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# SOUTHERN NEVADA WATER PROJECT

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

## INTERIOR AND INSULAR AFFAIRS UNITED STATES SENATE

EIGHTY-NINTH CONGRESS

FIRST SESSION

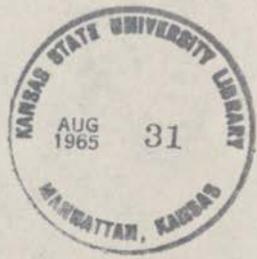
ON

### S. 32

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR  
TO CONSTRUCT, OPERATE, AND MAINTAIN THE SOUTHERN  
NEVADA WATER PROJECT, NEVADA, AND FOR OTHER  
PURPOSES

MAY 20, 1965

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



U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1965

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SOUTHERN NEVADA WATER PROJECT

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## COZTES

## COZTES

## SOUTHERN NEVADA WATER PROJECT

THURSDAY, MAY 20, 1965

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

The subcommittee met, pursuant to notice, at 10:05 a.m., in room 3110, New Senate Office Building, Senator Henry M. Jackson (chairman of the full committee) presiding.

Present: Senators Jackson, Bible, Burdick, Kuchel, and Allott.

Also present: Jerry T. Verkler, staff director; Stewart French, chief counsel; Richard N. Little, minority counsel; and Roy Whitacre, professional staff member.

Senator JACKSON. The subcommittee will come to order. The hearing this morning was scheduled at the request of our colleague, Senator Bible, to take testimony on S. 32, sponsored by Senator Bible and Senator Howard W. Cannon, to authorize the construction of the southern Nevada water project.

(The bill referred to follows:)

[S. 32, 89th Cong., 1st sess.]

A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the southern Nevada water project, Nevada, 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 southern Nevada water project, Nevada, in accordance with the Federal reclamation laws (Act of June 17, 1902; 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), except as those laws are inconsistent with this Act, for the principal purpose of delivering water for municipal, industrial, and incidental irrigation use. The principal features of the southern Nevada water project shall consist of intake facilities, pumping plants, aqueduct and laterals, transmission lines, substations, and storage and regulatory facilities required to provide water from Lake Mead on the Colorado River for distribution to municipalities and industrial centers within Clark County, Nevada.

SEC. 2. (a) The Secretary shall make appropriate allocations of project costs to municipal and industrial water supply and, if appropriate, to conservation: *Provided*, That all operation and maintenance costs for the southern Nevada water project shall be allocated to municipal and industrial water supply. Construction costs of said dam and reservoir allocated to conservation shall be nonreimbursable.

(b) Allocations of project costs made to municipal and industrial water supply shall be repayable to the United States under either the provisions of the Federal reclamation laws or under the provisions of Water Supply Act of 1958 (title III of Public Law 85-500, 72 Stat. 319 and Acts amendatory thereof or supplementary thereto): *Provided*, That, in either case, repayment of costs allocated to municipal and industrial water supply shall include interest on the unamortized balance of such allocations at a rate equal to the average rate (which rate shall be certified by the Secretary of the Treasury) paid by the United States on its marketable long-term securities outstanding on the date of this Act and adjusted to the nearest one-eighth of 1 per centum.

(c) If conditions permit irrigation use of project water, the Secretary is authorized to allocate to irrigation, under the provisions of the Federal reclamation laws, an appropriate portion of the project construction costs allocated to municipal and industrial water supply.

SEC. 3. (a) The Secretary is authorized to enter into the necessary contract, or contracts, with the Colorado River Commission of Nevada, acting for the State of Nevada, for the delivery of water and for repayment of the reimbursable construction costs, notwithstanding provisions of section 5 of the Boulder Canyon Act (45 Stat. 1057).

(b) Construction of the project shall not be commenced until a suitable contract has been executed by the Secretary and the Colorado River Commission.

(c) Such contract may be entered into without regard to the last sentence of section 9, subsection (c), of the Reclamation Project Act of 1939, and may recognize the relative priorities of municipal, industrial, and irrigation uses.

(d) Upon execution of the contract referred to in section 3(a) above, and upon completion of construction of the project, the Secretary shall transfer to said Colorado River Commission of Nevada the care, operation, and maintenance of the intake, pumping plants, aqueducts, reservoirs, and related features of the southern Nevada water project upon the terms and conditions set out in the said contract.

(e) When all of the costs allocable to reimbursable purposes incurred by the United States on constructing, operating, and maintaining the project, together with appropriate interest charges, have been returned to the United States by the Colorado River Commission of Nevada, said commission shall have the permanent right to use the intake, pumping plants, aqueducts, reservoirs, and related features of the southern Nevada water supply project in accordance with said contract.

SEC. 4. Such amount of the costs of construction as are allocated to the furnishing of a water supply to Nellis Air Force Base or other defense installations shall be nonreimbursable.

SEC. 5. Expenditures for the southern Nevada water project may be made without regard to the soil survey and land classification requirements of the Interior Department Appropriation Act of 1954 (43 U.S.C. 390a).

SEC. 6. The use of all water diverted for this project from the Colorado River system shall be subject to and controlled by the Colorado River compact, the Boulder Canyon Project Act (45 Stat. 1057; U.S.C. 617t), and the Mexican Water Treaty (Treaty Series 994) (59 Stat. 1219).

SEC. 7. 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.

Senator JACKSON. The bill provides for the construction of the distribution facilities needed to enable the State of Nevada to use the 300,000 acre-feet of water allocated to that State from the Colorado River by the Supreme Court.

The favorable reports of the Department of the Interior and the Bureau of the Budget will be included in the record at this point.

(The reports referred to follow:)

U.S. DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE SECRETARY,  
Washington, D.C., May 14, 1965.

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

DEAR SENATOR JACKSON: This responds to your request that the Department of the Interior report its views upon S. 32, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the southern Nevada water project, Nevada, and for other purposes.

We would have no objection to enactment of the substitute bill accompanying this letter.

S. 32 would authorize the southern Nevada water supply project, essentially a single-purpose municipal and industrial water supply project by which waters stored in Lake Mead would be delivered for use at various locations in Clark County, Nev. Our report on this project was transmitted to your committee

in April 1964 as a part of our Pacific Southwest water plan proposal. The water supply of the southern Nevada project ultimately rests upon the availability of sufficient water in the mainstream of the Colorado River below Lees Ferry to satisfy consumptive uses decreed in *Arizona v. California et al.* (346 U.S. 573). For that reason we have consistently conceived of the project as an element in a larger proposal for comprehensive, coordinated development of the water resources of the Pacific Southwest. However, since the project would not require financial assistance from the proposed Lower Colorado River Basin fund it is not mandatory that it be authorized as a part of a complex of projects contributing to and deriving financial assistance from a lower basin fund. We, therefore, would not object to enactment of legislation authorizing this project alone.

In order that S. 32 may be fully compatible with the pending bill (S. 1019) to authorize the Lower Colorado River Basin project—including a southern Nevada unit—we have prepared substitute text for the bill. This substitute is an amalgam of provisions of S. 32 and S. 1019, except for the interest rate proposed to be applied to the repayment of the costs allocated to municipal and industrial water supply. Section 2(b) of S. 32 provides that interest shall be at a rate equal to the average rate paid by the United States on its marketable long-term securities outstanding on the date of enactment of the bill, adjusted to the nearest one-eighth of 1 percent. This would be 3¼ percent if the bill were enacted in fiscal year 1965. Our substitute bill would establish the rate of interest at 4 percent. This change is to make the interest rate charged on the unamortized balance of the investment in municipal and industrial water supply facilities of the southern Nevada project comparable to the interest rate charged under current policy for loans for municipal water distribution facilities under the community facilities program of the Housing and Home Finance Agency. As mentioned earlier, the southern Nevada project will divert water from Lake Mead. Under the Boulder Canyon Project Act only a nominal charge is imposed for storage in Lake Mead for municipal water. Therefore, it is thought appropriate that interest for the southern Nevada project be determined on the basis of the standards applicable to municipal water distribution facilities constructed under the HHFA program (even though this project would not be eligible for construction under that program) rather than under the formula of S. 32, based upon the Water Supply Act of 1958.

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

Sincerely yours,

STEWART UDALL,  
Secretary of the Interior.

Enclosure.

A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the southern Nevada water supply project, Nevada, 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 southern Nevada water supply project, Nevada, 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 purpose of delivering water from Lake Mead for municipal and industrial and incidental uses in southern Nevada. The southern Nevada water supply project shall consist of the following principal works: intake facilities, pumping plants, aqueduct and laterals, transmission lines, substations, storage and regulatory facilities, drainage facilities, and appurtenant works.

SEC. 2. (a) Construction of the project shall not commence until a repayment contract has been entered into and its execution by the contractor shall have been finally affirmed by a decree of a court of competent jurisdiction. The Secretary may enter into a contract with the State of Nevada, acting through the Colorado River Commission of Nevada or other authorized State agency, providing among other things, that—

- (i) the contractor shall operate and maintain the project works;
- (ii) the construction costs allocable to municipal and industrial water supply shall be repaid by the contractor, with interest at the rate of 4 per centum per annum, in not more than fifty years (except such construction costs as are allocable to the furnishing of a water supply to Nellis Air Force Base and other Federal defense installations, which costs shall be nonreimbursable); and

## SOUTHERN NEVADA WATER PROJECT

(iii) the contractor shall take delivery of water from Lake Mead at the intake works and shall sell and deliver such water at wholesale under contracts to be approved by the Secretary, which shall include an obligation on the part of each purchaser to exercise such powers as it may possess to levy and collect taxes or assessments for purposes of meeting the charges for service thereunder.

(b) Such contract may be entered into without regard to the last sentence of section 9, subsection (c), of the Reclamation Project Act of 1939.

(c) When all reimbursable costs, together with appropriate interest charges, have been returned to the United States by the contractor, the contractor shall have the permanent right to use the intake, pumping plants, aqueducts, reservoirs, and related features of the southern Nevada water supply project in accordance with said contract.

SEC. 3. Expenditures for the southern Nevada water supply project may be made without regard to the soil survey and land classification requirements of the Interior Department Appropriation Act of 1954.

SEC. 4. The use of all water diverted for this project from the Colorado River system shall be subject to and controlled by the Colorado River compact, the Boulder Canyon Project Act (45 Stat. 1057; U.S.C. 617t), and the Mexican Water Treaty (Treaty Series 994) (59 Stat. 1219).

SEC. 5. There are hereby authorized to be appropriated such sums as may be required to carry out the purposes of this Act.

*Estimated additional man-years of civilian employment and expenditures for the first 5 years of proposed new or expanded programs, as required by Public Law 801, 84th Congress*

	1st year	2d year	3d year	4th year	5th year
Estimated additional man-years of civilian employment:					
Administrative services:					
Fiscal.....	1	2	4	4	1
Clerical.....	4	5	9	12	3
Total administrative services.....	5	7	13	16	4
Substantive (program):					
Engineers.....	18	24	20	23	5
Engineering aids and others.....	21	22	51	54	12
Total, substantive.....	39	46	71	77	17
Total estimated additional man-years of civilian employment.....	44	53	84	93	21
Estimated additional expenditures:					
Personal services.....	\$305,000	\$380,000	\$560,000	\$610,000	\$135,000
All other.....	395,000	2,620,000	19,440,000	22,390,000	1,900,500
Total estimated additional expenditures.....	700,000	3,000,000	20,000,000	23,000,000	2,035,500

EXECUTIVE OFFICE OF THE PRESIDENT,  
BUREAU OF THE BUDGET,  
Washington, D.C., May 14, 1965.

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

DEAR MR. CHAIRMAN: This is in reply to your letter of March 1, 1965, requesting the views of the Bureau of the Budget on S. 32, a bill "To authorize the Secretary of the Interior to construct, operate, and maintain the southern Nevada water project, Nevada, and for other purposes."

The purpose of the bill, as indicated in its title, is to authorize the southern Nevada water supply project. This project is essentially a single-purpose municipal and industrial water supply development to furnish water from Lake Mead to the cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Nellis Air Force Base. The project would cost about \$81 million, of which \$49 million would be the cost of an initial first stage.

The Department of the Interior, in a report it is submitting to your committee, recommends a substitute text for the bill that would require that a 4-percent rate of interest be used in the repayment of the costs allocated to municipal and industrial water supply. The Bureau of the Budget, for reasons expressed in our letter to the Secretary of the Interior on this project, a copy of which is enclosed, considers it essential that a 4-percent interest rate be established for repayment of the reimbursable costs of the project. We therefore concur in the recommendation of the Department of the Interior.

Accordingly, the Bureau of the Budget would have no objection to enactment of S. 32, but only if amended to provide for interest rates as recommended by the Secretary of the Interior.

Sincerely yours,

PHILLIP S. HUGHES,  
*Assistant Director for Legislative Reference.*

Enclosure.

EXECUTIVE OFFICE OF THE PRESIDENT,  
BUREAU OF THE BUDGET,  
*Washington, D.C., May 13, 1965.*

HON. STEWART L. UDALL,  
*Secretary of the Interior,*  
*Washington, D.C.*

DEAR MR. SECRETARY: This is in reply to your letter of May 11, 1965, transmitting your proposed report on the southern Nevada water supply project, Nevada, and requesting advice as to the relationship of the proposed project to the program of the President.

The southern Nevada water supply project would provide municipal and industrial water to the cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Nellis Air Force Base. The project is essentially a single-purpose municipal and industrial water supply development to convey waters stored in Lake Mead for use by these communities in Clark County, Nev., through a system of pipelines and related facilities. The total project would cost approximately \$81 million, of which \$49 million would be the cost of the first stage to be developed initially. The benefit-cost ratios for the total project and the first stage are estimated at 1.6 and 1.5 to 1, respectively, over 100 years.

Federal assistance in the financing and construction of single-purpose municipal and industrial water supplies for local communities falling under the statutory population limitations is ordinarily provided through the program of the Community Facilities Administration. We believe, however, that the southern Nevada water supply project is a special case where construction should be undertaken by the Bureau of Reclamation as proposed in your report in view of the unique role of the Department of the Interior in the Colorado River Basin and the \$283,000 already invested by the Bureau of Reclamation in planning the project.

However, if the project is undertaken as a Federal reclamation project, we believe it is essential that the interest rate used in repayment of the Federal investment be the same as that which would apply if the Federal investment were financed by the Community Facilities Administration. The current rate for community facilities loans is 4 percent—somewhat higher than that which would apply if repayment were made under the Water Supply Act of 1958. For reasons noted below, the 4-percent rate is fully justified.

