

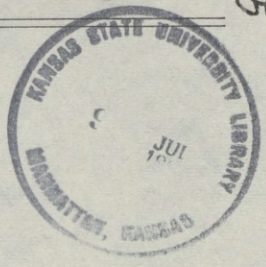
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AUBURN-FOLSOM SOUTH UNIT OF THE CENTRAL VALLEY PROJECT

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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. 599

A BILL TO AUTHORIZE THE SECRETARY OF THE INTERIOR TO
CONSTRUCT, OPERATE, AND MAINTAIN THE AUBURN-FOLSOM
SOUTH UNIT, AMERICAN RIVER DIVISION, CENTRAL VALLEY
PROJECT, CALIFORNIA, UNDER FEDERAL RECLAMATION LAWS

MARCH 31, 1965

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



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AUBURN-FOLSOM SOUTH UNIT, CALIFORNIA

WEDNESDAY, MARCH 31, 1965

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

The subcommittee met, pursuant to call, at 10 a.m., in room 3110, New Senate Office Building, Senator Clinton P. Anderson (chairman of the subcommittee) presiding.

Present: Senators Anderson, Moss, Kuchel, Allott, and Jordan of Idaho.

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

Senator ANDERSON. This is an open public hearing on S. 599, a bill sponsored by our able colleague on this committee, Senator Kuchel, who is the ranking minority member, for himself and the junior Senator from California, Senator Murphy, to provide for the construction and operation of the Auburn-Folsom south unit, Central Valley project, in California.

Auburn-Folsom is a part of the gigantic Central Valley project and would provide urgently needed water for agricultural, municipal, and industrial uses, power, flood control, recreation, and fish and wildlife enhancement for that rapidly growing area.

I will direct that the text of S. 599 and the favorable reports of the Department of the Interior and the Bureau of the Budget be made a part of the record at this point. It is noted that the Interior Department's report recommends certain amendments to the bill.

(The bill and report follow:)

[S. 599, 89th Cong., 1st sess.]

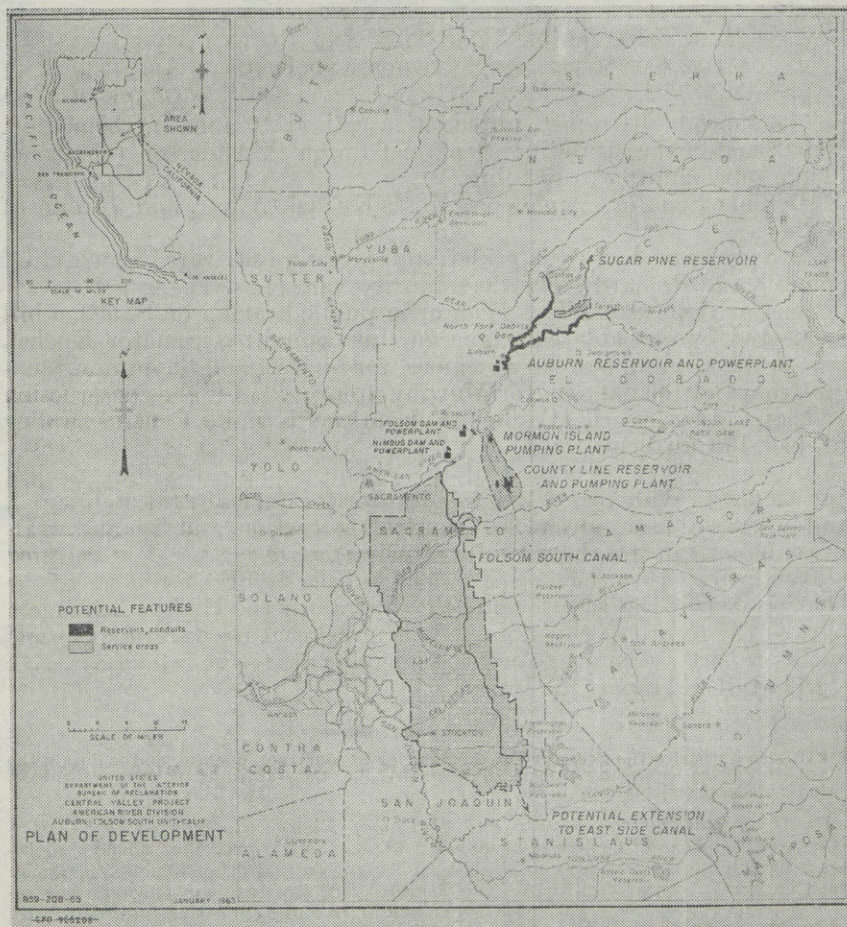
A BILL To authorize the Secretary of the Interior to construct, operate, and maintain the Auburn-Folsom south unit, American River division, Central Valley project, California, under Federal reclamation laws

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the principal purpose of increasing the supply of water available for irrigation and other beneficial uses in the Central Valley of California, the Secretary of the Interior (hereinafter referred to as the "Secretary"), acting pursuant to the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto), is authorized to construct, operate, and maintain, as an addition to, and an integral part of, the Central Valley project, California, the Auburn-Folsom south unit, American River division. The principal works of the unit shall consist of:

(1) the Auburn Dam and Reservoir with maximum water surface elevation of one thousand one hundred and forty feet above mean sea level, and capacity of approximately two and one-half million acre-feet;

(2) a hydroelectric powerplant at Auburn Dam with initial installed capacity of approximately two hundred and forty thousand kilowatts and necessary electric transmission system for interconnection with the Central Valley project power system: *Provided*, That provision may be made for the ultimate development of the hydroelectric capacity (now estimated at

