this beautiful mountainous section of Oklahoma.

Mr. COPE. If there are any questions, I will be glad to answer them. I will not take up any more time than necessary.

The CHAIRMAN. A great deal of this is for municipal and industrial water. Is there a market for that water?

Mr. COPE. Yes, sir; very definitely.

The CHAIRMAN. Who is going to buy it?

Mr. COPE. The city of Ardmore, Davis, Sulphur, Wynnewood, and the Kerr-McGee Refinery in Wynnewood.

The CHAIRMAN. There is plenty of market for it, then?

Mr. COPE. Yes, sir; we have a great market for it there. Most of the towns have been desperate for water a number of times in the past.

The CHAIRMAN. Quite a substantial sum—not too large a sum—has been for fish and wildlife. Are these relatively small dams and lake developments in Oklahoma attractive to tourists?

Mr. COPE. Yes; it is kind of amazing the way they do. Every time they build one, they overrun it.

The CHAIRMAN. Have they not grown faster than towns that do not have these recreation facilities near them?

Mr. COPE. Well, it is naturally good for business, good for people in the area.

The CHAIRMAN. The Ardmore Recreation and Resources Commission had some very interesting figures on the growth of some of the communities. Those in the neighborhood of some recreational facilities enjoyed far better than average growth and far better than average businesses. Now, of course, all these businesses pay their share of taxes and for people to make any money on them, they have to pay some income tax, and have a base for Federal corporate tax.

Do you think that is a source for the Government to recover its money?

Mr. COPE. Yes, sir; I do. I feel that any time you increase the spending of money in an area, you bring in new money and it increases the economy of the entire Nation. And any time that you build a reclamation project like this, if it helps the economy of just one small

area, it actually gives us more ability to spend money to buy cars from Detroit and clothes from St. Louis and so on.

The CHAIRMAN. And you believe that the people in this community want this project?

Mr. COPE. Yes, sir; we sure do.

The CHAIRMAN. Have they ever had a reason to say so in any public way?

It has just been called to my attention that the House put a ceiling on this project of \$13,340,000. Would you mind such a ceiling going on the Senate bill?

Mr. COPE. No, sir; we have checked this report a number of times and we feel that this is fair and we would certainly be willing for that ceiling to be put on it.

The CHAIRMAN. The Department did not recommend it, but the House put it on anyhow. You do not think that would be fatal to the bill?

Mr. COPE. I do not think so, personally.

The CHAIRMAN. Senator Kuchel?

Senator KUCHEL. No questions.

The CHAIRMAN. Senator Jackson?

Senator JACKSON. How many gallons per day would be supplied from this dam and reservoir?

Mr. COPE. A little over 16 million gallons per day.

Senator JACKSON. Does this represent your current deficiency, or are you planning to expand or replace, or just how are you going to suddenly take on 16 million gallons per day is what I would like to get straightened out.

Mr. COPE. This project is figured over a period of 50 years. According to the Bureau there at the University of Oklahoma, who made our first area report on it, we will pass that peak in 50 years. Most of us will be looking for water before the 50 years is up.

Senator JACKSON. But in the meantime, you will have this capacity. That is what I am getting at.

The CHAIRMAN. Senator Jackson is trying to say you have some water supply now; have you not?

Mr. COPE. Yes, sir.

The CHAIRMAN. And suddenly you add 16 million gallons to it. Where are you going to sell that 16 million gallons and how long is it going to take you to get up to that?

Senator ALLOTT. Will somebody convert gallons to acre-feet?

Mr. BARCLAY. It is about 18,000 acre-feet a year.

Senator ALLOTT. That would be about 50 acre-feet a day though, 16 million gallons? I did not bring my slipstick with me.

The CHAIRMAN. What did you say this was in acre-feet per year?

Mr. BARCLAY. A little over 18,000 acre-feet a year.

The CHAIRMAN. You are sure about that?

Mr. BARCLAY. Yes, sir.

The CHAIRMAN. Because the report shows that 58,000 acre-feet of this is going to be municipal water supply.

Mr. BARCLAY. That is the storage capacity and the 18,000 acre-feet will be the yield per year.

Senator ALLOTT. Thank you for yielding on that.

The CHAIRMAN. Senator Allott asked a very interesting question. I went up before a Senate committee one time to testify about food and began to talk about bushels and hundredweight and cargoes, and finally Senator Vandenberg said, "Mr. Secretary, if you put them all in the same denomination, we can understand them a little better."

We use acre-feet more than we do anything else. So it is 18,000 acre-feet a year to be developed by the project?

Mr. BARCLAY. Yes, sir; I will give you that figure.

The CHAIRMAN. He has one of those slide rules.

Senator JACKSON. Whether it is acre-feet or what it is, it does not change the pertinent question; that is, how are you going to sell it? I think we ought to have this for the record.

Mr. COPE. The city of Ardmore, it is going to be a supplemental water supply to about half the towns.

Senator JACKSON. In my town, speaking of water, we have a couple of pulpmills that take 110 million gallons of water every day. You see, we have a lot of water in our municipal water system out of the mountains—110 million gallons a day just for two plants. This is a small town, 40,000 people. So that I can appreciate the importance of water.

We have a lot of it and that is why I can understand all the more why you folks need municipal water. But I was curious to know how you would suddenly take on this full load.

The CHAIRMAN. If you don't do it yourself, would you make sure the Bureau of Reclamation says that of this 18,000 acre-feet, so many thousand feet we expect to sell to Ardmore, so much we expect to, and so on, so we know what you are going to do with it?

Senator JACKSON's question is a very pertinent one. If you have it for sale and cannot sell it, you do not have the revenue to finance the project.

Mr. COPE. That is right.

We have been pushing this for several years. The city of Ardmore will take 10 million gallons of water a day. They will not start right off taking that amount of water.

The CHAIRMAN. We are back to acre-feet.

Mr. PALMER. It is about 10 million gallons a year—32 acre-feet a day.

Senator JACKSON. They are going to take 10,000 gallons a day?

Mr. COPE. 10 million.

Senator JACKSON. I mean 10 million, out of a total of—

Mr. COPE. Sixteen.

Senator JACKSON. But when will they take it?

Mr. COPE. They will take this water—all of us have agreed to take this water on an escalating scale; in other words, when the project is built and turned over to the service district. The following year, payments will begin. The payments start small. As the towns use more water down through the years, the payments increase and we will use more water and—

The CHAIRMAN. But can you not tell the committee how much water you are going to start using the year the project is finished and how much you plan to use 5 years from now?

Do you have to wait 50 years to get up to use it all?

Mr. COPE. It probably will, sir, before we use it up.

Senator JACKSON. According to the report here of the Department, in the year 2015, the estimated demand of the project water users that will be served by the Arbuckle water users, Ardmore, 10.4 million gallons daily; Sulphur, 1.5 million gallons daily; Davis, 1.64 million gallons daily; Wynnewood, 0.86 million gallons daily; Kerr-McGee Refinery, 2.05 million gallons daily.

I think it would just help me out, anyway, when will—assuming you get your appropriations and the project is completed—will you be able to start at the outset to utilize immediately the gallonage that will be available for municipal use? This is what I am getting at.

Is this a long-term project? Is it going to be built in increments?

Mr. COPE. You might want this answered by the Bureau. We will not start using that in the first year, we will not have that market. But in order to build a lake like that, the economics of it, it is much better, I understand, to build the lake to its capacity, so it can produce. You will not save very much more money by building it in stages down through the years.

Take, for instance, the city of Davis; their intentions are of doing away with the water wells and using this entirely. I think Wynnewood expects to do this also.

Kerr-McGee Refinery, they spend as much money drilling for wells and looking for water as this will cost them.

Senator JACKSON. Would you say or can you say that the water will be used from the very outset, at the outset, or is it going to be held in reserve?

Mr. COPE. It is going to be held in reserve. We hope that we can use it all.

Senator JACKSON. Yes, but this says 2015, you will be using all of it. What I am trying to get at is, if this is a municipal project, when does it become a fully utilized municipal water supply system?

Mr. COPE. At the beginning, of course, it will.

Senator JACKSON. No; it will not; according to this.

Mr. COPE. We will not utilize its full capacity, of course.

Senator JACKSON. Well, how much water will you utilize the first 10 years of the total capacity of 16 million gallons daily, how many million average would you use the first 10 years, and the second?

Mr. COPE. I would almost have to have my report, but I would say around 8 million gallons at the outset.

Mr. PALMER. Senator Jackson, if I might volunteer, data on its estimated use is included on page 49 of the report that is before you. Also—

Senator JACKSON. Forty-nine of the committee report you are talking about?

Mr. PALMER. No; of the planning report.

Senator JACKSON. What does it say?

Mr. PALMER. Well, as has been indicated, it starts with an estimated consumption in year 1 of the completed project of 3.12 million gallons of water a day and builds up to the end of the period to the full use.

But there is one other thing I believe the committee should consider. This is that in the Bureau proposal, the departmental proposal, interest on about one-third of the cost of the dam and reser-

voir would be deferred for 10 years under the Water Supply Act of 1958 to permit, to accommodate this buildup period.

Senator JACKSON. The total capacity, I understand, was 16 million gallons per day. According to this table, it shows that it only gets up to 10,400,000.

Mr. BARCLAY. I beg your pardon, sir; that is Ardmore. Page 46. I am sorry; I gave the wrong page.

Senator JACKSON. Page 46—all right; this is right.

Well, you start out at 5,360,000 gallons the first year, starting in 1966. That is the daily consumption. At the end of 10 years you get up to 7,690,000, but you do not—well, you get up pretty close to that at the turn of the next century.

Mr. PALMER. Yes.

Senator JACKSON. Does this represent the capability of the reservoir, or does it represent the projected demand?

Mr. BARCLAY. It represents the yield capability of the reservoir with a storage capacity of 58,300 acre-feet, and it also approximates the demands of the cities.

Senator JACKSON. But you reach the capability initially, do you not, of 16 million gallons a day?

Mr. BARCLAY. In 50 years, yes, sir.

Senator ALLOTT. Would you yield to me for one question, so I can try to follow yours?

Senator JACKSON. Yes.

Senator ALLOTT. Will you tell me how I convert a million gallons into an acre-foot or vice versa?

Mr. PALMER. In a million gallons of water, there are approximately 3 acre-feet of water.

Senator JACKSON. I am not interested in acre-feet; we just deal in gallons of water out home.

Senator MONRONEY. If you will excuse me, this whole area has a very definite ceiling on population and industrial development today because there is no water. You have long periods of drought where the water for household use was selling at almost the price of oil—I mean during several of the drought periods in Oklahoma. There is no place else they can get water.

Now, to build this reservoir smaller, based on the current uses of water, would not be wise. It would be folly, because we would have no built-in capacity for attracting petrochemical industries, such as Kerr-McGee refinery at Wynnewood, which is not too far from this and which will be one of the users.

The oil refining complex of Ardmore, Okla., has been stagnant and stationary because there is no water that you can depend on for year-round operation. Therefore, I think what the planners have in mind is the absolute necessity for growth, and this is the central part of Oklahoma on the new Interstate Highway System and will have a very great capacity for growth potential, because it is interlaced with oil and other natural resources there.

Senator JACKSON (presiding). I was expecting an answer to run something like this, that this being a more economical source of supply, that the rate of replacement of the rather poor means by which you get water now would be much faster than indicated by the testimony.

I thought that would be brought out here, but it had not been and I just wanted to put the question so that I could understand this project.

I assume this is what you are really talking about, that you have wells all over the place, that your present supply is inadequate.

Now, do I understand this correctly? I am not trying to confuse the record; I am just trying to get the record straight. Members of the committee later will want to know the nature of the proposal.

So what you are really doing is building up a reserve here. You will use a part of it initially, but you are projecting this to take care of future demand. As Senator Monroney pointed out, probably one of the great unknowns, of course, is the industrial demand. One industry could take this whole supply, conceivably, especially the chemical business.

That takes an enormous amount of water.

Senator MONRONEY. One point I do not think we emphasized enough, is that if we have a drought as we hit every so many years, you take the whole demand for the period, because there will not be any water in that area that will be available.

Senator JACKSON. Now, if you can clarify one other thing for me, if this is to be a municipal water supply system—that is, the reservoir, the water, is going to be used for that purpose—how are you going to permit recreational use of the reservoir and still maintain a sanitary system?

Mr. COPE. Under our State health department rules, you can have boating, fishing, and so on, but not bodily contact with the water within a mile of the intake works.

Senator JACKSON. We would not think of anything like this in our part of the country. Such things as this are prohibited.

Is there a filtration system?

Mr. COPE. This lake itself will only comply with State health department rules and laws. But this water cannot be used in a town until it goes through a filtration plant. Some of the towns have them, some do not.

Senator JACKSON. I assume the witnesses from the Department will cover that point.

Mr. COPE. Yes.

Senator JACKSON. Any further questions?

Senator KUCHEL. Yes. I notice that the Department, with the approval of the Budget Bureau, recommends, Mr. Chairman, an amendment to the bill on page 3, line 20, adding language as follows:

So long as this space designated for these 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—

which is the Department's way of tying down and making explicit the provision of the bill for a permanent right to the portion of the project allocable to municipal water supply purposes.

I ask my colleague, Senator Monroney, as an author of the bill, do you have any objection to this?

Senator MONRONEY. No.

Senator JACKSON. The House, incidentally, adopted that.

Senator KUCHEL. Where is the House bill now?

Senator JACKSON. It has passed the House.

Senator KUCHEL. Is it before our committee, too?