If the southern Nevada water supply project were constructed today—or had been originally included in a multiple-purpose project—the project beneficiaries would be required to pay interest on deferred storage and, in addition, to repay a share of the joint cost of the reservoir. This has been the basis for repayment in other cases where the Federal Government has provided municipal and industrial supply pipelines, such as the Norman project in Oklahoma and the Canadian River project in Texas.

We also note local communities elsewhere in the Nation have generally financed municipal and industrial water supply developments of the kind proposed in the southern Nevada water supply project by the sale of bonds on the private market. It is our understanding that the interest rate that would be charged a public body in Nevada for loans to finance municipal and industrial water supply facilities would probably be 4 percent or possibly higher if the project were financed privately. It is most uncertain, in fact, that the private market would finance a 50-year loan for this project. We believe, therefore, that repayment of the water supply costs at a 4-percent rate represents an equitable arrangement

from the point of view of local interests, as well as the Federal Government, one that is in keeping with the view of the State of Nevada that it is desirous of repaying all costs of the southern Nevada water supply project with interest.

Accordingly, you are advised that there would be no objection to the submission of the report to the Congress. However, no commitment can be made at this time as to when any estimate of appropriation would be submitted for construction of the project, if authorized by the Congress, since this would be covered by the President's budgetary objectives as determined by the then prevailing fiscal situation.

Sincerely,

ELMER B. STAATS, *Deputy Director.*

Senator JACKSON. I understand that the Governor of Nevada does have to catch a plane and while normally we call on the senior Senator and then the junior Senator, I think, in the interest of trying to accommodate the Governor, I will ask Gov. Grant Sawyer to make his statement at this time and then I will ask Senator Bible and Senator Cannon to make theirs.

Governor, we are delighted to have you and it is a privilege to welcome you back to Washington, D.C., again.

#### STATEMENT OF HON. GRANT SAWYER, GOVERNOR OF THE STATE OF NEVADA

Governor SAWYER. Thank you very much, Mr. Chairman. It is nice to be here on this matter.

I am Grant Sawyer, Governor of Nevada, the driest State of our entire 50-State Nation. I appear here today to plead for the life of the driest section of that dry State.

We are very proud of our State, its history, its growth, and its potential. Las Vegas Valley, including the city of North Las Vegas, the city of Las Vegas, and the city of Henderson, along with Boulder City, has become an economically stable metropolitan area, led by men of vision and integrity.

Las Vegas, which is sometimes thought of as a bright vacation center, has, in recent years, risen to great prominence as one of the major convention cities of the world. Its proximity to Lake Mead enhances this attractiveness to a great degree. Last year, the Lake Mead Recreational Area had a visitation of almost 3½ million people.

Just 15 years ago, the entire Clark County, which encompasses all of the southern tip of Nevada, had a population of only 48,300 people. Today, the population in Las Vegas Valley and Boulder City alone is about 250,000 people, and it continues to be one of the fastest growing areas in America.

Our economic stability is rapidly being placed in grave danger due to the presently inadequate water supply. We have been very fortunate in having a valuable underground resource available to Las Vegas Valley to supply the water requirements up to the present time. However, we are mining that resource to an alarming extent each year.

As will be brought out during the hearing today, our experts estimate our recharge to Las Vegas Valley's underground basin is only 25,000-30,000 acre-feet. In the year 1964 alone, we pumped 78,000 acre-feet from this underground basin, about three times the safe yield of that basin.

This mining of water is increasing every day. Our experts estimate that the water requirements in Las Vegas Valley in the year 1970 will be in the neighborhood of 160,000 acre-feet.

With the present Basic Management, Inc., system importing about 25,000 acre-feet into the area and prudent use of about 45,000 acre-feet from the underground basin, we can readily see that by the year 1970 we may need as much as 90,000 acre-feet of import water.

I want to impress on you that a supply of imported water from Lake Mead is imperative by the year 1968 if we are not to suffer grave danger to our underground basin and/or to our economy.

Senators Bible, Cannon, Congressman Baring and I have been working on this project since 1959.

We have been allocated 300,000 acre-feet of Colorado River water. At the present time we are using only about 25,000 acre-feet of that allocation, principally because of the inadequacy of water transportation facilities. We must have a project to put that water to beneficial use in order to sustain our present economy and to provide for an expanding economy. Operation by 1968, of course, requires enabling legislation at the earliest possible moment.

I am certain the southern Nevada water supply project is the answer to our present and near future water-supply problems. The U.S. Bureau of Reclamation has done an excellent job in developing this plan with the cooperation of the local people.

I am also happy to report that the cities and districts to be served from this project are willing and able to pay their fair share of the projects cost, at the appropriate interest rate, within a 50-year period.

The 1965 State legislature enacted into law the necessary revisions in the Colorado River Commission's enabling legislation to remove any doubt about that agency's ability to contract with the United States for repayment of the cost of the project. This legislation also provided authority for the Commission to accept the operation and maintenance of the project.

You will receive statements, telegrams, and letters from each of those entities during the course of this hearing. The project has the wholehearted support of Clark County and its political entities.

In 1936, Nevada began participating in the benefits of the Colorado River through contracts for delivery of power from Hoover Dam. Since that time, Nevada has paid to the United States over \$26 million in power payments. This money, in part, has been placed in the Colorado River development fund for developments such as the one being recommended to you here today.

Nevada deserves favorable consideration of its project, especially when you consider that it is the first water project for the use of Colorado River water which Nevada has ever requested.

You will hear the testimony today on S. 32 to authorize our southern Nevada water supply project separately. I want the record to be clear that we also support the legislation now before Congress to authorize the Lower Colorado River Basin project. We, certainly of all people, realize fully that the water available to us from the Colorado River is not sufficient to meet our future water requirements. Imported water must be made available to us in the future and the State of Nevada is ready to work with the other States of the West and with the appro-

priate Federal agencies to bring about a large-scale project which will satisfy the future water requirements of the entire Southwest.

Mr. Chairman, I appreciate the opportunity to appear before you today in support of this very vitally needed project. Early, favorable consideration is essential in order that the project may get under construction within the next year. If it does not, we are in grave and serious difficulty.

Mr. Chairman, I particularly appreciate that you let me appear as the first witness, and out of order. When we originally discussed this matter many years ago we felt that last year might be the last year that Congress could take action in order to meet our needs. So, even if action is taken this year, in this Congress, we still may be in some trouble.

Thank you very much.

Senator JACKSON. I just want to say, Governor, Senator Bible, of course, is the senior Senator from your State and also a member of this committee and he has been most diligent in pushing this project as has his colleague and associate, Senator Cannon. The result is that the Bureau of the Budget and the various departments have their favorable reports in and that is why we are able to move as expeditiously as we are on this project.

I take it that the water to be channeled in connection with this project will be for municipal or industrial purposes. There is no agricultural project, as such, contemplated, at least at this time?

Governor SAWYER. No, this is purely to meet the needs of the population growth and for domestic and industrial purposes.

Senator JACKSON. I am not going to get into a discussion with you now on imported water. That is not involved in this project.

Governor SAWYER. Senator, I might say my own theory on additional water in the future has always been desalinization.

Senator JACKSON. You are making a very favorable impression, I assure you.

Governor, I want to compliment you on a very fine statement.

Senator Allott?

Senator ALLOTT. I just have two short questions, Governor. You have a very fine statement here.

Senator JACKSON. Incidentally, I am going to interrupt as I do have a commitment out of town today and I had to change my schedule and I am going to ask my senior colleague on the committee, Senator Bible, to take over and chair the committee. While not a member of this subcommittee, for this project at least he will be the chairman.

Senator ALLOTT. You gave a very fine statement, Governor, and those of us in the West, I think, can appreciate your remarks about the area being dry.

In the supplement to the "Report on the Nevada Water Supply project," page 1, it shows that water would be provided to the potential El Dorado Valley development.

Is that a municipal or agricultural development?

Governor SAWYER. It will not be agricultural, Senator. It will be possibly a combination of recreation, industry, and housing. There will be no agriculture involved.

Senator ALLOTT. I did not know what form of development it was. Then one other thing. On page 2 of your statement you say that

Nevada has paid to the United States over \$26 million in prior payments. This relates not to the State of Nevada, but to individuals and firms and corporations in the State of Nevada.

Governor SAWYER. That is correct.

Senator ALLOTT. That is all I have.

Senator BIBLE (presiding). The Senator from North Dakota.

Senator BURDICK. I, too, would like to commend the Governor for an excellent statement. The only question I have in mind is what has been your experience with the pumping of underground water?

First, how long have you been doing it and what has been your experience in showing the time of depletion?

Governor SAWYER. Senator Burdick, we have had to use our ground water supply because there has been no other water available. However, we are very much concerned about continued use because we are depleting the ground water resources. We are using substantially more, as I pointed out in my statement, than the annual replenishment amounts to. We have not only an economic problem but a legal problem because our State law provides that we may not use more underground water than the annual replenishment and I think that has been stretched a little.

At any rate, we are very much concerned about that and simply cannot continue to use it at the rate we are using it now.

Senator BURDICK. In other words, at the present time you are taxing your underground reserves to the limit?

Governor SAWYER. Yes.

Senator BURDICK. And in some cases, you may have gone beyond them?

Governor SAWYER. We have gone beyond the limit, I am sure.

Senator BURDICK. That is all.

Senator BIBLE. Thank you very much, Senator Burdick.

I want to join my colleagues on this committee in commending you for a very able and fine presentation. I think urgency is the underscored word of the day and I also realize, Governor, that you have an urgent appointment and a plane to catch so let me say that we are delighted to have you with us and I certainly understand you must leave.

Governor SAWYER. Thank you very much, Senator Bible, Senator Allott, and Senator Burdick.

Senator BIBLE. I have a statement that I will ask be incorporated in full in the record, as given. This statement simply points out the fabulous and fantastic growth, most particularly in Clark County, and it is amazing when the project was before this committee just a year ago that the statistics used then as to population figures are out of date even now and the growth, of course, has brought with it as growth always does, many, many problems and certainly those of us from the West, and this is almost entirely a western committee, recognize that water is the lifeblood of the desert. This is a project that will pay each phase out in full in 50 years. It is a three-phased project; the first phase is roughly \$49 million and will consume approximately 132,000 acre-feet of the allotment as nailed down by the Supreme Court case, *Arizona v. State of California*.

(The statement referred to follows:)

**STATEMENT OF HON. ALAN BIBLE, A U.S. SENATOR FROM THE  
STATE OF NEVADA**

Senator BIBLE. Water is a magic word in our Nation's Southwest. This committee, perhaps more than any other, appreciates the significance of that statement. Water means growth, prosperity, and progress. Without it, there is inertness, poverty, and decay. These are absolutes that are most dramatically thrust upon us whenever water grows short. They apply to my State of Nevada, and they apply most compellingly right now to this State's most populous and robust area—southern Nevada.

This is why I always use the word vital when I speak of the southern Nevada water supply project authorized under Senate bill 32. This is why there is such a solid unanimity of support for this legislation and this project in Nevada. The need for this project and the water it will provide is enormous. The benefits are limitless.

When we speak of southern Nevada in connection with this project, we speak most particularly of the Clark County municipal and industrial complex—the sister cities of Las Vegas, North Las Vegas, Henderson, and Boulder City, together with Nellis Air Force Base and the El Dorado Valley as a whole. This is the fastest growing region in one of the fastest growing States. There is no doubt that it is rapidly outstripping its underground water resources—outstripping them to a point that is becoming critical.

It is indeed fortunate that the immediate solution lies nearby in the Colorado River and the vast storage of Lake Mead. Nevada has tapped this source for but a fraction of its 300,000 acre-foot water entitlement. This project is merely the vehicle with which Nevada will be able to realize the full benefits of that entitlement.

It is equally fortunate that this project requires no major dam construction or any development that will affect basinwide interests.

I called southern Nevada the most populous and robust area of Nevada. To underscore this statement, I should cite a few basic facts and figures.

Within Clark County alone lives more than half the entire State's population. Latest estimates set the population total in Clark County at a minimum of 243,000. There is sound evidence to point to a figure of more than 272,000 as more realistic. This is the area that boasted little more than 16,000 population 25 years ago and less than 50,000 just 15 years ago.

This is phenomenal growth. But authoritative officials confidently predict an even greater leap in population—to nearly one-half million by 1970 and close to a full million by the year 2000. To those who might be prone to call this optimistic, I would point out the experts predicted a population of 230,000 in Clark County by 1970—and that figure has already been exceeded. This is an area of fantastic population growth, and this only emphasizes the need for more water.

It takes a robust economy to attract and support this kind of growth. This is exactly the type of economy we have in southern Nevada. All spectrums of the economy—business, employment, industry, finance, construction, tourism—continue to register significant gains. This includes water consumption, which was up 38 percent in the first 3 months of this year.

I should point out also that heavy Federal investments are involved in this area's economy. There is the Lake Mead National Recreation Area—one of the Nation's most popular outdoor recreation facilities—Nellis Air Force Base and the Atomic Energy Commission's Nevada test site which recently takes in the nuclear rocket development station. These, too, have a vital interest in the availability of water and continued economic growth.

It becomes increasingly clear that the region's continued growth, even by moderate estimates, is dramatically dependent on adequate water.

It is important to remember this significant project expenditure, estimated at \$49 million for the first stage, is completely reimbursable. The undertaking, comprised chiefly of pumping and pipeline facilities, will be repaid over 50 years with interest. And the people of Nevada stand ready to back this repayment. The Nevada Legislature in 1963 designated the Colorado River Commission of Nevada as the State agency to contract with the United States for this repayment and to operate and maintain the project when it is complete.

Action on this legislation has been delayed in the past because of basinwide controversy and priorities. I have maintained, however, that this project need not await other developments nor become involved in them. I was extremely gratified to see this thinking reflected in the recent Interior Department report supporting the project authorization. The Department and the Bureau of the Budget have favored the project as an individual undertaking that can travel alone and unfettered.

I was also gratified to see that potential benefits of this project reflected in the Interior Department's feasibility report. The first stage is given a benefit-cost ratio of 1.5 to 1, and the ultimate phase is slightly better—1.6 to 1.

I have discussed, in brief, the need and the benefit, the feasibility and the financing for this project. I need only add that the need is now. For southern Nevada's growth will surely stagnate if this fresh water supply is not available as soon as possible. We face a timetable that requires immediate authorization.

The southern Nevada water supply project is not the final answer to the region's needs. We must continue to look ahead for new sources and procedures to make still more water available. This is true throughout the Colorado River Basin. In looking, we must be limited only by our imagination and initiative. In southern Nevada, meanwhile, the immediate solution is the project now before the committee.