Senator JACKSON. Yes; both bills; that is my understanding.

Senator MONRONEY. Yes; that is right; passed May 19.

Senator KUCHEL. That is all, Mr. Chairman.

Senator JACKSON. Senator Allott?

Senator ALLOTT. Yes.

I think most of my questions I want to direct to the Bureau.

As I look at page 16 of the report—you are from Sulphur, are you not?

Mr. COPE. Yes, sir.

Senator ALLOTT. This is the estimated volume for the city of Sulphur. Now, the University of Oklahoma Bureau of Business Research estimated need for 1965, which is 3 years away, at 0.67 million gallons, or 670,000 gallons a day.

Then they estimated that by 2015, which is 50 years, this would grow to 2,100,000 gallons a day, which is a growth of about 350 percent, roughly.

Now, I noted you had some population figures here—in this area, the population of these 4 towns in 1940 was 25,872, practically 26,000. By 1950, that had grown to 26,630. By 1960, it had grown to 29,500.

Now, upon what do you base your estimate of the growth of need and population, considering the rather slow growth of population during the last 20 years?

Mr. COPE. Well, I would say that we have had several factors in our territory that has slowed the growth of the towns. Counties south of us—Carter County, of which Ardmore is the county seat—another county west of us, they are going from farming to ranching. Naturally the little farms are being broken up. Many of those people are not moving to town, they are moving away. But we are becoming more stabilized now and I think our towns are going to assume a more normal growth.

Another thing, we had the Air Force base between Sulphur and Ardmore, which helped our economy quite a bit and we lost it about 7 or 8 years ago.

The city of Ardmore has acquired it now.

They are making an industrial park out of it. It is a very wonderful installation down there, and they do have seven or eight small industries. So we really think our growth pattern is going to increase, if we can just increase the way the national trend is.

Our water consumption will naturally increase and then the per capita consumption of water, I understand, will about double in 1960 to 1985. So the per capita consumption will double the water use, and then your growth will add more to it.

Senator ALLOTT. The only real thing you have contributed which answers my question, sir, is the fact that you have hopes for the development of the industrial park, which would indicate an increase or acceleration of your population. I think in all of these matters, we are all from the West, here, and we understand water and we understand that you cannot develop water overnight for a town when they need it and that you have to plan for the future.

But at the same time, you also have to take into consideration the reasonable or projected needs of an area over a long period of time.

As I say, perhaps the Bureau can do this better than you. But the growth of population in the past 20 years does not seem quite to keep pace with the projections that have been made in the report.

Mr. COPE. I have been reading that, and I was under the impression that it was pretty close. Maybe I need to study it more.

Senator ALLOTT. I will say that the figures are close, but your own growth of population in these four towns does not indicate that the figures are necessarily accurate.

Mr. COPE. And of course, I think, an adequate water supply has had a lot to do with our towns having slow growth.

Senator ALLOTT. I think that is all, Mr. Chairman.

Senator JACKSON. Thank you, Mr. Cope.

We appreciate having your statement.

Senator MONRONEY?

Senator MONRONEY. I want to introduce Mr. Calvin Price, Sulphur, Okla., secretary-treasurer of water resources committee of Southern Oklahoma Development Association, and secretary-treasurer of Oklahoma Reclamation Association.

STATEMENT OF CALVIN PRICE, SULPHUR, OKLA., SECRETARY-TREASURER OF WATER RESOURCES COMMITTEE OF SOUTHERN OKLAHOMA DEVELOPMENT ASSOCIATION, AND SECRETARY-TREASURER OF OKLAHOMA RECLAMATION ASSOCIATION

Mr. PRICE. I have here three statements; one is from the Southern Oklahoma Development Association; another is a statement for the little town of Dougherty, a town of 300-some population. They did not have the money to send someone up here.

And this is the Murray County Area Redevelopment Committee statement.

Senator JACKSON. The statements will be placed in the record at this point.

(The documents referred to are as follows:)

STATEMENT OF THE TOWN OF DOUGHERTY, OKLA., PRESENTED BY CALVIN K. PRICE, SOUTHERN OKLAHOMA DEVELOPMENT ASSOCIATION

Mr. Chairman and members of the committee, Dougherty is located in the southern part of Murray County, in south central Oklahoma. It is a town of some 300 people and is situated in the fertile Washita River Valley in the scenic Arbuckle Mountains. It is approximately 2 miles southwest of the damsite of the proposed Lake of the Arbuckles. Geographically, Dougherty is centrally located in the proposed Arbuckle Lake area, being 10 miles southwest of Sulphur, and 8 miles southeast of Davis. Dougherty is 17 miles north of Ardmore.

The town of Dougherty has no bonded indebtedness, and has a gross evaluation of \$68,429. The Oklahoma Gas & Electric Co. furnishes electricity for Dougherty. Since the water wells are shallow and inadequate, there is no sewage disposal system. Modern homes are unavailable to the employees of the industries that are afforded; therefore with the help of a good water supply, Dougherty has every good quality for a good basic manufacturing expansion. Dougherty would also benefit directly and substantially from the fish and wildlife program and the recreational facilities of the project.

Although Dougherty has not been included in the project as a participating water user, our city has always been interested in obtaining a dependable water supply from the project. With a good water supply, it will be possible to modernize our town, and provide improved living facilities for our people. Because the water needs of Dougherty will be relatively small we respectfully request that the plan be modified so as to accommodate our needs.

Dougherty is located on the main line of the Santa Fe Railroad. It is one of the largest shipping points of the Santa Fe system. In addition to this great network of rail facilities, Dougherty is on State Highway 110 and the town is crisscrossed by a wonderful blacktop road connecting U.S. Highway 77 and State Highway 18.

Farming is a great industry in this Washita Valley as well as the immense income from the native and improved pecans. One of the world's noted ranches joins Dougherty on the north and occupies several thousand acres of the noted limestone grasslands of the Arbuckle range. Further industry is curtailed for lack of sufficient water. Potential industrial development can be brought to light if sufficient water can be obtained.

Shallow wells and open outdoor back-alley toilets are a menace to health in Dougherty. In this town more than 90 percent of the homes are not modern. Water is a necessity to combat this health problem.

Dougherty plans to be a part of the Murray County area redevelopment program. We believe that one of the first steps in such a program will be modernization of our small town by obtaining a water supply.

The officials of Dougherty recognize the necessity, desirability, and feasibility of this project. Dougherty needs water. We are willing to pay for it. We join the people of our neighboring town and area in petitioning the U.S. officials for this project for the benefit and general economic welfare of the Nation.

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

RESOLUTION BY THE GOVERNING BODY OF DOUGHERTY, OKLA., ON THE LAKE OF THE ARBUCKLES PROJECT

Now, therefore, be it unanimously resolved by said governing body of Dougherty that the construction of the proposed dam to create the Arbuckle Lake be unanimously approved and recommended by this body and the efforts obtain the fulfillment of this project on the part of this committee be approved and endorsed in every respect.

STATEMENT OF THE MURRAY COUNTY AREA REDEVELOPMENT COMMITTEE,
PRESENTED BY CALVIN K. PRICE

Because of persistent unemployment in the county of Murray, the President of the United States, by and through the Department of Commerce and the Department of Agriculture and under Public Law 87-271, act of May 1, 1961, declared Murray County, Okla., eligible for the benefits of the Area Redevelopment Act.

A very intensive study of the economics of this county indicates that there are three principal sources of income: agriculture, tourism, and mining.

With the consolidation of much of our farms into large units, we have had a net loss from the year 1950 to 1960 of 31.5 percent in employment of farm labor.

In mining, we have lost several industries, which have been forced to lay off, not only common labor, but heavy-equipment operators. We have heavy-equipment operators who are working over 100 miles from their home because of the unavailability of local work.

Tourism has generally held its own in the county. We have the only national park in the State of Oklahoma, with over 1,186,000 visitors per year.

The following is copied verbatim from a "Preliminary Economic Report for Murray County," dated April 1962, prepared by the Oklahoma Employment Security Commission, Oklahoma State Employment Service.

"LOCATION OF AREA

"Murray County is located in the south-central section of Oklahoma, approximately 80 miles south of Oklahoma City. The area has two major cities, Sulphur and Davis, which together comprise 65.3 percent of the county's population. Agriculture is the basic industry in the county followed in importance by government, trade, and mining.

"POPULATION

"According to the 1960 census, there were 10,622 persons residing in Murray County. There was a minor decline of 153 since 1950. This was a marked improvement from the conditions that prevailed between 1920 and 1950 when

there was a 10-percent decrease in the population. A longer lifespan, coupled with outmigration of the younger residents, raised the median age of the county's population 3.3 years between 1950 and 1960. This does not compare favorably to the drop of 0.9 year in the median age of the national population. The median age in Murray County was 33 years during 1950 and 36.3 years in 1960. The State's median age was 28.9 years in 1950 and 33 years for 1960 while nationally the median age was 30.2 years during 1950 and 39.3 years in 1959.

"LABOR FORCE

"The total civilian labor force at the time of the 1960 census was 3,459, up 1.7 percent from 1950. At the same time, employment numbered 3,257 compared at 3,259, 10 years previously. The largest decline over the decade, a 31.5-percent drop, occurred in agriculture. This reduction was partially offset by a 4-percent gain in total nonagricultural employment. Not all divisions of wage and salary employment shared this gain. However, a worker loss occurred in manufacturing, mining, contract construction, trade, and the "all other" group. The remaining industry divisions offset this decline and effected an overall gain of 100 workers over the past 10 years.

"Unemployment amounted to 202 persons in 1960 according to the census reports. This was a 42.3-percent increase over a similar period of 1950. The increase in joblessness stemmed from cutbacks in both agricultural and non-agricultural activities. Unemployment among service, except private household, increased 450 percent over the past decade. The joblessness in operatives and kindred workers increased 381.3 percent plus 100 percent increase in managers, officials and propos., exc. farm. Unemployment in craftsmen, foremen, and kindred workers was up 168.8 percent during the past 10 years. Total non-agricultural unemployment rose 42.6 percent while agricultural unemployment recorded a gain of 33.3 percent between 1950 and 1960.

"Wage and salary income data based on employment covered by the Oklahoma Employment Security Act represents approximately 65 percent of all nonagricultural wage and salary workers. Annual average income of covered workers for Murray County in 1960 was \$3,191 compared with the State figure of \$4,394. The only division of covered wage and salary employment with income above the State average was finance-insurance-real estate at \$4,595, which is 4.7 percent higher than the State. The remaining divisions of covered wage and salaried annual income comparisons are as follows:

	State of Oklahoma	Murray County	Difference	Percent Murray County is of State average
Mining.....	\$5,900	\$4,747	\$1,153	80.5
Construction.....	4,812	3,109	1,703	64.6
Manufacturing.....	4,980	3,008	1,882	61.5
Public utilities.....	5,066	3,887	1,179	76.7
Wholesale-retail trade.....	3,556	2,483	1,073	69.8
Service.....	3,067	1,450	1,617	47.3

"According to the 1959 Agriculture Census, annual farm income for Murray County was \$2,653 per farm as compared to the State average of \$2,113. The average size of farm in the area was 42.3 acres compared to 378.1 acres for the State according to the 1959 Agriculture Census. Between 1954 and 1959 the average size of farm in the country increased 66.2 acres as compared to a gain of 78.6 acres per farm for the State.

"Basic agricultural employment declined after 1930. This loss of farm employment is largely attributed to the shift in the type of farming from crops to livestock. In 1954 there were 20,041 acres in cropland while 178,154 were used for pasture on a total of 572 farms. By 1959 the total of land used for crop farming was 19,505 acres while 183,645 acres were used for pasture land and the number of farms decreased to 485. The increased size of the farm, coupled with the shift in the basic type of farm activity, were the contributing factors in both the gain in net income per farm and the increase in farm unemployment.

"DESCRIPTION OF THE AREA

"The area consists of rolling hills best suited for pasture land. Throughout the country there is an abundance of raw materials. It is estimated that there are resources of 1,300 billion cubic feet of natural gas and a considerable amount of crude oil. In addition, there are large quantities of rock asphalt, ground and glass silica, dolomite, limestone, and zinc. During fiscal year 1961, Murray County produced 356,741 barrels of crude oil worth approximately \$1,018,242 and 3,220 million cubic feet of natural gas. The only other natural resource exploited to any degree has been rock asphalt. There are still additional minerals: Granite, limonite and manganese located near Murray County in the Arbuckle Mountain area.

"The climate of Murray County is very advantageous for all forms of economic activity: Agriculture, nonfarm industry, and tourism. The average winter temperature is 40.2, spring 59.5, summer 80.3, and fall 65.9. The annual average temperature is 61.5 with a yearly precipitation of 41.11 inches.

"EXISTING FACILITIES

"The city of Sulphur has a mayor-manager-commissioner form of government which was inaugurated in 1924. Davis has a city manager form of government which consists of a manager and five commissioners, including the mayor, dating from September 21, 1955.

"The two major cities in Murray County, Davis and Sulphur, have three public grade schools, 2 junior high schools and 2 high schools with a capacity of 2,300 students. In addition, located at Sulphur, there is the State school for the deaf with an enrollment of 207 students.

"The county has two hospitals, Arbuckle Memorial and Oklahoma State War Veterans Home, which have a combined capacity of 168 beds. Also, there are 32 churches representing 14 denominations plus 55 active civic and fraternal organizations.