I strongly urge your favorable consideration of this legislation and your continued support to make it a reality.

I am delighted to recognize my colleague from Nevada, Senator Cannon.

#### STATEMENT OF HON. HOWARD W. CANNON, A U.S. SENATOR FROM THE STATE OF NEVADA

Senator CANNON. Thank you, Mr. Chairman and members of the subcommittee. I want to express my appreciation for the opportunity to testify in behalf of legislation to authorize the Secretary of the Interior to construct, operate, and maintain the southern Nevada water project as embodied in S. 32.

The senior Senator from Nevada and acting chairman of this subcommittee, Mr. Bible, and I introduced this legislation on January 6, 1965, because of the vital and urgent need for municipal and industrial water in Clark County, Nev.

Last year, this bill received favorable action by the Interior Committee, but, unfortunately, there was not enough time left in the session for the Congress to act upon it.

I urge this committee to again consider favorably the need for the authorization of the southern Nevada water project and thereafter to take affirmative and prompt action to authorize its initiation and fulfillment.

There is a critical water supply situation in southern Nevada and this project is needed to protect and conserve the dwindling ground water resources of Clark County and to provide a sure additional supply of municipal and industrial water required to serve a rapidly increasing population, while at the same time providing for the optimum development of the natural resources of this area of our State.

Since the early 1940's, southern Nevada has experienced a fantastic growth in population—from an approximate 50,000 people in 1950 to more than a quarter of a million people today.

Projections of future growth indicate that between 400,000 and 525,000 people will be in need of water in this area by 1970; and that by the year 2000, nearly 1 million people.

The area includes Las Vegas, North Las Vegas, Henderson, Boulder City, Nellis Air Force Base, and the El Dorado Valley. It is an area of favorable climate, large tracts of undeveloped land, a strategic location in relation to the Lake Mead National Recreation Area, the Nevada atomic test site, and the installation of the National Aeronautics and Space Administration.

The biggest problem confronting the area is that of availability of water.

An assured water supply is needed to serve the expanding population and to assure a healthy economic base for future growth. Without water, the population and industrial growth will be stymied and the heavy investment of the Federal Government in the Nellis Air Force Base, the atomic energy test site, and the NASA project will be seriously hampered.

The principal source of water at present is the underground artesian basin, supplemented by a small amount of water pumped from Lake Mead. Withdrawals from the ground have for many years exceeded the safe margin, with the result that there exists a critical depletion of the underground waters.

Nellis Air Force Base relies entirely on wells for its water supply, and faces an especially critical situation. In the summer there is not adequate water for fire protection and water conservation practices are strictly enforced.

All interested parties are unanimously in favor of the project. The Nevada State Legislature recently designated the Colorado Rover Commission of Nevada as the State agency to contract with the U.S. Government for the repayment of project costs and to operate and maintain the project after construction.

It also has the active support of the Nevada congressional delegation, Governor Sawyer, who testified earlier, the department of con-

ervation and natural resources, the El Dorado Valley Advisory Board, the Clark County Commissioners, the Southern Nevada Industrial Foundation, and all the municipalities and city groups located in the area.

The building of this project has been delayed in past years pending the decision of the U.S. Supreme Court in the case of *Arizona v. California*, to which Nevada was a party.

I see the distinguished Senator of California here. He is well aware of the matters involved in that particular case and we are very happy that we were not, insofar as the State of Nevada is concerned, in dispute with either Arizona or California on their particular problem.

The decision confirmed the allocation to Nevada of 300,000 acre-feet of the waters of the Colorado River. It is these waters that this project would utilize through its distribution system.

The entire cost of the project will be repaid by municipal and industrial users of the water from the project over a period of 50 years, with interest, as you heard the Governor state.

Further, this project is a component of the Southwest Pacific water plan proposed by Secretary Udall. The southern Nevada water supply project does not need to be held up until action is complete on the entire regional plan.

Authorization and construction of this project will in no way interfere with the full plan for the arid Southwest States.

The best reason I can give for asking your early favorable consideration of the southern Nevada water supply project is that the people and the industries that have invested their lives and fortunes in southern Nevada need—and must have—water if they are to survive and realize their potential.

We have reached the point in our development in the area where the underground artesian basin can no longer support our people, our towns and cities, and our industrial and Government installations.

With water, progress can be orderly and of great benefit to the region and the Nation. Without water, insoluble problems will arise, with population and economic growth stifled, even as our ground water supplies are declining.

In conclusion, Mr. Chairman, I simply say the project is needed; it is time; it is reasonable; it does not interfere with the larger plan for the Southwest; financially, it has independence and feasibility.

It is vital to the survival, development, and prosperity of the people of southern Nevada.

I ask your support in making the project a reality.

Now, some questions have been raised to the Governor that I would like to address myself to. I am very familiar with the area as that happens to be the area that I come from in the State.

Senator Allott asked about whether or not there were agricultural uses. The use is not an agricultural use proposed for the water. The land immediately in that vicinity is not particularly suited for agricultural purposes. It is not one of our good agricultural areas of the State and the cost of putting the water on it for the type of land it is would not make it really feasible, agriculturally.

The El Dorado Valley project as you heard, does not involve agricultural use.

Senator Burdick asked the question about the subsurface water that we have in the area. I can digress briefly for a little personal history. At the time I referred to here in 1950 I was city attorney in Las Vegas. Initially, the whole water system in southern Nevada there in the Las Vegas area was owned by the Union Pacific Railroad. They had this water system solely to provide water for their available trains when the train line went through there and they acquired all of the water from an underground source, much of it through their artesian wells.

We had, at one time, if I remember correctly, either six or eight flowing artesian wells that were providing water to the Las Vegas area. Gradually, they had to drill additional wells and these then became pumping wells. They had to increase the number of wells, thus further depleting the underground supply.

On my own property in Las Vegas when I first moved onto it I had a well in my backyard and had enough pressure through an artesian flow to supply the water pressure for my house, to water my orchard and my lawns and that sort of thing. Now I can get no water out of this well in an artesian flow. I am on the Las Vegas Valley Water District system at the present time, but my little well at one time supplied that type of pressure and will not free flow today at all.

This will give you an indication of the situation when I was city attorney and we arranged to take over from the Union Pacific their water system they had some wells which we began pumping and drawing sand out of at that time because they had been practically depleted and we had to increase the depth of those wells; clean them out; go down to deeper depth and then finally, to bring in, in connection with the facilities at Henderson, the pipeline that they had to Lake Mead to arrange for bringing in an additional supply of daily water which we are doing every day now to supplement the underground system. Without this source we could not exist even today and what we are trying to do now is to supplement it so we will have the opportunity for expansion and growth.

Thank you, Mr. Chairman. I appreciate this opportunity to appear before you.

Senator BIBLE. Thank you for an extremely and able presentation and your own first-hand knowledge of the water situation.

The Senator from California?

Senator KUCHEL. I want to say to my friend and colleagues from our neighboring State of Nevada that when I introduced the bill dealing generally with the subject of the Colorado River development, I know my colleagues will both recall that I included in S. 1019 authorization for the project which my colleagues are now sponsoring in a separate piece of legislation. In many respects it may well be that it should be a separate piece of legislation.

The only question I have—and perhaps this has already been answered, Senator—is the problem raised in the Department of Interior's letter with respect to the interest rate.

Do my colleagues accept the position that the Department has taken?

Senator CANNON. I would not be prepared to answer that. I think that we are prepared to take the project under whatever conditions we can get it. While that interest rate is a little higher than we would like to pay, certainly we recognize that that is the going interest rate

for some of the federally supported projects and if we cannot get a lower interest rate we would have to accept it as we have to have this project irrespective of what we have to pay on the interest rate.

Senator KUCHEL. Well, thank you, very much.

Senator CANNON. But please do not hold me to that now. If we can get it for less, we would like to have it for less.

Senator BIBLE. I would join my colleague in that respect. We are going to improve our position, if we can. We would like to have it lower, and the Bureau of Reclamation and the Bureau of the Budget should testify on that.

Senator KUCHEL. That is the only question which has been raised by the Department.

Other than that, I take it there is an unqualified endorsement of the project.

Senator BIBLE. That is correct.

Senator KUCHEL. No further questions. Thank you very much.

Senator CANNON. To the distinguished Senator from California, I must say we are very grateful this project does have the endorsement of the respective agencies and we are very happy to have their support for it.

Senator KUCHEL. By the way, Senator, there should be in the record some resolutions from some of my constituents favoring this project.

Senator CANNON. We are certainly very happy to have any support from any or all of the Senator's constituency.

Senator BIBLE. I think in last year's hearing when this was a part and parcel of the overall Southwest water plan that there were resolutions that were made a part of the record indicating particularly the approval of the Water Board of California, or the California Water Authority, or whatever their proper name is. But we do have Mr. Pat Head, who is secretary of the Colorado River Commission of Nevada, who is going to make a great many endorsements along this line.

The Senator from Colorado.

Senator ALLOTT. I understand the Senator's position with respect to the interest rate. I presume, although the Bureau can testify to this, that 4 percent was probably used because it is the lowest interest rate that would be available under the community facility loan.

Senator CANNON. That is the position they take, sir.

Senator ALLOTT. And I presume that is the basis upon which they make it, although I am sympathetic to your point of view that you take whatever lower interest rate you may or could get.

I have no questions. I can only say that you are lucky that you still have water in your wells. I have a well at home that I do not even have any water left in.

Senator CANNON. I might say that the project does have a benefit-cost ratio that is very favorable so it is not a project that does not show a benefit by the adding process.

Senator ALLOTT. Yes, it has a benefit-cost ratio of 1.5 in the first phase and 1.6 in the second phase.

Senator CANNON. That is correct.

Senator BIBLE. Thank you very much, Senator Cannon. If you would care to stay for the remainder of the proceedings I would be delighted to have you sit with the committee. I know you have other

commitments this morning and you just suit your convenience, but why not join us up here?

Senator CANNON. I would like to stay for a little while and then I must leave.

Senator BIBLE. Then come up here and sit with us.

At this point, Mr. Reporter, I will place into the record a statement by our Congressman, Walter S. Baring. Unfortunately, Mr. Baring could not be here this morning. I know that he has an intense interest in complete support for this project. This is exactly what his statement underscores.

Without objection that will be placed into the record at this point. (The statement referred to follows:)

STATEMENT BY HON. WALTER S. BARING, A U.S. REPRESENTATIVE IN CONGRESS  
FROM THE STATE OF NEVADA

Mr. Chairman, I am pleased to appear before you today in support of the southern Nevada water supply project, S. 32, which I have cointroduced in the House of Representatives with my own identical bill H.R. 2020.

When Nevada became a State in 1864, it covered a somewhat smaller area than today for it was not until 1866 that the State of Nevada was enlarged to its present size. This is of particular interest, for in 1866, the barren dry desert-land which was then added to the State was not particularly welcome and it took a couple of sessions of the legislature to come to agreement on this new land addition. However, this very land is where Clark County and the city of Las Vegas now lie, a booming metropolis and a tremendous asset to Nevada and the Nation.

Las Vegas was first just a water stop on the Union Pacific Railroad, for in the midst of this desert, water had been found. From this waterhole Las Vegas, and indeed all of Clark County developed. Over the past two decades the growth of Las Vegas, North Las Vegas, Henderson, Boulder City, and all of Clark County has been tremendous, to where this county is the fastest growing county in the Nation.

The old water hole is actually an artesian belt to the north of Las Vegas which in turn is supplemented by water pumped from Lake Mead. But for many years now the demand for the ground water has far exceeded the safe yield causing serious and justifiable concern that the underground water supply will run entirely dry.

The future growth projection reveals that the growth in population in Clark County will continue to gain momentum to where it is expected that by 1970 the population will far surpass 300,000, making it evident that the already short water supply will become totally inadequate to meet the water needs of the anticipated increased population.

Furthermore, of prime importance is the fact that not only is an increased water supply urgently needed to fulfill the water needs of the present population, and the needs of the anticipated population growth in the area, but the needs of the Federal Government located at Nellis Air Force Base, the atomic energy test site, and NASA would be seriously hampered unless more water can be brought into the area soon, and there is little doubt that the economic growth of southern Nevada will be governed by the water that is available. This is self-evident.

You may wonder why action has not been taken to do something about this serious water problem before this, but activity on this issue had been delayed awaiting the U.S. Supreme Court decision in the Colorado River water compact of 1922. This decision was finally returned on March 9, 1964, and which decision among other things, allocated 300,000 acre-feet of waters of the Colorado River to the State of Nevada. These are the waters which will be utilized in this southern Nevada water supply project under discussion today.

The initial stage of the southern Nevada water supply project would pump 132,000 acre-feet of water annually (about 35 billion gallons) from Lake Mead, but under the project's ultimate stage of development the diversions would be increased to 312,000 acre-feet annually. The net withdrawal of Colorado River water resulting from the finally completed project would be 262,000 acre-feet, well within the 300,000 acre-feet allowed.

Nevada's interest in this project is indicated in the Nevada State Legislature's designation of the Colorado River Commission of Nevada as the State agency to contract with the U.S. Government for the repayment of the project costs, and to operate and maintain the project when it is finally completed, and in the active support of Nevada's congressional delegation, the State of Nevada, through its Governor, and every responsible State and local organization.

The project is not dependent on power revenues for payback, but would be repaid to the Government with interest over a 50-year period, normally used for this type program.

I feel the need for this project is well demonstrated here today, and I urge the committee to report the bill favorably to the U.S. Senate.

Thank you.

Senator BIBLE. Our next witness is the Honorable Kenneth Holum, Assistant Secretary of the Interior for Water and Power, to be accompanied by Floyd E. Dominy, Commissioner, Bureau of Reclamation and A. B. West, Regional Director, Bureau of Reclamation.

You gentlemen please come forward.

**STATEMENT OF HON. KENNETH HOLUM, ASSISTANT SECRETARY OF THE INTERIOR FOR WATER AND POWER; ACCOMPANIED BY FLOYD E. DOMINY, COMMISSIONER, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR; AND A. B. WEST, REGIONAL DIRECTOR, BUREAU OF RECLAMATION**

Mr. HOLUM. Mr. Chairman, I am pleased to appear before this committee to recommend the authorization of construction of a worthwhile and urgently needed project.

The southern Nevada water supply project is essentially a single-purpose municipal and industrial water resource development located in Clark County, Nev. The project plan involves the construction of facilities to provide municipal and industrial water from Lake Mead to the cities of Las Vegas, North Las Vegas, Henderson, and Boulder City, to the Nellis Air Force Base, and to potential developments in the El Dorado Valley area near Boulder City.