"To facilitate the tourists, the county has one hotel and nine motor courts. Platt National Park is located in the center of the county and is the only national park in the State. When Oklahoma became a State in 1907, approximately 25,000 persons visited the park annually. Subsequently, tourism has steadily grown until 1960 when 1,143,306 persons visited the park. It consists of 912 acres and has an ample picnic area with an additional 90 acres open for overnight campers. Each camp and picnic area has a tap for fresh running water. Adjoining the park is Veterans Lake, a municipally owned body of water consisting of 96 acres operated for the benefit of sportsmen.

"The Murray County area is supplied natural gas from the Lone Star Gas Co., which has an estimated 1,300 billion cubic feet available. Electric power is furnished by Oklahoma Gas & Electric Co., which has a modern generating station in Sulphur. This plant can produce 78,500 kilowatts per hour. Currently, an average of 40,000 kilowatts per hour are being used. The present power facilities in Murray County are adequate to supply both natural gas and electric power to any new industries that might enter the country."

There can be no question that the construction of the proposed Lake of the Arbuckles would bring temporary employment to many in this area during the construction of said lake, and on the completion thereof, would offer the opportunities of several different kinds of permanent employment.

The Murray County Area Redevelopment Committee endorses the Lake of the Arbuckles project.

STATEMENT OF THE SOUTHERN OKLAHOMA DEVELOPMENT ASSOCIATION,
PRESENTED BY CALVIN K. PRICE

Mr. Chairman and members of the committee, I am Calvin Price, a member of SODA and secretary-treasurer of the water resources committee of this fine organization.

Our purpose is to promote the orderly development of the economy in this section of Oklahoma. Our area has historically derived the majority of its economic benefits from the production of cash farm crops on the family farm and the production of raw materials, oil, limestone, and other basic minerals.

The dry years of the thirties, the depression, and the economic trend or necessity for having larger and larger farm units to support a family resulted in an overall loss of population, but in almost each instance resulted in a

population gain for the urban centers. Had it not been for the discovery of oil, the development of refineries, and expanded quarrying operations the loss of population might have been greater.

To best expand the economy in our area, which has historically been low in a State that does not rank among the highest nationally, we feel that proper development of water is of primary importance. We need a visible source of water to interest expanding industry that have reached their limits in other areas. We need adequate water to assure our own locally developed business ample water for normal profitable growth. The Arbuckle project fulfills these requirements. This organization has lent its full support to the promotion and development of the project. We financed the area economic report made by Dr. Francis Cella, of Oklahoma University, to the tune of some \$2,500 in the early stages of project investigation. We secured easements on lands for survey parties and furnished legal council in this regard. This organization in conjunction with the individual towns involved furnished \$10,000 for surveying and core drilling pipelines. This organization has coordinated the development of the Arbuckle Master Conservancy District.

There are five cities vitally interested in the Arbuckle project. They are Sulphur, Davis, Dougherty, Wynnewood, and Ardmore, Okla. These five cities anticipate normal growth, but do not have adequate water during mildly critical periods to maintain normal water service. During the drought of 1956, all of these cities had to ration or put controls on the use of water with the exception of Sulphur. At the peak of the drought, Sulphur wells, formerly artesian, dropped up to 18 feet from the surface and all the springs in the area went dry. Since the drought an extensive irrigation development has gone in tapping this reservoir, plus the fact that Ada, Okla., has recently added a number of new wells tapping this artesian basin. Sulphur feels anything but secure with their present supply.

The individual problems of each of these cities will be taken up in the statement of each town.

This Arbuckle project has been endorsed and approved by the Red River Valley Association and by the Mississippi Valley Association. Although flood control benefits are not high on the Arbuckle project, they are interstate in scope, as the dam will hold floodwaters off the Washita River and Texhoma Lake, the Red River, and the Mississippi.

Fish and wildlife benefits will be tremendous as the setting and topography of the area provides both food and shelter. Whitetail deer, raccoon, beaver, and other small animals now abound in the reservoir area.

The Arbuckle Reservoir will enhance the recreational opportunities of an area that is recognized as a beautiful playground at present. Platt National Park is adjacent to the reservoir site. Turner Falls, Price's Falls, Devils Den, Lake Murray, and Lake Texhoma are all within a few minutes' drive of the Arbuckle project. All of this comes into play when industry is looking for new locations for industry wants to locate where key personnel will be happy. SODA feels that our need is that visible water supply as we have things to offer in the way of climate, recreation and schools. Our labor force, while low paid, is self-reliant, loyal, and are socially and morally of high caliber.

Industries in the area which have suffered under water shortages in the past are Ben Franklin refinery in Ardmore, the Wynnewood refinery in Wynnewood, and the Ardmore Industrial Airpark. The Ardmore Industrial Airpark is of area significance. This installation was formerly the Ardmore Air Force Base, which was deactivated and turned back to the city of Ardmore. Lack of water has been a chronic problem of this installation, which now has as its source of water the Washita River. This source is inadequate and expensive as the river is constantly changing channels washing out the intake facilities. The water is also very hard and full of silt causing it to be expensive to process. The supply cannot be depended on through the summer months of low rainfall and this condition will probably become more acute since the construction of Cobb Creek and Foss Reservoirs at the headwaters of the Washita is some 70 to 80 miles to the northwest.

I have but touched on our need for a dependable water supply and this will be brought out in greater detail by the individual statement of each city. The cities and towns affected by this project do not have the capacity to vote bonds on a project of this size, but we are able to obligate ourselves over a 50-year period under laws and procedures set forth by our Senate and the Department of Interior for repayment. We feel that we have an efficient and an economical

project that will set the wheels in motion for higher standard of living in southern Oklahoma. Certainly if our living standards are raised the people in the east will have an expanded market for the goods they produce. Recreation and industrial development will directly benefit us locally, but indirectly will benefit in a small way everyone in this United States, from Maine to California.

Mr. PRICE. I am not going to make any long statement here. I just want to point out that south central Oklahoma and Murray County, Carter County and the southern part of Garvin County, which this project comprises is kind of one of the poor sections of Oklahoma—not the poorest, certainly, but one of the poor sections.

This committee, the Southern Oklahoma Development Association Committee, felt that one of the deterrents of growth and expansion was our lack of an adequate water supply and lack of a water supply that we could count on.

In other words, we experienced during periods of drought, controls on use of water and everything, and of course, you cannot have normal profitable industrial expansion in this situation.

I want to point out, too, that we have been working on this project for some 10 years in the way of time and money and everything. We have surveyed the pipelines. To the Bureau of Reclamation, we provided the funds, \$10,000. We also provided this Bureau a research report. We feel that we just definitely need this project. With that, I will let you talk.

Senator JACKSON. Thank you very much.

Senator Allott, any questions?

Senator ALLOTT. No.

Senator MONRONEY. Mr. Glen R. Key, Sulphur, Okla., member of Arbutle Master Conservancy District as Sulphur's representative.

Mr. KEY. I have no statement.

Senator MONRONEY. Next is Mr. Foster Thomas, Davis, Okla., city manager.

STATEMENT OF FOSTER THOMAS, CITY MANAGER, DAVIS, OKLA.

Mr. THOMAS. We have here a statement from the city of Davis—I have an official statement from the city of Davis, for the Senate Subcommittee, also an attachment of a resolution signed by the mayor and city council.

Senator JACKSON. The statements will be received for the record.

(The documents referred to are as follows:)

STATEMENT OF THE CITY OF DAVIS, OKLA., PRESENTED BY FOSTER THOMAS, CITY MANAGER

Mr. Chairman and members of the committee, the city of Davis, Okla., was incorporated as a town December 5, 1898, and was changed to a city September 21, 1955.

It is located in Murray County, and southern Oklahoma, in the heart of the Arbutle Mountains, home of Turner Falls.

We are 80 miles south of Oklahoma City, 20 miles north of Ardmore, Okla., also 9 miles west of Sulphur, the county seat, and the Platt National Park.

We are bordered on the west by the Washita River, also on the intersection of U.S. Highway 77 and State Highway 7. The main line of the Santa Fe Railroad runs through this city.

Davis obtains its present water supply from five wells. These are two wells about 40 feet in depth, located in terrace deposits of the Washita River in the northeast part of Davis; one well in the alluvium of a tributary creek; and two wells in the Washita River alluvium immediately west of town. Of the five

wells, three pump continuously and one cuts in and out automatically. The fifth well is maintained on a standby basis. The combined production capacity is reported to be about 600 gallons per minute. A recent test for water in this vicinity proved unsuccessful.

The construction of the Lake of the Arbuckle would make available to the city of Davis an abundant water supply which would enable us to expand industrially. During the summer months we are faced with water shortage, and we, the city of Davis, feel that the Lake of the Arbuckles would be the answer to our water needs.

The city of Davis has grown from 1,698 in 1940 to 2,381 in 1960; we feel that our growth will be greater with this project. At present we have 825 water meters installed. Our new telephone office with dial equipment should be ready for service June 1, 1962.

Davis 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 Lake of the Arbuckle project.

"RESOLUTION

"Whereas the Secretary of the Interior has recommended to the Congress of the United States that the Arbuckle project, Oklahoma, be constructed for the principal purposes of storing, regulating, and furnishing water for municipal, domestic, and industrial use, 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 H.R. 23 and S. 892, a bill to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

"Whereas the city of Davis 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 Davis, by authority of the city council, has signed the petition to form the Arbuckle project master conservancy district: Now, therefore, be it

Resolved by the City Council, City of Davis, Okla., That said council reaffirms its official position of endorsement of the Arbuckle 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 Foster Thomas is authorized to present this resolution and the official statement of the city of Davis in testimony to be given in support of the project before the U.S. Senate.

Senator JACKSON. Do you have any other statement, Mr. Thomas?

Mr. THOMAS. No, sir; only that we need the water.

Senator JACKSON. In other words, the whole trouble, I gather, is that the water supply is not too reliable, and as far as future growth is concerned, it is very questionable whether you can meet those requirements without a project of this kind; is that right?

Mr. THOMAS. Yes, sir.

Senator JACKSON. Thank you very much.

Mr. MONRONEY. We have Mr. Bobbie Riddle, Davis, Okla., Davis chairman of Water Resources Committee of Southern Oklahoma Development Association.

**STATEMENT OF BOBBIE RIDDLE, DAVIS, OKLA., DAVIS CHAIRMAN
OF WATER RESOURCES COMMITTEE OF SOUTHERN OKLAHOMA
DEVELOPMENT ASSOCIATION**

Mr. RIDDLE. I have no statements to make unless the committee would like to ask questions concerning the water supply of the city of Davis.

I would like to say this one thing, that during the 1950's, during the drought, we could not even wash cars during the summer months. The Washita River was not running; it was just dried up in holes. Our supply was disastrous.

Some of the people had to go to the county seat of Sulphur to get a water supply.

Senator JACKSON. Thank you very much.

Senator MONRONEY. Mr. Ellis Lindsey, Wynnewood, Okla., vice mayor of the city of Wynnewood.

**STATEMENT OF ELLIS LINDSEY, VICE MAYOR OF CITY OF
WYNNEWOOD, OKLA.**

Mr. LINDSEY. I have here resolutions from the city of Wynnewood, also resolutions from the city council, junior jaycees and Kiwanis clubs which I would like to submit for the record. I will not read my statement.

Senator JACKSON. All right, sir; they will be received for the record.

(The documents referred to are as follows:)

STATEMENT OF THE CITY OF WYNNEWOOD, OKLA., PRESENTED BY ELLIS LINDSEY

Mr. Chairman and members of the committee, I am Ellis Lindsey, vice mayor of Wynnewood, Garvin County, Okla. The citizens of Wynnewood have been intensely interested in the Arbuttle project, Oklahoma, since its inception.

In 1887 Wynnewood was founded near the Cherokee crossing on the Washita River. On December 14, 1907, Gov. C. N. Haskell issued a proclamation stating that since Wynnewood had a population of over 2,500, it was a city of the first class in the new State of Oklahoma. Agriculture was the chief and about all the industry in the area. In those days there was plenty of water for everyone. Changes in living conditions have given us a new way of life. Cities must have new industries to survive. Water has become the most precious commodity on the market.

The present population of Wynnewood is 2,509. Our population has been steady over a period of years.

Our water supply comes from eight shallow wells 50 to 60 feet in depth. The sand is fed from the flow in two small creeks; due to the construction of farm ponds and flood control dams, the flow in these creeks is greatly decreased. In reality we are faced with a vanishing water supply. The water level declines during heavy consumption in summer, raises some in low consumption periods, but never quite reaches the original level. We believe that if we had two drought years in succession, we would be in very serious trouble. Many times in the past we have had to ration water in the summer months. We have drilled many test wells in our vicinity, but have not been able to find any other source of supply. Since our water supply is limited, we are unable to furnish any large amount of water for industrial use. Industrially we have a 30,000 barrel crude oil refinery. This refinery processes all types of motor fuel, including aviation fuel. They also process and market a wide range of motor oil, road oil, and asphaltic products. The expansion prospects of this plant would be excellent if a dependable water supply was available. We also have a pecan processing plant and a broom factory. These plants employ about 300 people.

Since we are ideally located, we believe we could secure other small industries if we had an ample water supply.

We want to emphasize that the Arbutckle project is very vital to the future growth of Wynnewood and the entire southern Oklahoma area which can reach an important potential only if we have an adequate water supply.

It is a pleasure to submit for the record a resolution passed by the city council on June 11, 1962, which reaffirms our endorsement of the Arbutckle project and indicates our intention to participate in the project through an appropriate repayment plan.