Intake, pumping, conveyance, regulatory, and storage facilities will be provided in three incremental stages with the construction of the first stage to be initiated as soon as funds are available, and the second and third stages will be constructed as additional capacity is required.

The estimated costs of construction of the project are \$49,024,000 for the first stage and \$81,003,000 for the ultimate development.

The project has economic and engineering feasibility, and the benefit-cost ratios are 1.5 for the first stage and 1.6 for the ultimate project.

This project was among those included in our proposed Pacific Southwest water plan. It was one of the units recommended for immediate authorization. Although the project depends for its water supply upon the availability of water in the Colorado River, it will not require financial assistance from the Lower Colorado River Basin fund proposed in S. 1019. We therefore support legislation which would provide for the separate authorization of the southern Nevada water supply project and which is fully compatible with the provisions of S. 1019.

Our substitute bill submitted with Secretary Udall's legislative report reflects minor editorial and format changes. The name of the project is corrected to conform to our reports and unnecessary refer-

ences to amendatory legislation have been deleted. The language has been shortened and simplified.

We have omitted the provision to permit allocations of cost to irrigation. If there is any irrigation, it will be only incidental use of return flows. We have provided greater latitude for identification of the agency through which the State may act in contracting for repayment, made that authority provisional upon certain of the other provisions of the bill, and included a requirement that the wholesale contracts oblige the purchasers to exercise tax and assessment powers to meet the service charges.

Section 2(a) (ii) of our substitute bill requires that the construction costs allocable to municipal and industrial water be repaid with interest in not more than 50 years.

Under this section, the construction costs of each stage of the project shall be repaid in not more than 50 years beginning with the date of completion of that stage.

Our substitute bill would establish the rate of interest used for repayment purposes at 4 percent. The formula specified in the Water Supply Act of 1958 currently produces an interest rate of 3.137 percent. S. 32, as drafted, proposes to use that formula.

The Community Facilities Administration of the Housing and Home Finance Agency provides long term loans to small communities to enable them to build essential community facilities, including municipal and industrial water facilities similar to those covered by S. 32.

The current rate of interest applicable to such loans is 4 percent. The population of the applicant community must be under 50,000, or 150,000 in designated redevelopment areas, in order for it to be eligible for assistance under the HHFA program.

This program, therefore, under existing authority is not applicable to the proposed southern Nevada water supply project, although the type of facility involved and purpose of the project are similar.

In all cases where single purpose municipal and industrial water supply facilities have been constructed under reclamation law the repayment charges imposed have included a component which will return an equitable portion of the water storage or water supply works involved.

In the case of the southern Nevada water supply project, however, only a 50-cent charge per acre-foot, or less than two-tenths of a cent per thousand gallons, is anticipated to reflect withdrawal of water from Lake Mead. This charge is set by contract with the State of Nevada which was made pursuant to the provisions of the Boulder Canyon Act.

This low cost for the storage and hydraulic head provided by Lake Mead will permit the repayment of the reimbursable project costs of the conveyance system in 50 years at 4-percent interest while maintaining water charges which compare favorably to those for new similar water supplies being developed in the Southwest.

The cost of project water will vary from about 15 cents per thousand gallons when the initial deliveries are made to less than 10 cents per thousand gallons when the first stage is operated to capacity and to about 4 cents per thousand gallons when the ultimate capacity of the project is reached. These costs, of course, do not reflect the cost of treatment and distribution to retail customers.

The southern Nevada water supply project is an eminently desirable development. It will contribute to the future prosperity and expansion of one of the fastest growing areas of the Nation, and one in which the Federal Government has a significant investment in installations. It will directly benefit half of the population of the State of Nevada. It will also repay to the Treasury with substantial interest the entire Federal investment cost of the project, with the exception of \$237,000 of some general investigations costs which were financed from the Colorado River development fund.

I strongly recommend the enactment of the substitute bill provided by the Department's legislative report on S. 32 to authorize the construction of the southern Nevada water supply project.

I am sure, Mr. Chairman, that Commissioner Dominy has a statement he would like to make at this time and then he and I will be happy to answer any questions.

Senator BIBLE. Thank you very much, Mr. Secretary, and I think you indicated a little earlier you had some urgency in attempting to get away at a reasonable time so I think that there are a few questions that I would like to ask and possibly the Senator from California might like to ask you some questions.

I notice in arriving at this interest rate you take paragraph 2 to comment on the very, very favorable low charge that the State of Nevada has in securing water at 50 cents per acre-foot and saying that is less than two-tenths of a cent per thousand gallons and then you comment on that with another following paragraph.

Actually, that is a charge that is set by contract between the U.S. Government and the State of Nevada under the provisions of the Boulder Canyon Act, is that not correct?

Mr. HOLUM. That is correct.

Senator BIBLE. If we are entitled to that and if we have a very favorable contract, why should that in any way have any bearing upon what the interest rate should be on the building of the distribution system? I do not quite get the connection. I think it is a very favorable rate and if we were fortunate enough to secure that many, many years ago, which we did, I think we are to be commended for it rather than penalized for it.

Mr. HOLUM. Mr. Chairman, there is no intention within the Department or the Administration to penalize the State of Nevada. We recognize this is an existing and longstanding contract, and I am sure these are considered valid reasons today. However, under the Water Supply Act of 1958, on all projects that have been constructed by the Bureau of Reclamation for the provision of new municipal and industrial water, the costs of storage facilities required under proper allocation procedures have been, in part, allocated to these municipal and industrial water supplies. They are repayable with interest under the formula rate.

This is a unique situation, Mr. Chairman, in that no provision was made at the time and no procedures are available now for making appropriate allocations of cost for the storage facilities to these municipal and industrial water users under this project and for that reason the Administration considers it reasonable that a 4-percent interest rate should be applied in this completely unique situation.

Senator BIBLE. We have always—and you and I have discussed this many times and I have discussed it with Commissioner Dominy many times and with the Budget officials many times, and we pointed to the Canadian River project and we pointed to the Norman, Okla., project as possible precedents in permitting us to receive the same interest rate that they are receiving.

You have always responded, and I want you to make a record on this, that there is a difference. Would you point out what that difference is in the Canadian River project? We always say the Canadian River interest is  $3\frac{1}{8}$  percent. Why should it not be  $3\frac{1}{8}$  percent here? That is also largely for domestic and commercial water use.

Mr. HOLUM. Mr. Chairman, I am not sure whether the Canadian interest rate is  $3\frac{1}{8}$  percent or something different.

Senator BIBLE. Somewhere in that range, though.

Mr. HOLUM. On the Canadian River project, however, the \$31 million cost of the dam and facilities necessary to store and provide the water are largely chargeable to the municipal and industrial water users.

In this case, the charge derived from storage amounts to 37 percent of the cost of the water to the water using agency.

Senator BIBLE. Would you spell that out a little further? You say the amount allocated to the building of the dam, the storage, is about 37 percent.

Mr. HOLUM. It is 37 percent of the cost of the project water to the consumer.

Senator BIBLE. What does that mean if you were to translate it into an interest factor—if you translate that to an interest factor, does that get you up to an interest rate in the Canadian River project of 3.8, 3.7, or what?

Mr. HOLUM. I would have to do some calculation, Senator. I suspect if you start out with a  $3\frac{1}{8}$  percent interest rate as we have at the present time what you would go above 4 percent in the interest rate if we did not charge interest on the storage facilities.

Senator BIBLE. Once you do charge interest on the storage facilities that obviously makes the interest rate go up.

Mr. HOLUM. That is correct.

Senator BIBLE. I am advised by staff that the rate certified for the Canadian River project, which we authorized many years ago, in 1950, arriving at a formula of 2.6 percent, that was the rate of that particular project but you say that goes considerably higher if you wrote into it 37 percent of the cost for the storage tank.

Mr. HOLUM. You would increase the interest rate in that case.

Senator BIBLE. What is the situation for the Norman River, which is a much later authorized project? We have always used that as an example when we wanted to use it.

Mr. HOLUM. In the case of the Norman project, more than half of the total cost is in the dam and reservoir necessary to store and provide the water. The rest of the cost is in the conveyance system.

In this case, if all other reimbursement were to come from the conveyance system, whatever the prevailing interest rate, it would be more than doubled under the theory we are pursuing here at this time. It would go well over 4 percent in this case.

Senator BIBLE. What you are saying is if the distribution system which we are asking for now had been constructed at the time the Hoover Dam was constructed you would have written into the final cost a certain percentage for joint cost of building the dam. Is that correct?

Mr. HOLUM. That is absolutely correct.

Senator BIBLE. I also understand you have great difficulty down in the Bureau in attempting to figure out exactly what that joint cost would be because of a complicated structure.

Mr. HOLUM. It is almost impossible, Senator, to make calculations like that with any accuracy because of the long and involved history of the Boulder Canyon Act and the many contracts that have been developed since the act was passed. The facilities provided by the Colorado River storage project also becomes involved because the water that is actually used and stored is supplied out of the facilities at Glen Canyon. So it becomes almost impossible to make these calculations with any degree of accuracy at all. That is basically why, in this unique situation, we are proposing the 4-percent interest rate in compensation.

Senator BIBLE. You also say that one of the reasons you arrived at a 4-percent interest rate is that if we went to HHFA and asked for a loan for the construction of distribution facilities the law requires that the money carry 4-percent interest. Is this true?

Mr. HOLUM. Yes, Senator Bible. When you run into a problem or situation that is completely unique and different from any you have experienced before, you start looking for precedents and the best available precedent in the Federal structure in the water field is the loan program of HHFA. I think it is applicable and significant.

Senator BIBLE. I wanted to lay some background on this because I think the testimony is clear. We want the project. There is a great urgency. It is a little difficult to argue about paying the interest that the Government itself must pay to get the money. It is not out of the ball park at all.

Mr. HOLUM. I understand your concern completely, Senator, and I want to emphasize again this is a completely unique situation because the storage facilities have been built so long ago there is no specific provision made for the urgent need for this water now for municipal and industrial purposes in Nevada.

Senator BIBLE. Before the Senator from Colorado left he asked if I would inquire of you on one matter and that was as to whether or not there is anything in the southern Nevada water project that is in any way incompatible with the overall Southwest water project.

Mr. HOLUM. No, sir, there is not. The project that we are considering this morning has been, from the beginning, an integral part of water resource development in the Pacific Southwest as far as the Department of Interior is concerned. This legislation we are discussing this morning is completely consistent with the proposals now before the Congress for meeting the urgent and greater needs of the Pacific Southwest.

Senator BIBLE. Thank you, Mr. Secretary.

The Senator from California.

Senator KUCHEL. I have no questions except simply to ask is it not true that the Department recommends this legislation to be handled

separately rather than as a part of any bill such as S. 1019 because this project will be repaid in full by those who reap the benefits and that the proposed river basin fund would not be used in connection with its repayment?

Mr. HOLUM. I prefer to say it this way, Senator Kuchel. As far as the Department of the Interior is concerned, we recognize the urgent need in Nevada for this project.

We would like to see it authorized either separately or as a part of an overall plan as expeditiously as possible, and either course of action is agreeable to us.

Senator BIBLE. Senator Cannon, did you have any questions?

Senator CANNON. I thank the distinguished chairman. I want to associate myself with him on this interest-rate problem. I do have one question. In the HHFA projects, do they have as favorable a ratio benefitwise, as other projects?

Mr. HOLUM. I am not familiar with the projects financed by HHFA. I am sure that they would, in effect, have to have favorable benefit-cost ratios in order to demonstrate a secure basis for a loan.

Senator CANNON. Of course, this project could not qualify under an HHFA program.

Mr. HOLUM. Not under the present authorization.

Senator CANNON. And therefore, I think it would be better to use as a guide comparable interest rates on comparable projects rather than to say under some other program that the Federal Government has for which you cannot qualify here, that we are going to take it out of the air or out of a hat, an interest rate that those projects would have.

Mr. HOLUM. Senator, I would certainly agree with you if there were comparable projects to which we could make comparisons. There is no comparable project in the total Bureau of Reclamation program as it exists at the present time and I do not think Commissioner Dominy would see anything similar to it occurring any time in the immediate future so there are no precedents to look to for comparable situations. The closest precedent is the HHFA program.

Senator CANNON. I thank the chairman.

Senator BIBLE. Thank you very much, Mr. Secretary. I understand you have other commitments and you may be excused.

Mr. HOLUM. Thank you very much, Senator.

Senator BIBLE. I now recognize the Commissioner of Reclamation, Mr. Dominy.

Mr. DOMINY. Thank you, Mr. Chairman. It is a pleasure to appear before you in support of a vitally needed water supply development. The southern Nevada water supply project would supply municipal and industrial water from Lake Mead to the cities of Las Vegas, North Las Vegas, Henderson, and Boulder City, and to the Nellis Air Force Base.

It would also make municipal and industrial water available for the potential development of the El Dorado Valley area and provide some incidental flood control. The entire project lies within the State of Nevada. The area which would receive water from the project has been experiencing phenomenal population expansion in recent years and foreseeable demands for water greatly exceed the supplies available from existing ground water sources and through the limited existing conveyance facilities for water from the Colorado River.

The proposed plan of development is a single-purpose municipal and industrial water supply project consisting of facilities to pump water from Lake Mead and convey it through an aqueduct system to key terminal points from which it would be taken by the various water agencies into their own distribution systems.

The plan proposes that the project be constructed actually in three stages with progressively larger capacities. Those features essential to later stages which could be more easily and more economically constructed initially would be included in the first stage. Funds would not be requested for construction of the remaining second and third stage features until the additional capacity is needed.

The proposed project facilities include six pumping plants, ranging in capacity from 30 to 300 cubic feet per second, for the first stage, and from 90 to 640 cubic feet per second for the ultimate project; associated forebay reservoirs; the River Mountains regulatory reservoir; about 35.5 miles of aqueduct and lateral pipelines, including a 4-mile tunnel; and accessory electrical equipment and transmission lines.

The 3,600 acre-foot River Mountains Reservoir would occupy a portion of a canyon about 4 miles northeast of Henderson. The reservoir would be formed by an earth- and rock-filled dam 160 feet high with a crest length of 590 feet and a dike 90 feet high with a crest length of 730 feet. The dam would have a concrete spillway, and the reservoir would have a concrete-lined combination inlet-outlet tunnel.

The first stage of development would provide up to 132,000 acre-feet of water annually, which is the estimated annual delivery requirement for the year 1990.

The ultimate development will provide for an annual delivery requirement of 312,000 acre-feet, which it is estimated will occur about the year 2020.

The estimated net depletion of water from Lake Mead, including all three stages of the project and existing systems, is about 262,000 acre-feet annually. This is within Nevada's 300,000 acre-feet per annum entitlement from the Colorado River which was confirmed in the U.S. Supreme Court decree of March 9, 1964, establishing the basis for apportioning the waters of the Colorado River.

The estimated total construction cost of the first stage of the southern Nevada water supply project is \$49,024,000, and the estimated cost of the ultimate project will be \$81,003,000. Both cost estimates are based on April 1963 price levels.

The annual operation, maintenance, and replacement costs are expected to range from \$550,000 in the first year of project operation to \$1,457,000 per year at full development of the first stage and grow to a requirement of \$3,381,000 per year when all three stages are operated to capacity.

The economic evaluation for a 100-year period of analysis indicates that the estimated total benefits would exceed the average annual costs in the ratio of 1.5 to 1 for the first stage and 1.6 to 1 for the ultimate project.

All of the project investment costs are assigned to the municipal and industrial water supply function. For the first stage of development these costs total \$51,498,000, which includes \$2,474,000 interest

during construction. Of this amount, \$237,200 are investigation costs financed from the Colorado River development fund and are non-reimbursable.

I hasten to point out the reason they should be nonreimbursable is that they have been paid once in the form of power revenue receipts, which is the source of the Colorado River development fund. So if they were to be reimbursed here, it would be double payment and it would not be proper to load that onto the project.

The remainder would be repaid by the water users with interest. An interest rate of 4 percent is recommended. Using the 4 percent interest rate, water rates would vary from about 15 cents per thousand gallons in the initial years to 10 cents per thousand gallons in the later years of the initial stage. These rates are considered to be well within the repayment capacity of the water users.

In recent decades, Clark County, Nev., which encompasses the southern Nevada water supply project, has experienced tremendous population increases. The first substantial growth in the area occurred starting in 1931 with the employment connected with the construction of the Hoover Dam.

During the 1940's Nellis Air Force Base was established and industrial expansion took place. In 1940, the population of the country was just over 16,000, 15 percent of the population of the State of Nevada.

In 1950, the population had increased to over 48,000 and in 1960 to 127,015 which was 45 percent of the State of Nevada's population.

Continued rapid growth was anticipated at the time we prepared the basic feasibility report in August 1963. Subsequently census estimates greatly exceeded our projections, however, and our April 1965 supplement presents an increased capacity for the first stage of development to reflect that situation.

The 1962 population of Clark County was 193,000 and the current projection estimates a population of 503,300 in 1990, which would require the full water supply capacity of the first stage, and we expect the population to go to 773,300 in the year 2020, at which time the capacity of the ultimate project would be required.

The past and projected future population expansion of the project area can be attributed to three major factors:

First, the tourism attractions of the area, based on climate, enlargement of recreational facilities at Lake Mead and Lake Mohave, and accelerated construction of luxury hotels and motels and other entertainment attractions in the Las Vegas area.

Second, the establishment and expansion of activities at Nellis Air Force Base and at the Nevada atomic test site.

Third, continued mining, processing, and manufacturing of various products, including titanium, rocket fuel, chlorine, and various high-value chemicals.

Continued growth of all three facets of the economy can be logically anticipated, assuming that an adequate and dependable water supply is available.

The current water supplies for the area are obtained both from ground water and from Lake Mead. The communities of Boulder City and Henderson and the industrial complex adjacent to Henderson depend entirely upon Lake Mead water.

The Boulder City water supply is furnished under the provisions of the Boulder Canyon Project Act. The existing supply system, built by the Bureau of Reclamation, now requires rehabilitation and augmentation, and that work is currently planned independent of the southern Nevada water supply project. The supply, however, will then be only barely adequate for short-range requirements. The southern Nevada water supply project will be needed for long-range community growth. Lake Mead water is supplied to Henderson and the adjacent industries by the facilities of Basic Management, Inc. This system is now being operated near full capacity during periods of peak demand.

The principal source of water in the Las Vegas area is the underground artesian basin, but is supplemented with Lake Mead water purchased from the Basic Management, Inc., system. Withdrawals from the Las Vegas ground water basin have for several years exceeded the safe yield despite restrictions on well use and development.

Serious reductions in artesian pressures are being experienced over much of the area. The Nellis Air Force Base, which relies entirely on wells, is faced with an especially critical situation, and serious conservation measures are now in force on the base.

There are no existing facilities which would provide water for the potential development of the El Dorado Valley outside of Boulder City.

Current water shortages are serious and becoming more acute with continued overtaxing of the Las Vegas Valley ground water reserves. The relief of the existing problems as well as all the anticipated expansion of population and industry throughout the area will be entirely dependent upon the facilities of the southern Nevada water supply project.

This project has been found to have full economic and engineering feasibility and is urgently needed. It has the wholehearted and active support of the State, the local communities and civic groups, and private individuals.

I know of no project I have ever had the privilege of presenting to your committee that has the absence of any knockers or objectors. We have nothing but supporters in the State of Nevada and the communities to be served are solidly behind this project.

The State of Nevada has designated the Colorado River Commission of Nevada as the State agency to sponsor, operate, and maintain the project, and to contract with the United States for repayment of the costs.

In addition, the State has enacted legislation to provide the commission with authority for these assignments.

I recommend that this committee act favorably on the substitute bill for S. 32 which has been proposed by the Secretary.

Thank you, Mr. Chairman.

Senator BIBLE. Thank you very much, for a very, very fine statement, Mr. Commissioner, and I share with you your commendation for the unanimity with which this project comes to us. In addition to the unanimity that we have in the State of Nevada it is rather remarkable, it seems to me, that with the constant strife over the water of the Colorado River for many, many years, that in this project we have both the State of Arizona and the State of California saying, "Hop to it and get this project done."

We realize it does have urgency and I think that shows the validity and the importance of the project.

I have only one question and it may be something that will have to be supplied for the record. I ask this question of you as well as the Secretary and that is if you have any material available to show what the joint costs in these earlier projects would amount to, interestwise.

Now, I do not know whether that would be down in your shop or not. The only purpose of the question is this: going to the problem of the interest rate, if I understand it correctly, if this project were to be completed in its entirety now, if the dam were to be built and the generators were to be put in and the powerplants and this project was to be put in right today, it would be put in with an interest rate under the Water Supply Act of 1958 and that it would have a factor in there related to the joint costs and the purpose of my inquiry is to find that if we have in the reclamation world and in projects under your command—and let me add here your very able command—projects that would be comparable to this.

Secretary Holum said this stands all alone, but if you want to relate it to the Norman project or the Canadian River project or any other projects that are contemporaneous how much do you allow for joint cost related to interest?

Do I make myself clear?

Mr. DOMINY. Yes, I think you make your inquiry quite plain and I want to say that Secretary Holum's point in saying there was no project exactly comparable to this referred to the fact that Hoover Dam, having been built a long time ago, the charge for the municipal water space and storage in Hoover was arrived at under an entirely different formula than that used at Norman and Canadian River projects.

If Hoover were to be built today, there would be a much different allocation of cost to flood control, for example, under our present procedures. The whole process of allocating the multiple use of Hoover would be different. There would undoubtedly be an allocation to recreation and fish and wildlife.

Senator BIBLE. I am sure that is true. That has come along in the years.

Mr. DOMINY. Here are 3½ million people using a lake, in a stretch of the river no one used at all prior to the construction. So a sizable part of the lake, Lake Mead, and the cost of the Hoover Dam, could very properly be justified as a multiple-use for recreation and fish and wildlife enhancement. Hoover benefited those things all the way down the river below Hoover and under today's procedures we would take that into account and, of course, there would have been an allocation to municipal and industrial uses for the Metropolitan Water District of California and for central Arizona as it develops under today's procedures. None of this is true. So, starting where we are with an existing structure built in the 1930's we have an entirely different set of circumstances as to how we finance Hoover Dam and Lake Mead. But we will attempt to give you a statement that would reflect a municipal water charge for the Canadian River project, if that project were to be built with the storage facility costs shown in the interest payments.

Senator BIBLE. Well, that first, and No. 2, Norman, which is even more contemporaneous, what factor do you use there as related to interest?

Mr. DOMINY. Well, there we use the rate derived from the formula subscribed by the 1950 act which authorized the Canadian River project. It is 2.6 percent.

Senator BIBLE. I understand that particular interest factor, but you justify this higher interest rate on the southern Nevada water project by the fact that there was no cost melded into this.

What I am really asking is what are the joint costs in Norman and Canadian River related to an interest rate? I do not know whether you can come up with this or not.

Mr. DOMINY. I am not just sure we can, either.

Senator BIBLE. I am sure it was not based on that analogy. It was based on the analogy of going to the HHFA.

Mr. DOMINY. Exactly.

Senator BIBLE. But I am trying to find an analogy that gives us a more favorable interest rate.

Mr. DOMINY. In all fairness, there is an item that comes to my attention that I was not aware of until a few moments ago, not being familiar with the HHFA process. I have no administrative responsibilities in that area, but I understand that their 4-percent interest includes a one-half percent for administration.

Now, a part of the administration of these programs under our project development is covered in the cost of construction and is allocated to project functions.

Senator BIBLE. What you are saying, going the other way around, is that maybe their interest rate is 3.5 percent and put one-half percent on for administration and get a figure of 4 percent and if we get  $3\frac{1}{8}$  or  $3\frac{3}{4}$  under the Water Supply Act and put a certain percent for administration we would still get up in the 3.9 range. Is that what you are saying?

Mr. DOMINY. If you are charging the 4 percent here, perhaps you would be justified in asking for a reconsideration of the allocation and there might be a lesser allocation on which the interest would be paid. I think this ought to be looked into. I was not aware there might be a difference here between our two project formulations and construction costs.

Senator BIBLE. Thank you very much, Mr. Commissioner. I have no further questions.

I would like at this time to recognize our very distinguished regional director, Mr. West, who is doing a great job out in our region and I do not know whether he has anything to add or not. Mr. West?

Mr. WEST. Thank you, Senator. I would just say we have come a long way since that day in October 1960 if I remember correctly when we got together in Las Vegas and developed the basis for the request that was to go to the Bureau of the Budget so it would reflect a small amount of money to begin the planning for this work. It has been a very happy experience out there with the fine cooperation of all the local people.

Senator BIBLE. You men are to be commended for it and I think the record should show that it was not until July a year ago that we had a final decision from the Supreme Court to know exactly how much water we did have tied up and it is a good deal like buying a home. You are not going to buy a home until you know you have a clear title to it. Now we know we have a good title to this water and

we can proceed. I think you have moved very ably and very effectively in this.

You have a table that shows expenditures and perhaps we should develop this in the record a little. Assuming the ultimate enactment of this—the signing by the President of the United States, and I am very optimistic and very hopeful it can be done at an early date—then how long would it take from there to get into actual operation of the project? How much advance planning and design work do we have to do and when does it go to contract?

I have a table showing an expenditure of something like \$700,000 the first year, and \$3 million the second, and \$20 million the third, and \$23 million in the fourth year.

Could you spell that out a little?

Mr. DOMINY. Yes; we have projected a construction schedule that the first year of construction would be about a \$700,000 figure. This would be the advance planning for the detailed engineering of the various facilities involved. Then the actual construction contracts would follow in the second year and this would jump our construction program up into the \$25 million range and then in the third year, about \$21 million and almost \$2 million in the fourth year to wind up the first stage construction. So you have about 4 years from the time the project is authorized, assuming funding followed promptly, before you would have this project constructed and available to make water deliveries.

Senator BIBLE. Well, I wanted that in the record, though I think probably it will appear in another place, and I think it should be developed a little further. Would you care to amplify any, Mr. West? Is that the kind of timetable you see as well, that it must be accelerated? What if you should get more funds earlier? Could you crash program it more?

Mr. WEST. It is rather difficult to compress a 4-year program into 3 years. We do the best we can. We might shave off a half year, perhaps, under a crash program. We always are faced with this in all of our projects.

Senator BIBLE. I recognize that.

Mr. WEST. This same question is repeatedly asked and we certainly do the best we can and we have in some instances been able to telescope some of these operations, having them move simultaneously and thereby save some time.

Senator BIBLE. Telescoping and crashing, depending almost entirely on the funding?

Mr. WEST. Right.

Mr. DOMINY. And the practical limits of that, whenever you try to expedite it, you inevitably increase cost and this schedule is based on an optimum projection of time required to carry out this kind of engineering and construction work without increasing and accelerating the cost.

Senator BIBLE. Now, just one further question that occurs to me. I believe that the Bureau of the Budget advised me that the interest rate under the Water Supply Act would be about 3.25 percent in July 1965. Do you know whether that is right or not?

Mr. DOMINY. It looks like that will be about the rate for 1965.

Senator BIBLE. So if this were constructed under the Water Supply Act, it would not be a  $3\frac{1}{8}$  percent but  $3\frac{1}{4}$  percent.

Mr. DOMINY. Yes, sir.

Senator BIBLE. Thank you very much, gentlemen. You have been most helpful throughout all of this, in what seems to be a long struggle to get a very important project underway. It is well on the way and we could not have done it without your cooperation.

Mr. DOMINY. I appreciate your words, Mr. Chairman. Let me say I have been greatly pleased with the regional director's performance.

Senator BIBLE. Our next witness is Mr. Pat Head, representing the Colorado River Commission of Nevada who will be accompanied by Mr. Ted Lawson.

#### STATEMENT OF PAT HEAD, COLORADO RIVER COMMISSION OF NEVADA; ACCOMPANIED BY TED LAWSON

Mr. HEAD. Thank you, Mr. Chairman.

I am Pat Head, administrator of the Colorado River Commission of Nevada. I joined the commission in August of 1963 after  $26\frac{1}{2}$  years with the Bureau of Reclamation, U.S. Department of the Interior. I spent my entire career with the Bureau of Reclamation in planning, having been planning engineer for the Bureau in California and northern Nevada for the latter years of my employment with that organization. In that capacity I have appeared previously before this committee in support of reclamation projects in California.

It is, indeed, a pleasure for me to appear here before you today representing the State of Nevada through its Colorado River Commission to present testimony in support of the southern Nevada water supply project.