We would also like to submit a resolution from the Wynnewood Chamber of Commerce, the Wynnewood Junior Chamber of Commerce, and the Kiwanis Club. All of these organizations are very much interested in the Arbutckle project.

It is a pleasure to appear before this committee. We thank you for this opportunity, Gentlemen, and I assure you that we in Wynnewood 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 APPROVED, PASSED, AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF WYNNEWOOD, OKLA., IN REGULAR SESSION HELD OF THE 11TH DAY OF JUNE 1962, IN THE CITY HALL BUILDING IN THE CITY OF WYNNEWOOD, OKLA.

The following members of the city council were present, namely: Marshall Glenn, L. J. Crawford, Elbert Green, LaDon Green, Ellis Lindsey, Pete Mettry, D. B. Mayberry, C. B. Grissom.

The following resolution was regularly moved by Councilman Ellis Lindsey, regularly seconded by Councilman Elbert Green, and voted upon by ayes and nays, and adopted by a vote of 8 ayes, and no nays:

"RESOLUTION

"Whereas the Department of the Interior has recommended to the Congress of the United States that the Lake of the Arbutckle project, Oklahoma, be constructed for the principal purpose of storing, regulating, and furnishing water for municipal, domestic, and industrial use, 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 H.R. 23 and S. 892, a resolution to authorize the Secretary of the Interior to construct, operate, and maintain said project; and

"Whereas the city of Wynnewood 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 Wynnewood, by authority of the city council has signed the petition to form the Arbutckle Master Conservancy District: Now, therefore, be it

"Resolved by the City Council of the City of Wynnewood, Okla., That said council reaffirms its official position of endorsement of the Arbutckle 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 Ellis Lindsey is authorized to present this resolution and the official statement of the mayor of the city of Wynnewood in testimony to be given in support of this project before the U.S. Senate."

RESOLUTION BY WYNNEWOOD CHAMBER OF COMMERCE, WYNNEWOOD, OKLA.,
JUNE 11, 1962

Whereas the city of Wynnewood, Okla., is situated in an area where natural resources abound; and

Whereas there is now no source of water available due to the geological formation of this area; and

Whereas the water now available from shallow production is low in quality and not sufficient in quantity for either domestic or industrial purposes; and

Whereas there is now being considered the construction of a lake, to be known as the Lake of the Arbutckles, which would furnish this community and adjacent

communities with sufficient water to provide for future industrial expansion, and also suitable water for domestic use: Therefore be it

Resolved, That the Wynnewood Chamber of Commerce is highly in favor of the construction of said lake and is of the opinion that said lake when completed will be of immeasurable benefit to this community and State for all time to come; and be it further

Resolved, That a copy of this resolution be sent to each Member of Congress from the State of Oklahoma and to the chairman of the congressional committee considering this proposal.

WYNNEWOOD JAYCEES, WYNNEWOOD, OKLA., APPROVED, PASSED, AND ADOPTED THIS 11TH DAY OF JUNE 1962 BY THE WYNNEWOOD JUNIOR CHAMBER OF COMMERCE, WYNNEWOOD, OKLA.

Whereas the water now available for the city of Wynnewood, Okla., is of small quantity and low in quality for either domestic or industrial use; and

Whereas our fair city is located in an ideal area for natural resources; and

Whereas we do not now have any new source of water available, due to the geological formation of this area; and

Whereas we are in dire need of a source of water such as the Lake of the Arbuckles, which is now being considered; and

Whereas the proposed Lake of the Arbuckles would furnish this community with sufficient water to provide for present needs and also for future growth: Therefore let it be

Resolved, That the Wynnewood Junior Chamber of Commerce, which we believe is a fair representation of the younger generation of Wynnewood, is much in favor of the construction of the proposed lake, and is of the opinion that the lake, when completed, will be of great benefit, not only to this community, but to the entire area and State of Oklahoma, for all time to come; and be it further

Resolved, That copies of this resolution be sent to each Member of Congress from the State of Oklahoma and to the chairman of the congressional committee considering this proposal.

RESOLUTION BY WYNNEWOOD KIWANIS CLUB, WYNNEWOOD, OKLA., JUNE 11, 1962

Be it resolved, the Kiwanis Club of Wynnewood, Okla., having studied the field draft of the Arbuckle project feasibility report and with the further information and clarification provided by Mr. Barclay, find it satisfactory in each particular. By this resolution, we, the Kiwanis Club of Wynnewood, Okla., wish to affirm our interest in the Arbuckle project and pledge our support and promotion to its final completion.

Mr. LINDSEY. The only thing I have to say is that we wholeheartedly endorse this project. Like other towns, we do derive our water from wells and we need the water bad. We understand our obligations and are ready to fulfill them.

Senator ALLOTT. How large is Wynnewood?

Mr. LINDSEY. 2,509.

Senator ALLOTT. Do you have any industries there?

Mr. LINDSEY. Yes; Kerr-McGee Oil Refinery.

Senator ALLOTT. How many people do they employ?

Mr. LINDSEY. 286, approximately. That was the last count.

Senator ALLOTT. And what is their consumption in gallons a day?

Mr. LINDSEY. Around 2 million—a little over 2 million, I would say.

Senator ALLOTT. Have you seen this report, sir?

Mr. LINDSEY. Yes.

Senator ALLOTT. The report gives the present capacity consumption at 1.15 million gallons a day for the Kerr-McGee. What other industrial demands do you have in Wynnewood for water?

Mr. LINDSEY. We have a pecan company there also. They employ approximately 25 people. It actually is a pecan-cracking plant. They take the pecans and shell them.

Senator ALLOTT. That is not a large consumptive user of water?

Mr. LINDSEY. No.

Senator LINDSEY. Have you discussed the price that will be paid for municipal water by Wynnewood?

Mr. LINDSEY. Yes.

Senator ALLOTT. What do you think water is worth for municipal purposes there, for repayment purposes?

Mr. LINDSEY. In my opinion, regardless of what you have to pay for it, it is well worth it. We figure that we spend more money per year than our repayment schedule would be trying to keep our wells running, pumps running, and cleaning them out and so forth. It is a big cost to us.

Senator ALLOTT. Well, what do you conceive that you would pay for water for municipal purposes from this project?

Mr. LINDSEY. I think the first year our project starts out, the repayment schedule is \$22,000.

Senator ALLOTT. How much per gallon, how much per million gallons?

Mr. PALMER. About \$196 per million gallons.

Senator ALLOTT. How much is this in acre-feet?

Mr. BARCLAY. It is a little over \$60 per acre-foot.

Senator ALLOTT. All right.

What is your present water supply situation? How many wells do you have?

Mr. LINDSEY. Eight.

Senator ALLOTT. How deep are they?

Mr. LINDSEY. Anywhere from 60 to 200 feet.

Senator ALLOTT. Is this hard water?

Mr. LINDSEY. Yes, sir.

Senator ALLOTT. Do you have to use softeners?

Mr. LINDSEY. Yes.

Senator ALLOTT. Are softeners in general use in your town?

Mr. LINDSEY. Yes; the city itself will not furnish them, but the biggest majority—well, not the biggest majority, but some of the people have installed softeners in their homes. It is very hard on the hot water tanks and taps and so forth, with corrosion.

Senator ALLOTT. We will get the rest of it from the Engineers. Thank you.

Senator JACKSON. Thank you very much for your statement.

Senator MONRONEY. Next witness is Mr. P. M. Brigance, Ardmore, Okla., mayor of Ardmore.

STATEMENT OF P. M. BRIGANCE, MAYOR OF ARDMORE, OKLA.;
ACCOMPANIED BY ANDREW B. RIDDLE, JR., CITY ATTORNEY OF
ARDMORE, ATTORNEY FOR ARBUCKLE MASTER CONSERVANCY
DISTRICT, AND ACTING CITY MANAGER, CITY OF ARDMORE,
OKLA.

Senator JACKSON. Mayor, we are very pleased to have you.

Mr. BRIGANCE. Thank you.

Senator JACKSON. Do you have a statement?

Mr. BRIGANCE. Yes.

Senator JACKSON. Your statement will be included in the record.
You will not need to read it.

Mr. BRIGANCE. Thank you.

(The document referred to is as follows:)

STATEMENT OF THE CITY OF ARDMORE, OKLA., PRESENTED BY P. M. BRIGANCE, MAYOR

Mr. Chairman and members of the committee, the city of Ardmore, Okla., was first identified as the 700 Ranch and is located midway between Dallas, Tex., and Oklahoma City, Okla., with U.S. Highways 70 and 77 intersecting at this city. The area in which the city of Ardmore is located was known in 1837 as the Chickasaw Division of the Choctaw Nation, Indian Territory, and later, in 1855, it was officially designated the Chickasaw Nation. In 1887 the Santa Fe Railway was brought through the present site which is known as Ardmore, Okla., and legend relates one of the officials named it from the small town of Ardmore, Pa., a suburb of Philadelphia, Pa.

In the early days Ardmore was the trading point for farmers and ranchers of the Chickasaw Nation and its economy was founded upon the cotton market with 50,000 bales of ginned cotton being auctioned on the streets of Ardmore in 1892. The growth of the city of Ardmore was greatly stimulated by the discovery of oil in 1913, this discovery contributing to the national prominence throughout the oil industry of the world. The principal industries that contribute to the development and growth are oil, industry, cattle, agriculture, research, and recreation. The climate, the terrain, and the recreational facilities near Ardmore make it a paradise for the man who loves the outdoors. The city is at an elevation of 890 feet above sea level. The population by the 1960 census is 20,184; and the installation of meters for utilities show a 4-percent growth in population—well above the national average—for the year 1961. The Ben Franklin Refinery and the Big Chief Roofing Co. increased their combined water consumption from 15 million gallons per month to 30 million gallons per month, thus increasing substantially the water needs for the city of Ardmore. The population growth and the industrial increase in water consumption necessitates a larger water reserve.

The present surface water supply of Ardmore consists of City Lake, which became a source of water supply in 1902, Mountain Lake, which was completed in 1922 and became a source of supply at that time, and, in 1957, seven deep wells (800 feet in depth) were located 12 miles to the northwest of Ardmore, the area identified as the Newport Basin, that will produce 2 million gallons of water per day. The two lakes have an approximate water storage of 1,800 million gallons of water. The present water production records indicate that Ardmore for the year 1961, produced 1,022,443,000 gallons, or a daily average of 2,800,000 gallons per day. Our present records also indicate a production trend of 20 million gallons per month increase over the past 4-year average. In addition to this increased production trend, we have at present an industrial consumers commitment for an increase of 550,000 gallons per day; therefore, the anticipated total production would be 4 million gallons per day. Assuming that it did not rain another drop from this day, Ardmore presently has 15 months of surface water supply. Using both surface water and well water the city of Ardmore has 30 months' water supply. The growth in population and the industrial consumption of water make vital the securing of water reserves.

The city of Ardmore has every reason to be concerned with future water needs; during the drought in 1954 through 1956 it was necessary to ration

its residents in the usage of water, which in turn, due to the shortage of water, many shrubs, plants, and trees were lost causing an economic loss to the citizens; also, the Ardmore Air Force Base rationed water taken from the Washita River to its personnel.

The Ardmore Air Force Base was deactivated in 1958, and subsequently this \$20 million facility with \$8 million worth of new buildings and 2,500 acres of land was returned to the city of Ardmore and in 1959 was renamed and is now known as the Ardmore Industrial Airpark. The city and the chamber of commerce has secured 6 new industries that presently employ 500 people. These employees pay taxes and help the economy of Ardmore. Land sites with utilities in place and railway and highway connection will attract more industry.

The construction of the Lake of the Arbuckles and the waterline by the industrial airpark, thence on to Ardmore, would insure industry at the airpark adequate water. Currently, water for the airpark is taken from the Washita River and the construction of upstream dams and flood prevention projects make this source questionable, as proven when water was rationed in 1954-56 at the airbase. Industry must have a dependable supply of water for sustained economic growth. The consumption of water has doubled since the first tenant moved to the airpark in January 1960, and the industrialization of the airpark has only begun.

Ardmore's assessed valuation is \$15,384,000. The tax rate: \$71.50 per thousand. The city has a bonded indebtedness of \$3,146,720. The economic base study of the Arbuckle Mountain area of Oklahoma by the Bureau of Business Research, University of Oklahoma, dated August 1957, in the estimated future demand for water in the Ardmore area:

	<i>Total water used (million gallons per day)</i>
Actual:	
1940 -----	709
1950 -----	1, 837
Forecast:	
1960 -----	3, 846
1970 -----	6, 838
1980 -----	10, 221
1990 -----	13, 866
2000 -----	17, 015

Considering the fact that the Lake of the Arbuckles water line will serve both the industrial airpark and Ardmore, these figures for current water consumption are below what the city of Ardmore alone is consuming on a yearly average, not considering the 100,000 gallons a day used at the airpark. A conservative future estimate at the industrial airpark is 1 million gallons a day.

We, the city officials and other interested residents of the city of Ardmore, Okla., have studied the feasibility report and are of the opinion that this is a worthy and just project and that we of the city of Ardmore are prepared, when the Lake of the Arbuckles is authorized by the Congress of the United States to submit to the citizens of Ardmore, by popular vote, the validation repayment schedule for the construction of the proposed Lake of the Arbuckles. As evidence of our position, we are submitting to the honorable members of the Committee on Interior and Insular Affairs, House of Representatives, a current resolution which reaffirms our endorsement of the project and indicates our intention to participate in the future development of this project.

We thank you for this privilege.

JANUARY 8, 1962.

To the Mayor and City Commissioners, Ardmore, Okla.:

The airport board, at a regular meeting Monday, January 8, 1962, passed the following recommendation:

"RESOLUTION

"The airport board recommends to the city commission that they accept the Arbuckle project as a long-range water reserve for the industrial airpark and the city of Ardmore.

"The average consumption of water for the city of Ardmore is 4 million gallons per day and at the present time has approximately 18 months' supply of surface water reserve. The industrial airpark has for the past year had an average of 200,000 gallons per day consumption.

"We, the airport board, endorse the Lake of the Arbuckles. An 8-year surface water reserve will resolve the water needs necessary for the industrial growth

and development of the airpark and Ardmore. In the interest of the continued industrial development of this area and to preserve the wildlife and stimulate the recreational facilities of this area, we urge this recommendation be adopted by the City Commission of Ardmore, Okla."

G. P. MIDDLEDAUGH,
Chairman, Airport Board.

JANUARY 10, 1962.

Hon. P. M. Brigance, Mayor of the City of Ardmore, and Members of the City Commission.

GENTLEMEN: The Board of Directors of the Ardmore Chamber of Commerce at its regular meeting on January 9, 1962, unanimously recommended that the city of Ardmore reaffirm its official position of endorsement of the Lake of the Arbuckles project, pledge its continued support, and restate its intention to participate.

We, the board of directors, took this action because we earnestly feel that an abundant source of water is necessary for our continued industrial growth as well as for the welfare of our present citizens and for the general growth of the community at large. And further because your indication of intent to participate at this time will permit our people at a later date to vote on this vital issue.

Respectfully submitted.

DEAN RUTLAND, *President.*

JANUARY 12, 1962.

To the Mayor and City Commissioners, Ardmore, Okla.:

Your planning board in a session on Friday, January 12, 1962, at which they discussed a resolution pertaining to the Lake of the Arbuckles as a surface water supply, after a thorough discussion and after evaluating future needs for surface water, passed the following:

"RESOLUTION

"*Be it resolved*, That the Ardmore Planning Board recommends to the city commission that the city continue its effort to form a conservancy district, which will be responsible for a complete actual presentation of all of the facts necessary to formulate a repayment plan to be submitted to the citizens of Ardmore for their formal action."

JOEL L. BETTES,
Chairman, Ardmore Planning Board.

RESOLUTION No. 1465

Whereas the Department of the Interior of the U.S. Government has recommended to the Congress of the United States that the Lake of the Arbuckles project be constructed for the principal purpose of storing, regulating, and furnishing of water for municipal, domestic, and industrial use, and for flood control, and for the conservation and development of fish and wildlife, and the enhancement of recreational opportunities; and

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

Whereas heretofore the mayor and board of commissioners of the city of Ardmore, Okla., have endorsed the preliminary studies and other proceedings having to do with the development of said project; and

Whereas the mayor of the city of Ardmore, Okla., by authority of the board of commissioners of said city, has signed the petition to form the Lake of the Arbuckles master conservancy district: Now, therefore, be it

Resolved by the mayor and the board of commissioners of the city of Ardmore, Okla., That this city council hereby reaffirms its official position of endorsement of the Lake of the Arbuckles project, pledges its continued support, and hereby states its intention, subject to ratification by a vote of the citizens and inhabitants of the city of Ardmore, 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 the Honorable P. M. Brigance, mayor of the city of Ardmore; R. C. Cavins, city manager of the city of Ardmore; and Andrew B. Riddle, Jr., city attorney of the city of Ardmore, or either of them, is hereby authorized to present this resolution in testimony to be given in support of said project before the U.S. Senate.

Passed by the city council of the city of Ardmore and signed by the mayor this the 15th day of January 1962.

P. M. BRIGANCE, *Mayor*.

Senator JACKSON. Do you have any comments or anything that has not been brought out here?

Mr. BRIGANCE. Ardmore is the largest of the cities involved. We are growing industrially. The airfield has been closed. We took it over and have in the last 18 months secured several good industries which use a considerable amount of water.

Senator JACKSON. What is the population of Ardmore?

Mr. BRIGANCE. A little better than 20,000. That was the official. We now figure it is around 22,000 or something like that.

Our anticipation is that we are going to continue to grow industrially, or at this time, Senator, figuring on some more industry that will locate there within the next several months.

So I think that the water—I think there is an allocation of 10½ million gallons per day for Ardmore.

Senator JACKSON. That is over a period of years that you reach that peak?

Mr. BRIGANCE. Yes; 63 percent, I believe, of the total. And, of course, our water supply now is from two lakes, two small lakes, and eight water wells. And it is at the time being—that is for residential and what small population we have within the city limits; I mean small industry. It is taking care of us, but when we have a drought, we cannot rely on these wells. We had to go buy water from a club lake that was out there, and the Senator has told you, our Senator Monroney, that we are subject to drought in the area, and we do not think it is unreasonable to ask for the construction of this project.

Senator JACKSON. Thank you very much.

Any questions?

Senator HICKEY. Mr. Chairman—pardon me, Senator Allott.

Senator ALLOTT. Where is Ardmore located on this map? Near the Ardmore Industrial Airpark here?

Ardmore is down below.

What is the distance from that to the airpark, Mayor?

Mr. BRIGANCE. About 13 miles from Ardmore to the airpark, where you have to go out the highway.

Senator ALLOTT. Are these lakes that you talk about the lakes designated on the map as Lake Ardmore and City Lake or which ones?

Mr. BRIGANCE. That is the lake in the mountains. Then we have another small lake.

Senator ALLOTT. Mountain lake and city lakes designated on the map are the two from which you presently get water?

Mr. BRIGANCE. Yes, sir.

Senator ALLOTT. And you borrowed from Lake Ardmore?

Mr. BRIGANCE. Yes; I think it is shown right there. We bought from them so many acre-feet of water during the drought.

Senator ALLOTT. Now, apparently from the lay of this map, would you have to pump from the proposed dam to get it to the industrial airpark into Ardmore?

Mr. BRIGANCE. No, sir; it would gravitate to the airpark. Then there would be a pump station there to put it into our city lake.

Senator ALLOTT. And to there it would be gravity?

Mr. BRIGANCE. Yes, sir.

Senator ALLOTT. So most of the way from the dam to the city lake would actually be by gravity?

Mr. BRIGANCE. Yes, sir.

Senator ALLOTT. You heard me ask the other gentlemen about the cost, and the cost was given as roughly \$60 an acre-foot. Is this the basis upon which Ardmore is willing to purchase this water?

Mr. BRIGANCE. I have a figure here on the rate, the cost to Ardmore, and I think you have it in some of your reports there.

The dam, \$3,107,000.

Am I correct, Mr. Barclay?

Mr. BARCLAY. The allocation to Ardmore?

Mr. BRIGANCE. And then your pipeline, \$3,375,000.

Senator ALLOTT. Total allocation to Ardmore is \$6,482,000?

Mr. BRIGANCE. Yes, sir. That is correct.

Senator ALLOTT. Now, is there any differentiation in the cost of water for municipal purposes and industrial purposes?

Mr. BRIGANCE. At the time being—you mean our present water?

Senator ALLOTT. No; contemplated if the construction is made.

Mr. BRIGANCE. Yes. That will be lower for industry. Our industry there now, when it uses so much—you have to have water for industry.

Senator ALLOTT. What industries do you now have at the airpark, sir?

Mr. BRIGANCE. Would you want me to name them?

Senator ALLOTT. Yes.

Mr. BRIGANCE. Black, Sivalls & Bryson.

Senator ALLOTT. What do they do?

Mr. BRIGANCE. They are in fiberglass manufacturing; also oil field tanks, storage, and so forth.

Senator ALLOTT. This would not involve a consumptive use of water, would it?

Mr. BRIGANCE. Yes; they use quite a bit of water with this fiberglass.

Senator ALLOTT. For cooling?

Mr. BRIGANCE. Yes. Then we have Lear & Co.

Senator ALLOTT. Electronics?

Mr. BRIGANCE. Semi. I am not quite sure what they are doing.

Mr. ANDREW RIDDLE. My name is Andrew Riddle, Jr., city attorney, Ardmore, Okla.

Senator, may I answer your question as to industry?

Senator ALLOTT. Yes.

Mr. ANDREW RIDDLE. We have, as Mayor Brigance pointed out, Black, Sivalls & Bryson engaged in the oil field storage business. Right now, they are primarily concerned with manufacturing of nose cones for the Polaris missile. We have Rogers Industries—

Senator ALLOTT. May I interrupt there? Is this a large consumptive use of water?

Mr. ANDREW RIDDLE. Yes, sir; I do not have their figures right now on the gallons or acre-feet they might use.

Senator ALLOTT. Go ahead.

Mr. ANDREW RIDDLE. Rogers Industries, a Minnesota concern, is located there. They are in the aluminum business, make aluminum siding for house trailers, windows. They are employing about 60 people right now and have just exercised an option which our commission gave them to double the size.

Senator ALLOTT. That would not be a consumptive use of water.

Mr. ANDREW RIDDLE. No, sir. We have the American Flyers Airline Corp., which is a supplemental carrier, one of the largest. We have the American Flyers, Inc., which is one of the—I guess the largest pilot training school in the Nation. They were at Fort Worth. They still have a school at Fort Worth.

They have virtually moved all and we hope within a year or two will be located completely there.

Senator ALLOTT. Neither one of those would be consumptive users?

Mr. ANDREW RIDDLE. No.

Lear, Inc., is in the aircraft engine repair business. They are right now repairing engines from Tinker Field, near Oklahoma City.

Senator ALLOTT. The same would be true of them?

Mr. ANDREW RIDDLE. That is right. So far as the air park goes, the large consumer of water would be Black, Sivalls & Bryson.

We have contacts through our congressional delegation, thanks to Senator Monroney, which indicate that one other industry will be there.

I have submitted a contract to them already. They will be users of water.

I would like to point this out, and then I will retire.

The supply of water that is furnished the air park at this time comes from the Washita River. The river is fickle in that it changes its course. Right now we are faced with the proposition of having to condemn some land in order to protect the rights that we have.

Senator ALLOTT. How is that water diverted? By dams or wells?

Mr. ANDREW RIDDLE. No, sir; we have an intake system through a pump to a treatment plant. It is treated and distributed to our users.

Senator ALLOTT. Is that a river without any diversion dam of any kind?

Mr. ANDREW RIDDLE. There is no diversion dam on it. We are in the process now—we hope to carry out some riprap work in there, because within the last 30 days, the river has lost 60 feet of its bank. The air park drilled five wells which did not prove successful.

Senator ALLOTT. So the park is dependent completely on the river?

Mr. ANDREW RIDDLE. Completely on the river and it is hard.

Senator ALLOTT. Hard as nails?

Mr. ANDREW RIDDLE. Hard as nails.

Senator HICKEY. Mr. Mayor, your city attorney may best answer this question. As I read the report here and your testimony, it is indicated that basically, your industrial requirements are the basic needs that this will fulfill; is that correct?

Mr. BRIGANCE. I think that is correct, sir.

Mr. ANDREW RIDDLE. My statement was confined to the industrial air park. I did not discuss the city problems. I can give you information on that if you would like to have it.

Senator HICKEY. Well, if generally it is an industrial requirement, that is the basis for my next question. In Oklahoma, do your statutes provide for an industrial preference?

Mr. ANDREW RIDDLE. No, sir, they do not. I may be back up here in a few minutes on this conservancy district and I will go into that at that time, if you would like me to.

Senator HICKEY. Is there no mention of industrial use of water as a preferential use in Oklahoma?

Mr. ANDREW RIDDLE. No, sir; not to my knowledge, sir.

Senator HICKEY. You may need some legislation.

We went through that. I know many of the Western States do not have industrial use preference.

How do you justify the industrial use from prior appropriators when you proceed in this fashion?

Mr. ANDREW RIDDLE. I am not sure I follow the question, sir.

Senator HICKEY. Normally as I recall the statutes, they say the following are preferential users—domestic, stock water, irrigation, whatever else there are, and these are preferential uses of water available. I assume you would probably have a good deal of domestic use, which I presume is construed not to include industrial. You will probably have some stock water use. Would they have a prior claim on the water which you have?

Mr. ANDREW RIDDLE. Yes. I can answer that now. Yes, sir, we are involved right now in a case which is being held in the town of Chickasha, Okla., which is in the central section, to determine the water rights on the Washita River.

That case has been pending since 1958 and, unfortunately, we have not been able to get our attorney general to take a part in it under the statute. So I do not know what disposition will be made of it.

So the cities that are involved in this legislation are seeking to have their rights to the Washita specifically allocated.

Senator ALLOTT. Would you yield there?

Senator HICKEY. Yes.

Senator ALLOTT. Following Senator Hickey's questions, if this case is not determined, where would you be with this construction?

Mr. ANDREW RIDDLE. If the case is not determined?

Senator ALLOTT. Or if it is not determined in your favor.

Mr. ANDREW RIDDLE. Well, I have made some investigation of that, Senator, to the point of discussing it with other communities involved. In my judgment, it would have no effect on the proposed project at all. The rights to the river would have no effect on the proposed project.

Mr. PALMER. Senator Allott, may I volunteer that on May 14, 1957, the Assistant Secretary of the Interior notified the Oklahoma Water Resources Board of the Department's intention to develop all unappropriated water on Rock Creek and its tributaries originating above Arbuckle Dam and requested their withdrawal from further appropriation.

The chairman of the board, in reply of June 7, 1957, stated that said waters would be withheld pursuant to Oklahoma statutes.