Over the past 15 years southern Nevada has witnessed a fantastic population growth. The population of Clark County, in which Las Vegas Valley is located, was 48,300 in 1950. In 1960, the population was 127,000 and the population today is estimated at 250,000. Many estimate that our population in 1970 in Las Vegas Valley alone may approximate 350,000 people. Outside of a comparatively small amount of water imported into the area from Lake Mead through the facilities bringing water into the Henderson area, the water supply to meet this expanding population has been obtained from our very valuable underground water basin lying beneath the Las Vegas Valley. In 1955, 42,500 acre-feet were pumped from this ground water basin. In 1960, 47,600 acre-feet were pumped, and in 1964, 78,700 acre-feet were pumped from the basin. It is estimated that by 1968 the water requirements for Las Vegas Valley will increase about 40 percent over the 1964 requirements and the water requirements by 1970 will be about 160,000 acre-feet annually, an increase by about 65 percent over the 1964 requirement.

The various studies by the Geological Survey and the Desert Research Institute establish that the amount of annual recharge to the ground water reservoir is on the order of 25,000 to 35,000 acre-feet. You can see from the figures I quoted above that we are presently pumping three times the recharge to the ground water basin, or, put another way, we have exceeded by three times the average yield of that very valuable underground resource. Continued withdrawal of

substantially more than the 25,000 to 30,000 acre-feet of underground water annually will result in serious overdraft of this underground resource.

In this overdeveloped basin certain areas with high transmissibility show little or no lowering of ground water levels while others will develop local cones of depression that will preclude the economic pumping from those cones. Such a situation has already developed in North Las Vegas and that city is now reaching out into other ground water zones in the Las Vegas Valley for its water supply, at great cost. A lowering of 60 feet in water surface since 1956 has been observed in North Las Vegas. The effects of continued overdraft of this underground basin, in addition to the depletion effects, include critical interference between wells, decreasing yields and well flows, land subsidence with resulting damage to structures and prohibitive cost of development of the remaining ground water.

With regard to subsidence, the maximum subsidence between 1915 and 1935 was estimated at 3 inches; between 1935 and 1950, 13½ inches; between 1950 and 1957, 9 inches; and between 1957 and 1963, 35½ inches. Some fissures in the area of rapid ground water withdrawals are as much as one-quarter of a mile in length. These are disrupting sewers, water mains, homes, roads, and wells. It is readily apparent from the above that our present economy will be placed in grave danger if we must continue to rely on our underground resource to supply most of the water requirements of Las Vegas Valley. Not only that, but there is no way of meeting the requirements of the expanding population other than immediate importation of water from Lake Mead. This imported water will have two important immediate functions.

First, it will allow decrease in the pumping from our underground basin, and then, second, it will provide the water requirements of our expanding economy up to, I believe, around 1990 or maybe to the year 2000. In regard to the first function it will further allow selective pumping in the area in order to make proper utilization of this underground basin.

In regard to the latter function it is appropriate at this time to make clear that the State of Nevada, the county, the cities, the Colorado River Commission, and all other agencies in southern Nevada lend wholehearted support to the more comprehensive project known as the Lower Colorado River Basin project as a project of this type is, in our opinion, the only means of meeting our growth after about the year 1990. In addition to the needs in the Las Vegas Valley a large area adjacent to the Las Vegas Valley, known as the El Dorado Valley, has a tremendous potential for development to aid in providing jobs and homes for the expanding population of the Southwest. The southern Nevada water supply project, as planned, would aid in bringing about early development of that area as no local water is available to satisfy its needs. This potential further illustrates the need for more than a project to put to beneficial use the 300,000 acre-feet allocated to Nevada from the Colorado River.

The southern Nevada water supply project has been planned in an outstanding manner by the U.S. Bureau of Reclamation. The facilities included in this plan have been described to you fully here at the hearing and I need to go no further in this regard. However, I do

wish to call to your attention the fact that the River Mountains Reservoir, included as part of the plan, should be one of the first facilities to be constructed in order that it may be used to maximize the present conveyance facilities from Lake Mead, that is, the BMI system.

In addition to serving all of Las Vegas Valley, including the cities of Boulder City, Henderson, North Las Vegas, and the area served by the Las Vegas Valley Water District, Boulder City would receive service from the initial unit of the project. Also, Nellis Air Force Base, situated in the northeastern part of Las Vegas Valley, which presently receives its water from an underground supply, will be assured of a water supply either by stabilization of the ground water resources or by surface import through the project. The United States would be expected to incur whatever costs are necessary to serve Nellis Air Force Base, either directly or indirectly, by stabilization of the ground water supply.

The elimination of the fish and wildlife component from the River Mountains Reservoir has the wholehearted endorsement of the Colorado River Commission and the water using agencies. Provisions for fishing in this reservoir would have caused grave problems in policing the area to minimize the contamination of the domestic water supply.

Las Vegas Valley is drained by Las Vegas Wash, which flows into Lake Mead. Proper operation of the project will require proper safeguards to obviate any danger of contamination of Lake Mead from return flows that will occur under project operation. The commission will accept the responsibility, along with its water using agencies, to provide the necessary means to insure against unnecessary contamination of Lake Mead from this wash. I cannot over-emphasize the importance of that wonderful recreational resource, Lake Mead, to the economy of southern Nevada. We cannot afford to have that very valuable resource injured by pollution. We are at the present time becoming increasingly concerned over the deterioration in water quality as developments occur in the Colorado River Basin above Lake Mead.

The State legislature has enacted into law the necessary revisions in the enabling legislation of the Colorado River Commission to assure the legal ability of the commission to enter into the necessary repayment contracts with the United States for payment of the entire cost of the project with appropriate interest. The Colorado River Commission is ready to initiate contract negotiations immediately and will enter into the necessary repayment contracts to repay the total cost of the project, including the appropriate interest. Also, the commission is ready and able to accept the project for operation and maintenance, as called for in the legislation being considered here. The commission will contract with local water using agencies for water service, which contracts in total will equal the contractual obligations of the commission to the United States. These contracts will be prepared in a form satisfactory to the Secretary of the Interior. Therefore, as you see, Mr. Chairman, the United States will have complete assurance of full repayment of the works by the end of the 50-year period following initiation of service from the project. The commission accepts without question the policy of the Department of the Interior with regard to obtain-

ing suitable contracts with the water using agencies prior to initiation of construction of the project.

Southern Nevada, through the Colorado River Commission, has been receiving power from the Colorado River system since 1936. The first power received was from Hoover Dam and up to the end of this operating year we will have paid into the Federal treasury, part of which is placed in the account of the Colorado River Development Fund, a total of \$14,500,000 for falling water and \$11,600,000 for fixed charges to amortize our portion of the power facilities installed at Hoover Dam, making a total payment of \$26,100,00 for power and energy from Hoover Dam. This project will make possible our area receiving some benefits for which the Colorado River Development Fund was established and accumulated under the Boulder Canyon Act.

We are also a large purchaser of power from the Parker-Davis power system of the Federal Government and we have just recently initiated service as a customer of the Upper Colorado River project.

The supplement, dated April 1965, to the report on the southern Nevada water supply project, as prepared by the Department of the Interior, was premised on the current interest rate for financing Federal reclamation projects of  $3\frac{1}{8}$  percent. The Colorado River Commission expects to, and also desires to pay a fair interest rate on the funds advanced by the United States in the construction of the project. I have been given to understand that consideration is being given to the use of an interest rate of 4 percent in computing the repayment obligation of the commission.

If the commission must pay this rate, of course, it will. However, we feel that we should be treated in the same manner as all other municipal and industrial functions of other reclamation projects and that the  $3\frac{1}{8}$  percent interest rate should be used on this project.

In closing this testimony I would like to reiterate the extreme urgency of immediate final design and construction of the southern Nevada water supply project in order that water service may begin sometime during the summer of 1968. Therefore, I again urge immediate favorable consideration by your committee to this so vitally needed piece of legislation to authorize our southern Nevada water supply project.

Mr. Chairman, I would like to submit for the record the following testimony, resolutions, telegrams, and letters from all of the political entities and others in the Las Vegas and El Dorado Valleys in support of S. 32.

First, I wish to present for the record a statement of Mr. Elmo J. DeRicco, director of the Department of Conservation and Natural Resources of the State of Nevada.

Second, I submit for the record a resolution by the Colorado River Commission of Nevada officially urging your early, favorable consideration of the legislation before you today.

Next, I submit for the record, a letter from Hugh Shamberger, whom I am sure you all know, and know well. Mr. Shamberger is president of the National Reclamation Association and was formerly director of the Department of Conservation and Natural Resources of the State of Nevada. Mr. Shamberger is now associate director of the Desert Research Institute.

Next, I submit for the record a letter from Mr. Oran Gragson, mayor of the city of Las Vegas.

Next, a telegram to Senator Bible from Mr. William Taylor, mayor of North Las Vegas.

Next, a letter signed by the city manager, city of Boulder City, in support of the project.

Next, I wish to submit a letter from Mayor William Byrne of the city of Henderson.

I submit for the record a letter signed by Mr. James Ryan, chairman of the Clark County Board of Commissioners, speaking for that body in support of the project.

I submit letters from the Las Vegas Chamber of Commerce, the Henderson Chamber of Commerce, and the Boulder City Chamber of Commerce, all urging early construction of the southern Nevada water supply project.

Next, I submit a letter from Mr. Herbert Grier, speaking in behalf of the Southern Nevada Industrial Foundation in support of the project.

I wish to submit a resolution from Basic Management, Inc., who now own facilities for transporting water from Lake Mead into the Henderson area. That company fully endorses this project and lends whatever support it can to its early construction.

And finally, I wish to submit letters from the Nevada Power Co. and the Southwest Gas Corp., two private utility companies serving the power and gas requirements of southern Nevada, both urging early favorable consideration to the legislation before you.

Again, Mr. Chairman, I wish to thank you and the committee for allowing me to appear before you today. We are grateful that you are taking time from your busy schedule to consider this legislation so important to Nevada.

Senator BIBLE. Let me say that I am delighted to take that time. I consider this the No. 1 project, at least, this current session of the Congress and I am not going to rest until it is enacted into law.

I would be very happy to hear anything that the very distinguished commissioner of the Colorado River Commission might like to add. He is a lifelong friend of mine, a very distinguished Nevadan, and I am also glad to see him back in the Nation's Capitol.

Ted Lawson?

Mr. LAWSON. Just that we need it.

Senator BIBLE. Thank you.

The various resolutions, telegrams and letters will be placed in the record at this point.

(The communications referred to follow:)

STATEMENT OF ELMO J. DERICCO, DIRECTOR, DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES, STATE OF NEVADA

Mr. Chairman and members of the committee, my name is Elmo J. DeRicco. I am director of the Department of Conservation and Natural Resources of the State of Nevada. I have held this position since January 1 of this year. Prior to my appointment to director, I served as State engineer from 1962 to 1965, and as assistant State engineer from 1957 to 1962, and as a field engineer and deputy State engineer from 1949 to 1957.

I have been closely associated with the development of ground water supplies in the Las Vegas artesian basin for over a decade and, in addition, I have had the good fortune of being exposed to the knowledge of many years of experience of my predecessor, Hugh A. Shamberger.

During my term as State engineer the growing problem of water supply in Las Vegas Valley compelled us to change the entire concept of administration of this vital ground water resource. The ever-increasing concentration of development in areas of critical ground water supply threatened to cause immediate failure of many of the wells in these areas.

Through the efforts and assistance of the Desert Research Institute of the University of Nevada, the U.S. Geological Survey, the department of conservation and natural resources, the Las Vegas Valley Ground Water Board, and our Governor, Grant Sawyer, the Division of Water Resources instituted a program of ground water administration in the valley which to the best of our knowledge has never been attempted successfully anywhere in the world. All ground water development in the valley today is scientifically analyzed by the use of an electric analog computer.

Our program provides for the development of the major water supplies in areas where they will cause the least detrimental effect on existing areas of withdrawal. In order to comply with our program, the Las Vegas Valley Water District and the city of North Las Vegas, the two major water suppliers in the basin, have been compelled to develop their water supplies at points which are several miles from their areas of use. All applications for water are carefully weighed to determine if they are really needed, and wherever possible, applicants are required to obtain their service from the major water suppliers.

It is not my intent to bore you with the details of our administrative problems, but I feel that it is important for your committee to know that we in Nevada have left no stone unturned in our efforts to prevent disaster in the water crises with which we are faced in Las Vegas Valley, but in spite of our efforts, we cannot overcome the fact that we are presently withdrawing 3 gallons of water from our ground water aquifers for every gallon they receive in recharge and that we can see no relief in the ever-increasing demand for water supply. For a short time our administrative efforts will delay the day of disaster in the critical areas of the basin, but we can only prevent disaster if immediate steps are taken to import water from Lake Mead.

In the interests of the welfare of the people in Las Vegas Valley and the overall effect on the economic structure of our entire State, I urgently request that you take favorable action on this bill.

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#### RESOLUTION

Whereas the Colorado River Commission was created by an act of the Legislature of the State of Nevada in 1935 to, among other things, receive, protect, safeguard, and hold in trust for the State of Nevada all water, water rights, and all other rights, interests, or benefits in and to the waters of the Colorado River; and

Whereas that act, as amended, authorized the Commission to request on behalf of the State of Nevada from the Secretary of the Interior of the United States the installation of water service facilities as the commission in its discretion may deem necessary or convenient to meet and serve the future water requirements of the State of Nevada; and

Whereas that act, as amended, authorized and directed the commission to negotiate for and obtain and enter into and execute and cause to be executed such contracts, documents, and instruments as are appropriate and requisite to carry such requests into effect; and

Whereas that act authorized the Commission under suitable contract, or contracts, with the Secretary of the Interior to accept transfer of the care, operation and maintenance of such water service facilities; and

Whereas the economy and growth of Las Vegas Valley is being placed in grave jeopardy by the alarming overdraft of its valuable underground basin; and

Whereas the U.S. Bureau of Reclamation has planned the southern Nevada water supply project, which project includes the necessary facilities to bring water from Lake Mead into Las Vegas Valley; and

Whereas Nevada has been allocated a total of 300,000 acre-feet from the Colorado River for use in Nevada; and

Whereas this water must be placed into use in the area by 1968 to meet the water needs of the area and to safeguard against the ruination of our valuable underground basin: Now, therefore, be it

*Resolved*, That the commission urges the Senate Subcommittee on Irrigation and Reclamation of the Senate Committee on Interior and Insular Affairs to give early favorable consideration to passage of S. 32, a bill coauthored by Senators Alan Bible and Howard Cannon to authorize the southern Nevada water supply project; be it further

*Resolved*, That the Commission is willing and anxious to enter into the necessary repayment contract with the United States to repay the entire cost of the project including the appropriate interest, and in turn will enter into appropriate contracts with the water using agencies satisfactory to the Secretary of Interior; be it further

*Resolved*, That the commission authorizes its administrator, Mr. Pat Head, to present any testimony and make any statements necessary for the commission in support of S. 32; be it further

*Resolved*, That the commission wishes to express to the chairman and to the Subcommittee on Irrigation and Reclamation its sincere appreciation for the opportunity afforded the local agencies and the commission to appear before it to present testimony in support of this so vitally needed project; and be it further

*Resolved*, That a copy of this resolution be sent to Senator Clinton P. Anderson, chairman of the Senate Subcommittee on Irrigation and Reclamation, to Governor Grant Sawyer, to Senators Alan Bible and Howard Cannon, and to Congressman Walter Baring.