So the waters for the Arbuckle project are already available under this exchange of letters under Oklahoma law.

Senator ALLOTT. Would you yield for one further question, Senator?

Senator HICKEY. Yes.

Senator ALLOTT. Then from your analysis of this, the steps that you have taken, under the Oklahoma constitution, under the Oklahoma

law, would make this water developed under the Arbuckle Dam available for the proposed uses?

Mr. PALMER. Yes, sir.

Senator ALLOTT. Thank you very much for yielding, Senator Hickey.

Senator HICKEY. This is basically an application under the Flood Control Act, is that correct?

Mr. Palmer, is the application based upon the Flood Control Act of 1944?

Mr. PALMER. No, sir.

Senator HICKEY. That did not have any part—

Mr. BARCLAY. I think that comes back to the original organization act of the State of Oklahoma and it is under title 82, section 91, of the original Oklahoma law.

Now, subsequently, that has been amended in the last year or two, but in 1957 it provided that upon appropriate application or notification by an official of the United States to the State of Oklahoma, such waters would be withdrawn and reserved for the intended project development.

Senator HICKEY. Thank you.

Senator JACKSON. Any further questions?

Thank you, gentlemen.

Senator MONRONEY. We have with us W. L. "Bill" Keeter, vice mayor of Ardmore, Okla.

Mr. KEETER. I have no statement to make at this time.

Senator MONRONEY. Mr. S. A. Pittman, Ardmore, Okla., member of the City Council, Ardmore.

Mr. PITTMAN. I have no statement to make at this time.

Senator MONRONEY. Mr. Jack Conroy, Ardmore, Okla., member of the City Council, Ardmore.

Mr. CONROY. Also no statement. I think the people of Ardmore will support it.

Senator MONRONEY. Mr. Ted Berryhill, member of the City Council, Ardmore, Okla.

Mr. BERRYHILL. I have no comment.

Senator MONRONEY. Mr. Andrew B. Riddle, Jr., city attorney, Ardmore; attorney for Arbuckle Master Conservancy District, and acting city manager, city of Ardmore.

Mr. ANDREW RIDDLE. I have just responded, gentlemen. If you have any question, I will be glad to answer them.

Senator JACKSON. Thank you very much for your statement.

Senator MONRONEY. All of the members of the Ardmore City Council are here indicating by their presence that they endorse this.

Mr. Frank Raab, director, Oklahoma Water Board, is here.

STATEMENT OF FRANK RAAB, DIRECTOR, OKLAHOMA WATER RESOURCES BOARD

Senator JACKSON. We will be glad to hear from you, Mr. Raab.

Mr. RAAB. I appreciate the opportunity to be here. I was here in January with our board of directors and we certainly always appreciate the treatment of this committee.

Senator JACKSON. Do you have a prepared statement?

Mr. RAAB. I have a statement from the Governor of Oklahoma. To save time, we will not read it, with your permission.

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

(The document referred to is as follows:)

STATE OF OKLAHOMA,
EXECUTIVE CHAMBERS,
Oklahoma City, June 18, 1962.

Re Arbutckle project, Rock Creek, Okla.

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

DEAR SENATOR ANDERSON: I regret that it is impossible for me to appear before your committee personally in support of the proposed Arbutckle project in south central Oklahoma located on Rock Creek a tributary of the Washita River, Red River Basin.

My office, with the assistance of several State agencies who have responsibility under Oklahoma law for the development of water resources and related benefits, has worked very closely with the Area Planning Office of the Bureau of Reclamation and its regional office in Amarillo, Tex., in the development of this project report which is before you for consideration.

The urgent need for the authorization for construction of this project cannot be overemphasized. The need for flood control, municipal, and industrial water supplies, fish and wildlife and recreational opportunities are needed to insure a stable economy in the area of the project. Present water supplies for the various purposes are inadequate in the project area at this time, particularly with reference to municipal and industrial water supplies. The several communities who will participate in the benefits of the project are presently depending on ground water supplies which are limited while the waters of Rock Creek and its tributaries are running uncontrolled to the sea.

The participating project cities, and others interested in water supplies that the project will make available, have investigated the possibility of developing their individual water supplies to meet their present and future needs. However, because of the difficulty in financing, they feel that a joint effort should be made in order that the multiple-purpose benefits of the project can be realized.

We urgently request that your committee give favorable consideration to the authorization for construction of this project. The State of Oklahoma pledges its full cooperation in the development and operation of the project so that the maximum benefits of this multiple-purpose project will be realized.

Respectfully submitted,

J. HOWARD EDMONDSON,
Governor.

Mr. RAAB. Then a statement of the water board, which we will not read.

Senator JACKSON. That will be included in the record.

(The document referred to is as follows:)

OKLAHOMA WATER RESOURCES BOARD,
Oklahoma City, Okla., June 18, 1962.

Re Arbutckle project, Rock Creek, Okla.

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

DEAR SENATOR ANDERSON: We greatly appreciate the opportunity to present this statement in support of the Arbutckle reclamation project located in southern Oklahoma and situated on Rock Creek a tributary of the Washita River, Red River Basin.

The Oklahoma Water Resources Board has worked very closely with the area planning office of the Bureau of Reclamation in Oklahoma City, the regional office of the Bureau at Amarillo, Tex., and with the project sponsors which are the cities of Sulphur, Davis, Wynnewood, Ardmore, Ardmore Industrial Park,

and the town of Daugherty in developing the project plan. Water rights are in the process of adjudication by the district court so that the water supplies for the project will be assured.

We believe the project is engineeringly sound, economically feasible, is a sound Federal investment, and is urgently needed to develop additional water supplies to meet present and future needs.

At the present time participating cities are withdrawing water from ground water sources which are limited in the project area while the waters of Rock Creek are running to waste without beneficial use. These limited ground water supplies should be reserved for future emergency use, therefore, we respectfully request that your committee give favorable consideration and approval to H.R. 23 which will authorize the project's construction.

The Oklahoma Water Resources Board pledges its full cooperation during construction of the project and its operation when built so that the maximum potential benefits of the project can be realized.

Respectfully submitted.

FRANK RAAB, Executive Director.

Mr. RAAB. Our organization has the responsibility of coordinating all the interest on the State level and the local level. That is all the statement I have, unless you have some questions.

Senator JACKSON. Any questions?

(No response.)

Senator JACKSON. Thank you very much.

Senator MONRONEY. This completes the list of the user group from Ardmore and the other cities and the Department is here, represented by the Reclamation Service.

Senator JACKSON. Thank you very much, Senator Monroney.

Senator MONRONEY. I appreciate your courtesy to the witnesses and your understanding in inquiring into this very important project.

Senator JACKSON. We want to thank you for arranging for the witnesses and their presentation here.

Mr. Palmer and your staff? I think your people can come right on up here.

STATEMENT OF WILLIAM F. PALMER, ASSISTANT COMMISSIONER OF RECLAMATION; ACCOMPANIED BY M. G. BARCLAY, AREA ENGINEER, OKLAHOMA CITY DEVELOPMENT OFFICE; JAMES T. McBROOM, CHIEF, DIVISION OF TECHNICAL SERVICE, SPORT FISHERIES AND WILDLIFE; AND WILLIAM N. WHITE, CHIEF OF RIVER BASIN STUDIES, SPORT FISHERIES AND WILDLIFE

Mr. PALMER. I have here with me Mr. Mart Barclay, area engineer, Oklahoma City Development Office; Mr. James T. McBroom, chief, division of technical service, sport fisheries and wildlife. Also with me here, although they may not join us at the table, is Mr. Dan McCarthy and Mr. Hugh O'Dor of the bureau's project development staff.

I am pleased to appear before this committee in support of S. 892 to authorize construction of the proposed Arbuckle project. The project was introduced in the House by H.R. 23, a companion bill to S. 892, which is under consideration here today.

Full hearings on H.R. 23 were held by the House Subcommittee on Irrigation and Reclamation on February 19 and 20, 1962, at which time the Department gave its full endorsement of the project.

On April 18, 1962, the House Interior and Insular Affairs Committee recommended enactment of H.R. 23, with certain modifying or

clarifying amendments, and the bill was passed by the House on May 19, 1962. Mr. Chairman and members of the committee, our position has not changed; we still recommend authorization of this worthwhile project.

The proposed multipurpose water resource development is located in south-central Oklahoma in the Washita River Basin in Garvin, Murray, and Carter Counties.

The primary purpose of the project is to provide needed municipal and industrial water to the cities of Ardmore, Davis, Sulphur, Wynnewood and the nearby Kerr-McGee oil refinery. The communities of the area have long recognized the need for a dependable water supply. During the severe drought of the 1950's, this need led civic leaders to organize the Murray County Water Resources Committee. The functions of this committee were later assumed by the Southern Development Association, an organization whose objective is to establish a broad base for regional economic development.

This association has worked diligently in a search for new or supplemental water to meet the needs of the area during periods of insufficient supply, as well as to furnish water necessary to expansion and growth.

As a result of this interest and necessity, the Bureau of Reclamation made investigations which have resulted in the report which is now before you. Local interests have evidenced their full endorsement of the project plan and have contributed funds and services to expedite the studies and preparation of the report.

Their leaders have adequately testified as to their interest and support. The plan of development provides for the construction of Arbutle Dam and Reservoir on Rock Creek, a tributary of the Washita River, about 6 miles southwest of the city of Sulphur.

The dam would be a rolled-earth dam about 1,870 feet long with a height of 139 feet above streambed. It will contain about 2,800,000 cubic yards of material. The reservoir would have a total capacity of 226,450 acre-feet, including 120,650 acre-feet of surcharge.

Senator ALLOTT. May I ask what you mean by that?

Mr. PALMER. It is primarily flood-control space.

Mr. BARCLAY. Surcharge is the capacity we use in lieu of spillway. We can either store the runoff from the design flood or use spillway capacity. It is cheaper in this instance to store the design flood than to use spillway capacity to pass it.

Mr. PALMER. The area of the reservoir at the top of the conservation pool is 2,248 acres. A total of about 45 miles of pipelines, consisting of three separate lines, would deliver water to the project users. Facilities and their operation for water treatment and purification will be provided either by the Arbutle Master Conservancy District at a central plant or by the project cities on an individual basis.

Additionally, of course, the cities will provide the entire district distribution systems involved.

The Wynnewood pipeline would begin at a pumping plant at the dam and extend northerly to Wynnewood, a distance of 20 miles.

The Sulphur pipeline would extend 3 miles from a pumping plant on the east shore of the Rock Creek arm of the reservoir to existing Veterans Lake near Sulphur. The Ardmore line would extend south and southwesterly from the outlet works at the dam to the Ardmore water treatment plant at existing City Lake, a distance of 22 miles.

All involve flows by pumping pressure as well as by gravity. The oil refinery which would tap the Wynnewood line will provide for the necessary spur pipeline to its plant, either by its own construction or by advance of funds in the event of construction by the Federal Government.

By letter of May 14, 1957, the Assistant Secretary of the Interior notified the Oklahoma Water Resources Board of the Department's intent to develop all unappropriated waters of Rock Creek and its tributaries originating above Arbuckle damsite and requested their withdrawal from further appropriation. The chairman of the board, in a reply of June 7, 1957, stated that the said waters would be withheld pursuant to Oklahoma statute. This was explained.

Project studies indicate that the proposed Arbuckle Reservoir conservation storage capacity of 58,300 acre-feet would yield about 16½ million gallons of water daily for municipal and industrial supply, approximately equal to the projected additional water requirements of the project cities in the year 2015.

The flood-control capacity of the proposed reservoir, 35,900 acre-feet, would have prevented all flooding along Rock Creek during the period 1922 through 1958 and would have substantially reduced the magnitude of floods during that period on the Washita River which occurred coincidentally with the floods on Rock Creek.

The Fish and Wildlife Service recommendations in the report include provision for a total of 1,275 acres on which to develop a wildlife habitat, which would serve to mitigate losses in upland game-hunting opportunities resulting from reservoir construction. This area would be administered by an appropriate State entity. The reservoir is also expected to provide excellent sport fishing opportunities.

Basic recreation facilities for protection and accommodation of the public would be provided as a part of the project. These facilities would include access roads, picnic areas, camping and boating facilities and the acquisition of about 340 acres of land. We have additional studies underway for an enlarged area of recreation. If it is later determined desirable, after project authorization, the enlarged plan for recreation development will be submitted to the Congress for consideration. This was recognized in the House hearings and included in the committee's report. Recreation planning and development will be carried out with the cooperative efforts of Federal and State agencies and the Water Users' Organization.

Based on prices as of June 1959, which are also applicable today, the estimated construction cost of the Arbuckle project is \$13,340,000. This cost includes \$7,092,000 for Arbuckle Dam and Reservoir; \$5,730,000 for the municipal and industrial water pumping plants and pipeline systems; \$450,000 for basic recreation facilities; and \$68,000 for fee acquisition and development of additional lands for wildlife conservation that would not be acquired for other purposes.

The estimated total cost is allocated to the principal purposes as follows:

Municipal and industrial water supply	\$10,599,000
Flood control	362,000
Fish and wildlife	1,929,000
Recreation	450,000
Total	13,340,000

Annual operation and maintenance and replacement costs of the dam and reservoir are estimated to total \$12,000 on the basis of current prices. Comparable operation and replacement costs over the 50-year repayment period for the municipal and industrial water systems are estimated to average \$66,000 annually. No Federal costs are included for operation, maintenance, and replacement of specific recreation and wildlife management facilities, as it is contemplated that these would be the responsibility of State or local agencies administering these areas who are willing to assume such costs. Of the estimated \$12,000 annual operation, maintenance, and replacement costs for the reservoir, \$4,000 is allocated to fish and wildlife and would be nonreimbursable under the Wildlife Coordination Act.

The legislation you are considering permits the transfer to the water users' organization of the care, operation, and maintenance of the works, and if such transfer is made, the reasonable capitalized equivalent of the operation and maintenance cost allocated to flood control and fish and wildlife purposes may be deducted from the total obligation of the water users.

The repayment plan in our report contemplates repayment of the cost allocated to municipal and industrial water over a period of 50 years, with interest at a rate determined in accordance with the Water Supply Act of 1958. The payment plan also contemplates no payment of interest charges on 30 percent of the investment cost of the dam and reservoir for a 10-year period, also under provisions of the Water Supply Act of 1958.

The Southern Oklahoma Development Association and the individual communities included in the project plan have endorsed and expressed their support of the proposed development. The communities have done so by formal resolution.

The district's average costs of municipal and industrial water ranges from 13.4 cents per 1,000 gallons initially to 9.4 cents per 1,000 gallons near the end of the 50-year period, the average cost being 11.1 cents per 1,000 gallons. The cost to individual municipalities within the district varies according to location and water delivery schedule.

The Arbuckle Master Conservancy District was organized April 24, 1962, by order of an Oklahoma district court of jurisdiction. This conservancy district, organized under Oklahoma statutes, has authority to execute a repayment contract with the United States for repayment of reimbursable project costs. Such contracts would establish the water deliveries and repayment arrangements. It is contemplated that the dam and reservoir and the water supply features of the project will be operated by the Arbuckle Master Conservancy District.

Construction of the proposed project is fully justified by the ratio of benefits to costs, which is 1.92 to 1, on the basis of total benefits over a 100-year period of analysis. For a 50-year period of analysis, this ratio would be 1.59 to 1. Since no irrigation is involved, direct benefits and total benefits are the same.

I might add at this point that under the procedures governing project economic evaluation promulgated by the President on May 15, the benefit-cost ratio figures included here undoubtedly improve.

We believe that the proposed Arbuckle project is a highly desirable project which will provide maximum beneficial utilization of the available water resources, and that it is essential to the continued

economic development and growth of the area. We recommend favorable action on its authorization.

Now, in the departmental report on the bill, there were several clarifying amendments proposed. I might add that these all were picked up in the House bill and we urge their acceptance in the Senate bill.

There are two or three points that were raised during discussion that maybe I can clarify at this point. The Ardmore Master Conservancy District was actually organized in 1962. But legislation which authorized its organization was enacted in 1961, contains a number of interesting provisions. One section which pertains to payments of moneys due the United States from the master conservancy district says:

All payments to become due to the United States under any Federal contract entered into by the master conservancy district and the United States may be paid from revenues or derived from assessments upon the real property of the district as provided in the Conservancy Act. It shall be the duty of the board of directors of the contracting district, pursuant to the provisions of the Conservancy Act, to make and establish all levies, assessments, tolls and charges to meet each year the contract indebtedness and obligation as the same may be provided in any Federal contract heretofore or hereafter entered into.

So, not only is this project supported by the individual water service contracts that are entered into, the needs for which the gentlemen from Oklahoma have already stressed, but it is also supported by an act of Oklahoma and the organization of the master conservancy district, which would guarantee—absolutely guarantee—that moneys due and payable to the Government under the contract would be paid, either from revenues derived from the sale of water or from ad valorem taxation.

Senator JACKSON. What about the ceiling recommended by the Bureau of the Budget and placed in the bill by the House?

Mr. PALMER. We would have no objection to the inclusion of that ceiling. We believe these estimates are sound and—

Senator JACKSON. You don't believe you will have to come back for further or additional authorization?

Mr. PALMER. No, sir; we do not.

Senator JACKSON. Based on your estimates you have worked out?

Mr. PALMER. Mr. Barclay assures me these estimates in the plan presented have been very carefully developed and checked with the appropriate sources and we can live with the amendment. As mentioned earlier, we will report to the committees on possible additional recreational development.

Senator JACKSON. Do the pipelines run to the municipalities from the dam?

Mr. PALMER. The three pipelines—

Senator JACKSON. I mean do they run to the municipal city limits.

Mr. BARCLAY. This one here [indicating] runs within the city limits. This is the Wynnewood line. It runs within the city limits, because that is the initial point of distribution within the city. This one down here runs up to Veterans Lake because this is a local storage point right here and we get regulation from this lake here.

This one down here [indicating the Ardmore line] at the time we made our plan ran up to the City Lake at this point and that is some miles outside the city limits. We put it there at the request of Ard-

more as their present filtration plant is located there. We thought it might be integrated into the present water supply system at this point.

Senator JACKSON. How do you determine the point of delivery? Is it where the distribution system meets?

Mr. BARCLAY. Yes, sir.

Senator JACKSON. What is the test is what I am trying to get at.

Mr. BARCLAY. There was a negotiated agreement between the city and the Bureau at the time we prepared the plan to integrate the project water supply with the city's existing facilities. It is usually at the point of origin of the distribution system of the city's present water supply.

Senator JACKSON. Senator Allott?

Senator ALLOTT. I have several questions I would like to ask on this.

First of all, I would like to ask what study has been made of the water supplies of the watershed—I do not know what the name of it is—where the dam is to be constructed.

Mr. BARCLAY. The Bureau has proposed that this stream be available. This is Rock Creek. This is made up of Sandy and Rock Creeks and Buckhorn Creek here. The city—the sponsors—participated by providing funds for the survey. We had stream gages installed right in this area at this point, about 1956 or 1957. We have measured streamflow since that gage was installed in 1957. We have made analyses of other stream gaging stations in this area, Blue River over here and of course the Washita River and we have worked out a correlation of other stream gaging stations in the area. We have estimated the water supply from 1926 to the present. The average flow at this point, the damsite, is around 44,000 acre feet a year. It varies a great deal, from a minimum of about 7,000 acre feet in the driest year—1956, I believe it was—to a maximum of about 161,000 acre feet in the year of 1957.

Now, 1957 was the worst flood year of record. That was 161,000 acre feet. The driest year of record was the previous year, 1956, about 7,000.

Senator ALLOTT. Are these stream gaging stations on the Sandy and Buckhorn and—

Mr. BARCLAY. No, sir; all these streams come together at about the damsite and the stream gage is downstream about 3 miles.

Senator ALLOTT. So you are basing this on only 4 years actual measurement?

Mr. BARCLAY. It is about 6 years of record. Our report has about 5 years of record at the time we made our estimates on water supply here. We have correlated with streamflow records over here on the Blue River. We have several years of record over on the Blue and several years of record down here on the Washita River. We correlated those, went through an extensive correlation calculation and made many correlations by the use of electronic computers and we think we have a very reasonable estimate of water supply.

Senator ALLOTT. Well, it seems to me that you may be taking quite a chance when you are gaging the water supply on this watershed by water supplies in other watersheds.

Mr. BARCLAY. Correlations are difficult, we agree to that but we have had many years of experience in this field and are confident that

the data is dependable. But we have considered this to be a very conservative evaluation. Actually, there are many that disagree with this and think that the water supply might be a little more than we estimate. However, we have tried to be on the conservative side.

Senator ALLOTT. You think it is about 44,000 acre feet and that will average out over a period of years, of course?

Mr. BARCLAY. Yes, sir.

Senator ALLOTT. With the extreme variations you have suggested?

Mr. BARCLAY. Yes, sir.

Senator ALLOTT. Is there any question in your mind, Mr. Barclay, that this dam would not develop over a period of years the amount of water necessary for the feasibility of this project?

Mr. BARCLAY. No, sir; I have no reservations on that. I think it will accomplish that and I think it will yield as much water as we say, and maybe a little more.

Senator ALLOTT. Of the total capacity of the reservoir, 35,900 is for flood control?

Mr. BARCLAY. Yes, sir.

Senator ALLOTT. The Corps of Engineers has indicated that the merits of including flood control in the Arbuckle project would not be justified under the criteria used by the Engineers, is that correct?

Mr. BARCLAY. I do not think they would take that position now. Our economic evaluation is based on 100 years of analysis. On the basis of a 50-year period of analysis, it is just slightly under 1-to-1 cost-to-benefit ratio on the basis of incremental costs.

The Corps of Engineers and the Bureau both used a 100-year period of analysis and it is justified on the basis of that.

Mr. PALMER. Since May 15, we are all using a 100-year period of analysis. This is the figure prescribed by the President's release.

Senator ALLOTT. Now, going to page 5 of your statement, I note that fish and wildlife have been allocated \$1,929,000, recreation \$450,000.

As I add these, that makes \$2,379,000, or 18 percent of the total cost is allocated to recreation and fish and wildlife.

Well, I come back to the question that the distinguished chairman of the Interior Committee in the Senate has asked many times, how do you determine how much you are going to allocate to fish and wildlife?

Mr. PALMER. Senator, these allocations, as well as all the allocations we use, are made under the standard procedure known as the separable costs-remaining benefits basis. Under it the annual benefits are supplied us by the specialists in the field, whether it be flood control or fish and wildlife, and then the allocation calculation is made by the Bureau, in accordance with the separable costs-remaining benefits formula and costs are allocated to each function in appropriate amounts.

This has been a basis of allocation that has been accepted by the Bureau of the Budget and recommended to the Congress and has been used in nearly all of these. In virtually all of the reports we have brought to the committee in recent years have been on the basis of separable costs-remaining benefits.

Senator ALLOTT. In effect, what you are doing, really, aren't you taking the total costs, figuring the recoverable features, and then assigning the rest to fish and wildlife?

Mr. PALMER. No, sir; we are not. This is not the way to go about it. Actually, what we do in working out the allocation is the Bureau of Sport Fisheries and Wildlife calculate the benefits and certify those benefits to us, as the corps does in the case of the Corps of Engineers flood-control benefits.

Then those benefits are allocated on the basis of the formula I mentioned. The allocations are made on that basis. These figures that are before you here—now, for example, this recreation allocation is only on the basis of your so-called minimum public use facilities and the Department will file a supplemental report on recreation with both the committees of the House and the Senate later on recreation.

In other words, in this recreation question, as this figure appears before you now, there is no part of the joint works cost assigned to recreation. The only thing that is assigned to recreation are those specific features built entirely for recreation.

Senator ALLOTT. How much did we have for recreation in the Cheney project? What percentage recreation and wildlife?

Mr. PALMER. As I recall, it was somewhere between 18 and 25 percent also.

Senator ALLOTT. What was the Norman project?

Mr. PALMER. It was about the same.

Senator ALLOTT. All three of these projects in the same general geographic area running about the same, then?

Mr. BARCLAY. Senator, in trying to explain the fish and wildlife allocation there, which is the principal one you are concerned with, the justifiable expenditure will be about \$61½ million. That is based on the estimated benefits. But an alternative considered is the Sandy Creek Arm, \$2,828,000. That would be for an alternate reservoir that would give us approximately equivalent benefits. So, actually, we have used considerably less than justifiable expenditures—about one-third of the justifiable expenditures. That would have been allocated to this purpose under the alternative justifiable expenditure basis of cost allocation.

Senator ALLOTT. I note that there have been studies made as to the construction of this by financing from private sources. Do you know anything about those?

And why they were made?

Mr. BARCLAY. I know about them, generally. In fact, we did analyze them.

Consideration was given there. There were surveys made. They were reconnaissance studies, very rough reconnaissance. There was no drilling of the damsite and no water supply studies were made as such. No basic information was available at the time that the private engineers made their study and the studies were very preliminary. Actually, when the people went to analyzing it, I believe they found that the cost, on the basis of financing proposed, was beyond their payment capacity and, of course, the estimated cost is considerably less than we have here, because they did not have the basis for an estimate at that time. They did not then have the information on the foundation at the damsite; and did not have the topography at the damsite and did not have the reservoir topography in order to plan and estimate the project.

Senator ALLOTT. Of the total repayment obligation for municipal and industrial water, \$2,194,000 will draw no interest to the year 1975, when the provisions of the Water Supply Act of 1958 are made applicable. That is section 2 (b) of the bill.

Now the interest on the balance would be on the same basis as for regular reclamation projects.

Mr. PALMER. It would be the same basis as accepted by the Congress in section 301 (b) (2) of the Water Supply Act of 1958 and made applicable to the Colorado River storage project in section 9 of the Norman authorization bill.

Senator ALLOTT. That was the amendment to the Colorado River Storage Act.

Mr. PALMER. Yes, sir; that was the amendment. It has the same basis of computing interest on most recently authorized projects and, incidentally, is now prescribed in the President's statement.

Senator ALLOTT. Now, you have here a situation where you have no irrigation.

Mr. PALMER. There is no irrigation.

Senator ALLOTT. Is there a justification, and what is it, for the exemption of municipal and industrial water from the payment of interest?

Mr. PALMER. In considering projects under the Water Supply Act of 1958, the attempt was made to make possible the construction of optimum-sized dams and reservoirs, rather than building them at less than efficient capacity.

To do so would have required the cities to assume a burden beyond their ability to pay if they had to start paying interest in year one before there had been a buildup period in their water market. For this reason, the Water Supply Act permits the construction of reservoirs at optimum capacity or efficient level of storage and defers for a period of 10 years—up to 10 years—the payment of interest on that portion of the capacity of the reservoir not initially required, but such deferrals may not exceed 30 percent of the cost of the dam and reservoir.