COLORADO RIVER COMMISSION OF NEVADA,  
R. B. GRIFFITH, *Chairman*.

Attest:

C. F. NEUMANN, *Secretary*.

UNIVERSITY OF NEVADA,  
DESERT RESEARCH INSTITUTE,  
CENTER FOR WATER RESOURCES RESEARCH,  
*Reno, Nev., May 11, 1965.*

SENATOR CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation, U.S. Senate,  
Washington, D.C.*

DEAR SENATOR: Your committee is today receiving testimony in support of the southern Nevada water supply project to place to beneficial use the waters of the Colorado River to which Nevada is entitled. I wish to take this opportunity to lend by wholehearted support in endorsement to that project and I urge early favorable consideration for its authorization and construction.

I am now associate director in charge of water research for the Desert Research Institute, an arm of our State university at Reno. I was director of the Department of Conservation and natural resources, a position I held from the time of the creation of that department in 1957 until January of this year. Prior to that time I was in the State engineer's office, starting in 1935, and from the period 1951 to 1957 I was State engineer.

During my position as director of the department of conservation and natural resources, and while in the State engineer's office, I was intimately acquainted with the rapid ground water development in the Las Vegas Valley, beginning in 1936 when I first inventoried all the wells that had been drilled. The serious overdraft now occurring in that groundwater basin will be covered in detail by witnesses before you today. However, I wish to take this opportunity to add my opinion that the continuation of the present groundwater overdraft will place this vital resource in a perilous condition if that overdraft is not reduced by the year 1968.

It is imperative that a pipeline be constructed from Lake Mead into the Las Vegas Valley and Eldorado Valley at the earliest possible time. I feel the best possible plan has been set forth by the U.S. Bureau of Reclamation in its report entitled "The Southern Nevada Water Supply Project."

I appreciate this opportunity to convey to you my endorsement of the legislation before you identified as S. 32.

Sincerely yours,

HUGH A. SHAMBERGER, *Associate Director*.

CITY OF LAS VEGAS, NEV.,  
May 10, 1965.

SENATOR CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation,  
New Senate Office Building,  
Washington, D.C.*

DEAR SENATOR ANDERSON: In regard to the May 20, 1965, hearings before the Senate Interior Irrigation and Reclamation Subcommittee on S. 32 southern Nevada water supply project authorization, please be advised the city of Las Vegas strongly supports this project. Water supply development in this area is vital to the continued growth and development of the city of Las Vegas.

The population of Las Vegas has more than doubled since the 1960 census and projections to 1970 indicate an increase of 13,500 per year based on the growth of the existing economic base.

Engineering studies have shown that continued overdrafting of our ground water supply results in depletion of the underground basin at a rate which has become critical, making it imperative to bring Lake Mead water to this area to insure continued population growth and industrial expansion.

Very truly yours,

ORAN K. GRAGSON,  
*Mayor, City of Las Vegas.*

[Telegram]

NORTH LAS VEGAS, NEV.,  
May 7, 1965.

HON. ALAN BIBLE,  
*U.S. Senate,  
Washington, D.C.:*

It is imperative that prompt consideration and action be taken on S. 32 the southern Nevada water supply project authorization. Our present underground aquifers cannot sustain the tremendous population growth North Las Vegas has experienced the last 5 years. Favorable consideration by the Interior Irrigation and Reclamation Subcommittee would be greatly appreciated by all the people of North Las Vegas.

Sincerely,

WILLIAM TAYLOR,  
*Mayor, North Las Vegas, Nev.*

BOULDER CITY, NEV., May 12, 1965.

SENATOR CLINTON P. ANDERSON,  
*Chairman, Subcommittee on Irrigation and Reclamation,  
U.S. Senate, Washington, D.C.*

DEAR SENATOR ANDERSON: The city of Boulder City, Nev., is vitally interested in the passage of legislation which would authorize construction of the southern Nevada water supply project to provide additional water for the municipalities, water districts, and Federal agencies located in Clark County, Nev.

While those entities located within the Las Vegas Valley have access to underground aquifers which supply a portion of the water needs of the area, Boulder City is completely dependent upon surface water runoff for its needs. Our present supply (provided for under terms of the Boulder City Act of 1958, Public Law 85-900) is limited to a maximum of 3,650 gallons per minute pumped from Lake Mead.

Our population has increased approximately 25 percent in the past 5 years. Projections by our planning consultants indicate a similar or greater percentage increase in the next 5 years. Consequently we must begin work now to provide additional water necessary to accommodate this growth. As a part of our overall water picture, the Bureau of Reclamation has just completed a study financed by the city indicating that our immediate need is for an additional 20 million gallons of storage capacity. It is anticipated that such a facility would be designed and constructed to tie in with the southern Nevada water project.

The city council has made commitments to the Colorado River Commission of Nevada to participate in the project, and has indicated on several occasions its willingness to enter into a repayment contract for our share of the cost of development.

We urge that the subcommittee give early and favorable consideration to legislation authorizing this project, which is of vital importance to the southern Nevada region in general and to Boulder City in particular.

Very truly yours,

W. F. COTTRELL, *City Manager.*

CITY OF HENDERSON, NEV., *May 13, 1965.*

SENATE SUBCOMMITTEE ON IRRIGATION AND RECLAMATION,  
U.S. Senate, Washington, D.C.  
(Attention Senator Clinton P. Anderson, Chairman).

GENTLEMEN: The city of Henderson joins the other local and State agencies in urgently requesting that favorable consideration be given in this session of Congress to the authorization and construction of our vitally needed southern Nevada water supply project.

The only water available to the city of Henderson at the present time is from Lake Mead under contract with Basic Management, Inc., for 5 million gallons per day, or about 5,600 acre-feet per year. This amount is not sufficient to supply all of the present needs of the city and falls far short of supplying the near-future requirements to meet our expanding population within our city.

The city of Henderson has determined that the southern Nevada water supply project, planned and proposed by the Bureau of Reclamation of the U.S. Department of the Interior, is a sound and logical means of supplying the much-needed water to the city as well as to other agencies within the proposed project area.

A great deal of the Las Vegas Valley water requirements are now being met from an alarming overdraft of our valuable ground water basin. Although the city of Henderson does not enjoy the underground resources available to most of the valley, we look with alarm and concern on the situation that will exist in the entire valley in the very near future if this mining of water is not discontinued.

The city of Henderson, therefore, lends all the support at its command to the southern Nevada water supply project authorization and wishes the committee to know that it will gladly accept water delivered to it from the southern Nevada water supply project under suitable conditions and contracts with the Colorado River Commission of Nevada and, in turn, will bear its proportionate share of the financial burden of the construction, operation, and maintenance of the works constructed under this project.

Sincerely,

WM. B. BYRNE, *Mayor.*

COUNTY OF CLARK, NEV.,  
*Las Vegas, Nev., May 12, 1965.*

SENATOR CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation,*  
*U.S. Senate, Washington, D.C.*

DEAR SENATOR ANDERSON: The Clark County Board of Commissioners, of which I have the pleasure of serving as chairman, joins the other agencies in urging favorable action by your committee to authorize the very urgently needed southern Nevada water supply project.

Over the past two decades Clark County has enjoyed a phenomenal growth in its population and economy. In 1950 the population of Clark County was 48,300. The population grew from 120,000 in 1960 to the present estimate of over 250,000. The enrollment in our schools has more than doubled since 1960. We cannot, of course, expect this phenomenal growth to continue. However, I believe it is safe to assume that our population will be in the order of 350,000 people before the year 1970.

We are fortunate in having a large underground basin lying beneath the Las Vegas Valley to meet our water requirements up to this time. However, we are placing that valuable resource in grave jeopardy by the overdraft that is presently taking place. In 1964 we drew about 78,000 acre-feet of water from our underground basin, while at the same time it is estimated that our average annual recharge is only about 30,000 acre-feet. Therefore, last year we took from this underground basin about three times the water returned to the basin.

We have been informed by experts that we can expect an annual draft on our underground basin of over 100,000 acre-feet by 1970 if supplemental water is

not made available to the area. These same experts inform us that this drastic overdraft may well overextend the capabilities of our underground basin to the extent that this basin may no longer be available to us.

This means that if our economy is to be sustained and allowed to continue its growth we must have import facilities as planned in the southern Nevada water project before 1970. In fact, we believe it imperative that these facilities be constructed in order that water be available from these facilities by the summer of 1968.

The Clark County Board of Commissioners pray that the way will be cleared for early construction of the urgently needed southern Nevada water supply project through its authorization in this session of Congress.

We appreciate this opportunity to make our views known to your committee as you receive testimony on and consider the legislation before you.

Sincerely yours,

JAMES G. RYAN,  
*Chairman, Board of County Commissioners.*

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LAS VEGAS CHAMBER OF COMMERCE,  
*Las Vegas, Nev., May 12, 1965.*

HON. CLINTON P. ANDERSON,  
*U.S. Senator, Chairman, Subcommittee on Irrigation and Reclamation, U.S. Senate, Washington, D.C.*

DEAR SENATOR: The Las Vegas Chamber of Commerce joins the local water using agencies, the Colorado River Commission, the State of Nevada, and other interested organizations in southern Nevada in giving its wholehearted endorsement to S. 32, the bill to authorize our southern Nevada water supply project. Information and data available to us demonstrate without question that this project must be in operation prior to 1970 if the Las Vegas Valley is to be spared a catastrophic deterioration in its economy.

Where our population in 1950 was 48,300, our population today is estimated to be 250,000 people. We have been very fortunate in having a very valuable underground resource available to us to draw upon to sustain our growing economy. However, that resource is being dangerously overdrafted at the present time. It is estimated by experts that the recharge to this basin is in the order of 25,000 to 30,000 acre-feet. When you consider that in 1964, 78,000 acre-feet of water were drawn from this underground basin, you can readily see that we are mining this resource at a dangerous rate.

The time has come when the water allocated to Nevada from the Colorado River must be put to beneficial use in order to not only serve our present economy but to provide for our ever-expanding population and economy.

The U.S. Bureau of Reclamation has done an outstanding job in preparing a plan for the construction of facilities to convey water from Lake Mead into Las Vegas Valley. This is the project that is before you today for consideration. We believe that it is a well-engineered plan and has economic justification far beyond that shown in the report by the Bureau of Reclamation, which, in itself, indicates a very satisfactory benefit-to-cost ratio.

The chamber of commerce prays that your committee will give early consideration to S. 32 in order that this project may be placed into operation at the earliest possible date.

We wish to express our sincere appreciation for this opportunity to make our views known to your committee.

Very truly yours,

ROBB C. JOHNSON, *President.*

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BOULDER CITY CHAMBER OF COMMERCE,  
*Boulder City, Nev., May 14, 1965.*

Senator CLINTON P. ANDERSON,  
*Chairman, Subcommittee on Irrigation and Reclamation,  
U.S. Senate, Washington, D.C.*

DEAR SENATOR: The city of Boulder City has enjoyed over the past many years an adequate water supply from Lake Mead. The facilities making this water supply possible were constructed by the United States during the building of Hoover Dam. The growth of our city is now taxing those facilities to their full capacity, and additional water is urgently needed to meet the demand.

Our chamber wishes to take this opportunity to urgently request early favorable consideration of your committee bill S. 32, a bill to authorize southern Nevada water project.

We fully endorse this plan as prepared by the Bureau of Reclamation as the best means of satisfying future requests of Boulder City, Eldorado Valley, and the large metropolitan area in Las Vegas Valley.

We appreciate this opportunity to make our views known to you and your committee.

Cordially yours,

JIM COREY, *President.*

HENDERSON, NEV., CHAMBER OF COMMERCE,  
May 13, 1965.

Senator CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation,  
U.S. Senate, Washington, D.C.*

DEAR SENATOR ANDERSON: The Chamber of Commerce of Henderson has been concerned over the water supply available to the city of Henderson during the past few years. Our population continues to expand while our water supply available to us remains static. Our only source of supply at the present time is from the Basic Management, Inc., facilities bringing water from Lake Mead. Our entitlement under those facilities is for less than 6,000 acre-feet annually.

Our present requirements for water are far above the water to which we are entitled. We are living on borrowed time now. It is imperative that additional facilities be constructed to bring the urgently needed water from Lake Mead into this area if we are to not only meet our potential growth but to meet our present population and economy.

The Henderson Chamber of Commerce joins all the local and State organizations communicating with you today in wholehearted support and endorsement of S. 32, a bill to authorize the southern Nevada water supply project. The water to which Nevada is entitled under the Colorado River compact and the recent Supreme Court decision in the *Arizona v. California* suit must be put to use if the Las Vegas Valley, of which we are a part, is to avoid grave deterioration of its economy.

I and the chamber of commerce appreciate the opportunity you are affording us and the other local people in presenting to you our wholehearted support of the legislation before you.

Sincerely yours,

RONALD J. LANGFORD, *President.*

SOUTHERN NEVADA INDUSTRIAL FOUNDATION, INC.,  
Las Vegas, Nev., May 12, 1965.

Senator CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation,  
U.S. Senate, Washington, D.C.*

DEAR SENATOR: Water is the most precious commodity any community can own and, especially, in an arid region such as southern Nevada. Without it life just cannot exist.

Southern Nevada, in the early days, was blessed by an abundant supply of underground water. It flowed from artesian wells which were completely adequate for the small population of the southern Nevada area. Las Vegas was the only population center of southern Nevada of any great proportions, it being a railroad town and existing on this industry for its life. There were few water problems then because the population remained somewhat static until 1930.

During the construction of Hoover (Boulder) Dam, starting in 1930, the area was subjected to mild growth which, while not taxing the water supply, did give indication that, if the expansion continued, Las Vegas would, sometime in the future, suffer from lack of water.

Following the completion of the dam, the anticipated decline in population failed to materialize and the southern Nevada sector continued to grow, putting a further strain on the water supply.