May I again state here that the interest is not being proposed for deferment on the conduits; this is only on 30 percent of the cost of the dam and reservoir.

The conduits would be interest-bearing.

Senator ALLOTT. That is the part that the interest is not deferred on.

Mr. PALMER. Yes, sir.

Senator ALLOTT. I had a chart here a while ago. I am looking at page 18 of the report—with respect to the Kerr-McGee refinery. Now, the estimated total requirement under the University of Oklahoma research is 2.26 million gallons per day by 1965, which is 3 years away, and running up to 3.5 million gallons in 2015. This is per day. The peak capacity of the present system is 1.15 million gallons a day. It is my understanding, however, that this is—that their peak capacity of 1.15 is about four times their daily consumption as today; is this correct?

Mr. BARCLAY. I think their consumption at this time is running close to 1 million gallons a day. It has increased since the time that the early study was made by the university.

The refinery has gone in and made a study and modified the works. They are using over a million gallons a day at the present time.

They are looking around. The refinery is having a continuous problem of locating and developing enough water to meet their present requirements.

Senator ALLOTT. According to your report, however, they would abandon all of these facilities and depend upon this completely for water?

Mr. BARCLAY. Yes, sir; they get their water now from wells in the alluvium of the Washita River. The maintenance of these wells is a continuous headache and it is a problem of keeping continuous supplies of water. Also, they have a quality problem. The water developed from the alluvium of the Washita River is very hard and scale producing and they would like to get a better quality water.

Senator ALLOTT. Now, you anticipate in 1965 producing an average through this whole system of how many gallons per day?

Mr. BARCLAY. The system for 1965-66 is the first year; there is a daily use of about 5,360,000 gallons.

Senator ALLOTT. Now, in that same year, what is the usage of Kerr-McGee?

Mr. BARCLAY. Kerr-McGee is scheduled in 1965 for 1,250,000 gallons per day.

Senator ALLOTT. Now, let's take 1975.

Mr. BARCLAY. In 1975, the district as a whole would be using 7,690,000 gallons a day; Kerr-McGee would be using 1,700,000 gallons per day.

Senator ALLOTT. In other words—and I think this needs to be brought out for the sake of clarity in this hearing—you have a project here which includes four towns and some small industries and the Ardmore Industrial Park. But in 1966, one industry would be using—do you have your slipstick with you?

Mr. BARCLAY. I think I have it here someplace.

Senator ALLOTT. What percentage of this water, 5,360 and 1,250?

Mr. BARCLAY. It would be about 24 percent, a little less than 24 percent.

Senator ALLOTT. So including the four towns, all the other industries combined which have been testified to, one industry would be getting 24 percent of the water.

Mr. BARCLAY. That is from the project, Senator. Some of these towns are going to maintain their present water supply and—get part of their water supply from the present sources. Ardmore, for instance, will maintain its Mountain Lake supply and the other lake and will be drawing about 50 percent of its total water supply from its present sources.

Kerr-McGee, of course, will switch over its full supply to the project.

Senator ALLOTT. Even though the towns use their present water supply, the project is only reimbursed by the water the town purchase.

Mr. BARCLAY. That is right.

Senator ALLOTT. Now, using the 1975 figures, you gave me 7,690 and 1,700. What percentages do these figure out?

Mr. BARCLAY. That is about 23 percent.

Senator ALLOTT. What is the situation here with respect to contracts? The water development association will contract with the Bureau; is that it?

Mr. BARCLAY. The master conservancy district will contract with the Bureau. The master conservancy district has already been organized.

Senator ALLOTT. That is a legal entity of the State of Oklahoma?

Mr. BARCLAY. Yes, sir; that is a legal entity of Oklahoma. We have three master conservancy districts in operation at the present time in the State of Oklahoma. They are the Central Oklahoma Master Conservancy District for the Norman project and the Fort Cobb Reservoir Master Conservancy District for the Fort Cobb division of the Washita project, and the Foss Reservoir Master Conservancy District for the Foss division of the Washita project.

We have three operating conservancy districts going now that we have contracts with.

Now, the master conservancy district will have companion or subsidiary contracts between itself and various water-using entities, like the city of Ardmore, the city of Wynnewood, and so on.

All of these contracts go together and make a package to serve the obligation to the United States.

Senator ALLOTT. Now, I am interested in the price structure as between municipal and industrial uses.

Is it the same price structure for both?

Mr. BARCLAY. Mr. Brigrance gave some information on that. Generally, in this area where you get a large water-using consumer like a big industry, they get a graduated scale and the industry price is less than the price of water to the general domestic consumer. That is general practice throughout the country. I think it is largely the responsibility of the districts and the individual cities, but I think in the final analysis you will find the industrial users getting a cheaper rate, but not less than the actual cost.

Senator ALLOTT. Let's put it on another basis. Do the cities and the municipalities have available to them, or would they have available to them, or will they have available to them the same sliding scale as is available to industrial users?

Naturally, the city has to operate a distribution system within its own city limits. It perhaps has to maintain a purification plant or something of that sort, and the cost to the individual user within the city, of course, is going to be more. But since the amounts to be delivered to cities in some instances, at least, would be comparable with amounts delivered to industrial users, will the cities have the same basic sliding scale price available to them as is made available to industrial users?

Mr. BARCLAY. Well, the sliding scale that is available to the industry users is a responsibility of the citizens of the individual cities who supply the industry or the district that supplies the industry. Each town or each city will have a fixed obligation to meet each year and they have to pay that total amount of so many thousand dollars a year regardless of whether they use no water or use a large amount of water. It depends on the amount of water they use as to how much the water is going to cost them.

But it is not on a sale-of-water basis here, or so much per gallon. We have made estimates of the projected use of water and then geared the annual payments to that amount. Now, if they use less water, than that, their cost of water delivered to the city limits would be higher, and if they use more, the cost would be less.

Mr. PALMER. Basically, I think, Senator Allott, the control of the water structure would be in the control of the State of Oklahoma, the master conservancy district, and the cities involved. We would not attempt to set down the rules of the master conservancy district so long as we are assured, under the act, that the Federal investment is sound.

There is one other point I would like to make. This is the nearby Platt National Park which, although it is a very small park, competes in terms of numbers of visitors with some of the bigger ones. They get over a million visitors a year in Platt National Park.

Now, Sulphur at one time was quite a famous resort center. We think that the shortage of water has retarded the economic development of that entire area, and we believe that the Arbutle project, with this water supply available to the cities, will not only provide for the industrial growth and development of this important section of Oklahoma, but it will also add delight and comfort to many, many people who will come from far around to visit the Platt National Park and the recreational facilities.

Senator ALLOTT. All right. Now, if anybody in the room knows the answer to this question, I would like to have an answer to it.

I still want to know if the rate that is going to be supplied to industrial users is going to supply water at a lesser rate than it is going to be supplied to municipalities.

Mr. ANDREW RIDDLE. I think I can answer that question.

It makes no difference whether it is an industry or whether it is a residence as far as our city goes, and I feel sure the other cities are the same way.

If I as a resident property owner use a certain number of gallons, I am going to get exactly the same rate as an industry would.

Senator ALLOTT. In other words, even though it is on a sliding scale, you will both be in the same boat?

Mr. ANDREW RIDDLE. That is correct.

Senator ALLOTT. Would the same thing apply with the one large industrial user in this area, which does not take its water through Wynnewood, does it?

Mr. ANDREW RIDDLE. It is anticipated that under the Master Conservancy District—I cannot speak for Wynnewood certainly, but it is anticipated that Kerr-McGee would contract with Wynnewood. That would be a contractual obligation between those two.

Senator ALLOTT. Can the people from Wynnewood who are here tell me if the contract is with them or if it is an independent contract with the conservancy district?

Mr. LINDSEY. We still have to work that out. There has been talk both ways, for Kerr-McGee to contract with Wynnewood or to contract through the master conservancy district, either way.

Senator ALLOTT. So this is not a determined fact at this time?

Mr. LINDSEY. No, sir.

Senator ALLOTT. Is there anybody here from the conservancy district?

Mr. ANDREW RIDDLE. I represent it.

Senator ALLOTT. Is it contemplated, or do you plan, and this is an important question for the record, that if the one large industrial deals with a conservancy district separately and not as a subpur-

chaser from Wynnewood, that they will receive a more favorable rate than Wynnewood or Sulphur or Ardmore?

Mr. ANDREW RIDDLE. I think the answer to that would be no, that they would not receive a more favorable rate.

Senator ALLOTT. It would be all on the same basis?

Mr. ANDREW RIDDLE. On a sliding scale basis, depending on the amount of water used.

Senator ALLOTT. But the sliding scale would apply to all of the users? I am not talking about the individual users within a municipality which, of course, always are going to have to pay a little more for their water. But as far as the large users, the municipalities, the one large industrial user would pay the same rates on the same scale as the municipalities would pay?

Mr. ANDREW RIDDLE. The answer to that would be yes.

Senator ALLOTT. All right. Thank you very much.

I think that is all I have, Mr. Chairman.

Senator JACKSON. Senator Burdick?

Senator BURDICK. I have just one question for Mr. Palmer.

You say that the reimbursable features of the project are guaranteed by the conservancy district?

Mr. PALMER. Yes, sir. On the basis of revenue, it would derive from its subscription contracts with the cities, and on the basis of its own ability to levy ad valorem taxes to make up any deficit.

Senator BURDICK. How much can they levy?

Mr. PALMER. I believe I was told there is no limit on it, but the attorney for the district is here.

Mr. ANDREW RIDDLE. That is correct, sir.

Mr. PALMER. There is no limit. In other words, the guarantee is absolute under the terms of the act.

Senator BURDICK. The conservancy districts embrace this entire area?

Mr. BARCLAY. Yes. It involves the city limits of the individual cities.

It involves the city limits of Ardmore, the city limits of Sulphur and so forth, but it does not embrace the intervening area. Actually, it is the centralizing corporation, the conservancy district, that has lines of authority between itself and each individual town, but it does not embrace the rural area in between.

Mr. PALMER. You would not tax the farming land for municipal-industrial water supply, in other words.

Senator BURDICK. One other question. Is it customary to include conduits like this in the project?

Mr. PALMER. In the three projects we have talked about this morning recently authorized in Oklahoma, conduits were included. The biggest single municipal-industrial project authorized by the Congress for construction by the Bureau, the Canadian River in Texas also provides a conduit.

Senator BURDICK. That is all.

Senator HICKEY. Mr. Palmer, I notice here that you state 340 acres of land acquisition for the recreational facilities. Now, I am not clear from reading your report whether the acquisition costs of the land are included in your breakdown here on a subsequent page of \$450,000.

Mr. PALMER. Yes, sir; it is.

The \$450,000 is the recreation allocation.

Senator HICKEY. And that includes the additional land?

Mr. PALMER. The additional land you mentioned is fish and wildlife land and it is included in that fish and wildlife allocation.

Senator HICKEY. What is the total fish and wildlife acquisition in acres, in addition to the total acres for the project?

Mr. PALMER. As I recall, we would buy as part of the project acquisition program for other project purposes some 700 or 800 acres and then there would be this additional purchase of land for the specific wildlife habitat development.

Senator HICKEY. Is the total land acquisition, you would think, then something over 7,000 acres to the project?

Mr. PALMER. For fish and wildlife use. But the total project is much more than that.

Mr. BARCLAY. For the dam and reservoir, for primary purposes, we have 4,520 acres to be purchased in fee, and 1,700 acres to be easements.

Senator HICKEY. Is that flowage easement?

Mr. BARCLAY. Yes, sir; and that is \$1,079,000.

Senator HICKEY. The cost of acquisition for those lands. Is the 340 included in the figures?

Mr. BARCLAY. No, sir, the 340 acres are included in the \$450,000 for recreation and then there are 660 acres included in the \$68,000 as specific cost for fish and wildlife.

Senator HICKEY. 600-how-many acres?

Mr. BARCLAY. 660.

Senator HICKEY. And the total cost of acquisition, you said, the 4,520 and 1,720, is in excess of \$1 million?

Mr. BARCLAY. \$1,079,200.

Senator HICKEY. And the cost of acquisition of the 340—

Mr. BARCLAY. We do not have that broken down, sir, but I imagine it would be in the neighborhood of \$35,000.

Senator HICKEY. And the 660?

Mr. BARCLAY. That 660 is \$68,000.

Senator HICKEY. Do you notice any dissimilarity in the costs for the various purposes?

Mr. BARCLAY. Yes, sir; there is some in some of these lands. In the primary purpose of the reservoir, some of those are bottom lands that have values up to \$150 or more an acre, while the upland areas that are involved for the fish and wildlife or recreational areas have a nominal value of maybe \$50 or \$60 an acre, actually maybe an acquisition cost of around \$100 an acre.

Senator HICKEY. Have you started any of your acquisition yet?

Mr. BARCLAY. No, sir.

Senator HICKEY. That is all.

Senator JACKSON (presiding). Any questions?

Senator ALLOTT. If you include flood control, there is 20 $\frac{5}{10}$ percent of this project that is nonreimbursable?

Mr. BARCLAY. I have not made the estimate, but it is approximately that, sir.

Senator JACKSON. Thank you, gentlemen.

I appreciate having your statement.

Thank you, Senator Monroney.

Senator MONRONEY. I thank you for your courtesy in listening to our witnesses.

(Whereupon, at 11:30 a.m., the committee adjourned, subject to the call of the Chair.)