Shortly before World War II, the Army Air Force set up the aerial gunnery school north of Las Vegas, and, while the water company was not serving the

base, the water table in the valley was affected by the wells which were sunk to supply water for the base.

At the start of the war, basic magnesium plant was established at Henderson, and it was this project which brought about additional water for the valley through a pipeline from Lake Mead. This gave hope that the development of the valley area would not be hampered by a lack of water.

On July 1, 1954, the Las Vegas Valley Water District took over the distribution system from the Union Pacific subsidiary which had supplied water to the citizens since the founding of the town. At that time, water consumption in the valley was 5,182 million gallons per year. Most of this was supplied from the artesian wells because it was cheaper to provide this water than get it from the Lake Mead pipeline. However, the water district did construct a pipeline from Henderson to Las Vegas and the water from the lake was used to augment the underground supply.

In the 10 years from 1954 to 1964, the growth of the southern Nevada area has been phenomenal, and this growth was reflected in the use of water. In the year 1964 the water district supplied 13,670 million gallons of water to the populace, a consumption of nearly three times that of 1954.

While it is hard to predict what will happen by 1970, just 5 years hence, the best estimates of engineers who have studied the problem are that water consumption in the Las Vegas Valley will approximate some 160,000 acre-feet per year. This would be an increase of some  $1\frac{1}{2}$  times the amount now being used.

This water must come from somewhere. The underground table has been declining rapidly since 1950, and additional burdens on the supply will almost completely deplete the available underground water unless new sources are found.

Both time and water are running out. That is why the southern Nevada water project is so important. Without this project it is entirely conceivable that the area can dry up and blow away on the wings of the dust devils which are prevalent in some of the desert areas surrounding the valley.

The project is imperative, also, if the plans for future development in Eldorado Valley are to be carried out. A program, which has been initiated by the Colorado River Commission of Nevada is entirely dependent on availability of water. The water is available in Lake Mead, but delivery of that water to the ultimate consumer is a problem which might be greater than the resident of Nevada can solve without help from the Federal Government.

A southwest water project is a necessity if all of this arid land in this section is to be put to beneficial use. However, the need for water in southern Nevada is acute right now, and great harm would result if this southern Nevada project is not completed as rapidly as possible.

Sincerely yours,

HERBERT E. GRIER, *President.*

RESOLUTION OF THE BOARD OF DIRECTORS OF BASIC MANAGEMENT, INC.

Whereas bills have been introduced in the Congress of the United States for authorization of the southern Nevada water supply project to be constructed by the Bureau of Reclamation (S. 32 and H.R. 2020) ; and

Whereas Basic Management, Inc., and its industrial stockholders own the only existing substantial works for the diversion and transmission of water from Lake Mead together with appurtenant industrial and municipal water rights ; and

Whereas said works and water rights were purchased from the United States after their construction for defense purposes during World War II ; and

Whereas the capacity of the said works is not sufficient to meet the Nevada demands for Lake Mead water this year or in the future ; and

Whereas the southern Nevada water supply project is greatly needed to meet water requirements in the Las Vegas Valley and the costs of said project can be fully reimbursed by water users without financial assistance from the United States ; and

Whereas under alleged authority of the Boulder Canyon Project Act (45 Stat. 1057) the Department of the Interior asserts the power to limit the intra-state priority of existing rights to the use of Colorado River water in Nevada to the maximum use in any year prior to January 1, 1964 ; and

Whereas any such limitation on valid existing rights purchased from the United States would be taking of property without due process of law and without just compensation ; and

Whereas the Secretary of the Interior has testified previously, as follows:  
 "I think that the traditional law of prior appropriation which has been one of the great resource laws of the West and developed by the courts in most of the States of the West over a period of years, makes sense in terms of equity and logic and commonsense as far as water development within any State is concerned. As to applying it intrastate, I don't think any one has any quarrel with this" (Hearings on S. 1658, Committee on Interior and Insular Affairs, U.S. Senate, 88th Cong., April 16, 1964, p. 465): Now, therefore, The Board of Directors of Basic Management, Inc., does resolve as follows:

1. That the Congress of the United States enact into law legislation for the construction of the southern Nevada water supply project at an early date; and
2. That such legislation contain an appropriate provision requiring the Secretary of the Interior to recognize the intrastate priority of existing water rights held under certificates of appropriation issued by the State of Nevada.

Adopted May 18, 1965.

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NEVADA POWER CO.,  
*Las Vegas, Nev., May 13, 1965.*

Senator CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation,  
 U.S. Senate, Washington, D.C.*

DEAR SENATOR ANDERSON: I have the pleasure of serving as president of the Nevada Power Co., located in Clark County, Nev. In that capacity and for the company I wish to take this opportunity to inform you that the Nevada Power Co. wholeheartedly endorses and supports S. 32 to authorize the construction of the southern Nevada water supply project. I further implore you to give early favorable consideration to the legislation before you in order that this project may be placed under construction immediately. This project is needed at least by the year 1968 if our wonderful community with its outstanding climate is going to continue to prosper.

The company actually came into being in about 1906 under a different name. It became the Southern Nevada Power Co. in 1929, which name was changed in 1961 to its present name, Nevada Power Co. Since 1950 the growth of this company has been phenomenal, as could be expected if it was to meet the rapid growth of the area. Our electric energy requirements have averaged slightly over 18 percent increase per year for the past 15 years which, I believe, is a true index of the astounding growth and increase in wealth of our community.

I appreciate this opportunity to make known to you and your committee our wholehearted support of the southern Nevada water supply project.

Sincerely yours,

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ELMER JOHNSON, *President.*

SOUTHWEST GAS CORP.,  
*Las Vegas, Nev., May 14, 1965.*

Hon. CLINTON P. ANDERSON,  
*Chairman, Senate Subcommittee on Irrigation and Reclamation, U.S. Senate,  
 Washington, D.C.*

DEAR SENATOR ANDERSON: Southwest Gas Corp. wishes to join all the other local organizations in support of the legislation before your committee today to authorize the southern Nevada water supply project. My family has resided in Las Vegas for a number of years. We have seen the fantastic growth that has taken place in our population and in our economy. For many years we have been very concerned over the continued overuse of our valuable underground water resource. The time has come when the overdraft of our underground basin must cease.

The southern Nevada water supply project will bring part of Nevada's share of the Colorado River into this area. Water from the Colorado River is the only means by which we may not only save our present economy but provide for the future of our area.

Southwest Gas Corp. was formed in 1931, but it was not until 1954 that the company introduced natural gas into southern Nevada to meet the growing needs of Las Vegas Valley and surrounding areas. Over the past 8 years our invest-

ment has increased approximately 17 percent per year to a total of \$22,500,000 to meet the expanding needs of our community.

We urge with every means at our command that your committee give early and favorable consideration to S. 32.

Sincerely yours,

W. M. LAUB, *President.*

Senator BIBLE. Mr. Head, let me ask you this question concerning the interest rate. You make mention that you would like to have the same interest rate as the Water Supply Act of 1958 and, of course, I think it is very clear that I would too.

You also make reference to other comparable projects. Have you any projects in mind that we could look to for guidance in securing an interest rate that is a little more favorable than the 4-percent rate?

Mr. HEAD. Mr. Chairman, yes, I could name quite a few I have worked on myself. There is a project before Congress at this time for the Central Valley, the Trinity Division and Central Valley project and they are all done on the basis to the allocation, to the municipal industrial function and the interest-rate formula is used on those that I speak of here today.

Senator BIBLE. They always tell me when I ask this question of people in reclamation that they also have built into it certain joint costs that are not built in here. I do not know and this is the thing I asked of Commissioner Dominy a short time ago.

Mr. HEAD. Yes, I believe, Mr. Chairman, it comes down to whether you consider this project as part of the Colorado River system and part of the project development that was intended in the Boulder Canyon Act itself and I spoke of the Colorado River development fund that was set up to aid in the investigation and construction of the reclamation projects.

My personal opinion is this is part of the development of the Colorado River system that was called for in the canyon south.

Senator BIBLE. If that is true, then there should be a certain factor for joint cost, whatever that factor is. I do not know how you determine that factor, but there must be some factor that goes in there for general cost.

Mr. HEAD. There certainly must be.

Senator BIBLE. I see. Well, thank you, very much, Mr. Head. That is a very, very able presentation. I want to particularly compliment you on the manner in which you have accumulated all that testimony and presented it. It is an outstanding job.

Mr. HEAD. Thank you, Mr. Chairman.

Senator BIBLE. Our next witness is Mr. Stewart, president of the Las Vegas Valley Water District.

#### STATEMENT OF GRANT STEWART, PRESIDENT, LAS VEGAS VALLEY WATER DISTRICT

Mr. STEWART. Thank you, Mr. Chairman.

I am Grant Stewart, president of the Las Vegas Valley Water District. My district covers nearly all of the Las Vegas Valley floor except the areas served by the city of North Las Vegas and by the city of Henderson.

Last year, we served over 30,000 customers a total of 42,000 acre-feet of water. Nearly all but about 6,000 acre-feet of water made

available to our customers came from the ground water basin underlying Las Vegas Valley. It can be reliably reported that over 78,000 acre-feet of water was pumped from the underground basin during 1964 while our ground water basin recharged only about 25,000 acre-feet.

We, of all people, are certainly aware of the damaging effects of this tremendous overdraft of our underground basin. However, this has been absolutely necessary if we were to meet the water requirements of the area.

To this point, except in a few isolated cases, our underground basin has not been damaged from this overdraft. However, we cannot continue the present use of this basin to meet our expanding population.

My family and I are all native Nevadans. We have had a wonderful life in Nevada, especially in the Las Vegas Valley area. I, personally, have been a resident of Las Vegas for 40 years. I look forward to my family, my children and their families having the wonderful life that I have had in the area. That, of course, cannot occur unless additional water is brought into the area.

The southern Nevada water supply project, as planned so well by the Bureau of Reclamation, furnishes the additional means of meeting the near future water requirements of Las Vegas Valley.

The Las Vegas Valley Water District fully endorses the operation and maintenance of the facilities by the Colorado River Commission. We are only too willing to enter into the necessary repayment contracts with the Colorado River Commission to assure the repayment of our share of that project with the commission to take and pay for up to 90,000 acre-feet annually at the first stage of the southern Nevada water supply project.

Mr. Chairman, and members of the committee, our district appreciates very much the opportunity to appear before you in support of S. 32, the legislation before you to authorize the southern Nevada water supply project.

We urge your early, favorable consideration to this legislation in order that this project may be constructed and placed in operation by 1968 in order to alleviate the tremendous overdraft of our ground water basin and, in turn, assure its optimum use for many years to come.

Although you are hearing today testimony with regard to the southern Nevada water supply project, our district is also very much interested and concerned with providing water in this area when the 300,000 acre-feet available from the Colorado River no longer will meet our needs.

We are fully in accord with the provisions in the legislation being considered in Congress to authorize the Lower Colorado River project and the studies to provide the means for import of large amounts of water into the Southwest.

We wish to join all the agencies in the Southwest involved in the large-scale plans to bring about such a project.

Mr. Chairman, I might make one comment on the question that was asked about the overdraft of the basin. All of our wells now are down to the 1,000-foot range in depth. Several years ago the free-flowing artesian wells were only 400 or 500 feet. Our lift in some wells has dropped from that to where we are lifting 100 feet. We are

lifting in some wells, 300 and 350 feet in the same area. We have had a few wells that the one time could pump at the rate of 2,500 gallons per minute that are now down to about 1,200 gallons per minute because that is all the recharge that particular well is receiving from the underground basin.

As to how much water underground, nobody can really tell but the water table has definitely dropped in the whole valley in the last several years.

Senator BIBLE. I am glad to have that additional information, Mr. Stewart. I want to thank you for your very fine statement and particularly the evidence of interest that you have shown coming from Las Vegas here to make this presentation which again underscores the need and urgency in this project.

There are no further witnesses.

The hearing stands adjourned.

(Thereupon, at 11:50 a.m., the subcommittee adjourned, subject to the call of the Chair.)



## APPENDIX



### Assembly Joint Resolution No. 18

Urging the Congress of the United States to enact at this session the necessary legislation to begin the Southern Nevada water supply project.

WHEREAS, The rapid growth of population in Clark County, Nevada, during the past twenty-five and especially during the past ten years has created a need for water far in excess of the natural ground water supply, leading to a rate of withdrawal more than double the rate of recharge and consequent depletion of the artesian reservoir; and

WHEREAS, The future development of the entire surrounding area and even the maintenance of such important federal installations as Nellis Air Force Base and the Nevada Atomic Test Site depend upon the provision of adequate water from some other source; and

WHEREAS, Additional water can be made available only from Lake Mead by the installation of adequate pipeline and pumping facilities; and

WHEREAS, Nevada's right to a share of the water from this source has been determined by the Supreme Court of the United States; and

WHEREAS, The economic feasibility and favorable ratio of benefit to cost of the Southern Nevada water supply project are shown by the 1963 report to the Bureau of Reclamation; and

WHEREAS, The need and worth of this project have been further recognized by its inclusion in the southwest Pacific water plan proposed by the Secretary of the Interior; and

WHEREAS, By the nature of this project it can be completed and used independently of the other elements of this plan; and

WHEREAS, Necessary legislation for the cooperation of the State of Nevada in the project has been enacted as Chapter 348, Statutes of Nevada 1963, and Chapter 5, Statutes of Nevada 1964; and

WHEREAS, The Congress of the United States had before it at the last session and has before it at this session, as Senate Bill 32, legislation to authorize the Southern Nevada water supply project; and

WHEREAS, The ever more critical need for immediate action is shown by a recent news release of the Department of the Interior showing that in December 1964, ground water levels in the Las Vegas area reached a record low; now, therefore, be it

RESOLVED BY THE ASSEMBLY AND SENATE OF THE STATE OF NEVADA, JOINTLY, That this Legislature respectfully urges the Congress of the United States, at this session, to enact the necessary legislation to begin the Southern Nevada water supply project; and be it further

RESOLVED, That certified copies of this Resolution be prepared and transmitted forthwith by the Legislative Counsel to the Secretary of the Interior and to each Member of the Nevada Congressional Delegation.

PASSED BY THE SENATE  
March 16, 1965

PASSED BY THE ASSEMBLY  
February 12, 1965

*Paul Barrett*  
President of the Senate

*Wm. D. Sullivan*  
Speaker of the Assembly

*Leah A. Armstrong*  
Secretary of the Senate

*Nathan T. Hurst*  
Chief Clerk of the Assembly

*Grant Sawyer*  
Governor of the State of Nevada