2 AUBURN-FOLSOM SOUTH UNIT—CENTRAL VALLEY PROJECT



approximately four hundred thousand kilowatts), and such installation may be made when the Secretary determines that it is economically justified and engineeringly feasible;

(3) the Sugar Pine Dam and Reservoir;

(4) the County Line Dam and Reservoir;

(5) necessary diversion works, conduits, and other appurtenant works for the delivery of water supplies to projects on the Forest Hill Divide in Placer County and in the Folsom-Malby area in Sacramento and El Dorado Counties;

(6) the Folsom south canal and such related structures, including pumping plants, regulating reservoirs, floodways, channels, levees, and other appurtenant works for the delivery of water as the Secretary determines will best serve the needs of Sacramento and San Joaquin Counties: *Provided*, That the Secretary is authorized to include in such canal and related operating structures such additional works or capacity as he deems necessary and economically justified to provide for the future construction of the east side division of the Central Valley project, and the incremental cost of providing additional works or capacity in the Folsom south canal to serve the east side division of the Central Valley project shall be assigned to deferred use for repayment from Central Valley project revenues. In the event that the east side division is authorized, such costs shall be deemed a part of the cost of that division and shall be reallocated as the Secretary deems right and proper.

SEC. 2. Subject to the provisions of this Act, the operation of the Auburn-Folsom south unit, American River division, shall be integrated and coordinated, from both a financial and an operational standpoint, with the operation of other features of the Central Valley project, as presently authorized and as may in the future be authorized by Act of Congress, in such manner as will effectuate the fullest, most beneficial, and most economic utilization of the water resources hereby made available. Auburn and County Line Dams shall be operated for flood control in accordance with criteria established by the Secretary of the Army as provided for in section 7 of the Flood Control Act of 1944 (58 Stat. 887; 33 U.S.C. 709).

SEC. 3. The Secretary is authorized as a part of the Auburn-Folsom south unit to construct, operate, and maintain or otherwise provide for basic public outdoor recreation facilities, to acquire or otherwise to include within the project area such adjacent lands or interest therein as are necessary for present or future public recreation use, to allocate water and reservoir capacity to recreation, and to provide for the public use and enjoyment of project lands, facilities, and water areas in a manner coordinated with the other project purposes. The Secretary is authorized to enter into agreement with Federal agencies or State or local public bodies for the operation, maintenance, and additional development of project lands or facilities, or to dispose of project lands or facilities to Federal agencies or State or local public bodies by lease, transfer, conveyance, or exchange, upon such terms and conditions as will best promote the development and operation of such lands or facilities in the public interest for recreation purposes. The Secretary is authorized to transfer jurisdiction over project lands within or adjacent to the exterior boundaries of national forest and facilities thereon to the Secretary of Agriculture for recreation and other national forest system purposes. Where any project lands are transferred hereunder to the jurisdiction of the Secretary of Agriculture, the lands involved shall become national forest lands: *Provided*, That the lands and waters within the flow lines of any reservoir or otherwise needed or used for the operation of the project shall continue to be administered by the Secretary of the Interior to the extent he determines to be necessary for such operation. The costs of land and basic facilities for the purposes of recreation or enhancement of fish and wildlife resources shall be nonreimbursable. Joint costs of the unit allocated to the purposes of recreation and fish and wildlife enhancement shall also be nonreimbursable up to an amount not to exceed \$18,000,000. Joint costs allocated to the purposes of recreation and fish and wildlife enhancement in excess of the foregoing limitation shall be reimbursable with interest from the date of first delivery of water or power from the unit at a rate comparable to that for other project functions.

SEC. 4. In locating and designing the works and facilities authorized for construction by this Act, and in acquiring or withdrawing any lands as authorized by this Act, the Secretary shall give due consideration to the reports upon the California water plan prepared by the State of California, and shall

consult the local interests who may be affected by the construction and operation of said works and facilities or by the acquisition or withdrawal of lands, through public hearings or in such manner as in his discretion may be found best suited to a maximum expression of the views of such local interests.

SEC. 5. Nothing contained in this Act shall be construed by implication or otherwise as an allocation of water, and in the studies for the purposes of developing plans for disposal of water as herein authorized the Secretary shall make recommendations for the use of water in accord with State water laws, including but not limited to such laws giving priority to the counties and areas of origin for present and future needs.

SEC. 6. For a period of ten years from the date of enactment of this Act, no water shall be delivered to any water user for the production on newly irrigated lands in the Auburn-Folsom south unit, American River division, Central Valley project, of any basic agricultural commodity, as defined in the Agricultural Act of 1949, or any amendment thereof, if the total supply of such commodity as estimated by the Secretary of Agriculture for the marketing year in which the bulk of the crop would normally be marketed and which will be in excess of the normal supply as defined in section 301(b)(10) of the Agricultural Act of 1938, as amended, unless the Secretary calls for an increase in production of such commodity in the interest of national security.

SEC. 7. There is hereby authorized to be appropriated for construction of the Auburn-Folsom south unit, American River division, the sum of \$425,000,000 plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indexes applicable to the types of construction involved herein. There are also authorized to be appropriated such additional sums as may be required for operation and maintenance of the project and for future costs incurred under section 1(2) of this Act.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., March 26, 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 for the views of this Department on S. 599, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Auburn-Folsom south unit, American River division, Central Valley project, California, under Federal reclamation laws.

We firmly support the Auburn-Folsom south addition to the Central Valley project, and urge early enactment of S. 599 with amendments set out hereafter.

This project is in the heart of rapidly growing California, where the need for more water and for additional electric power is great. Auburn-Folsom south unit would assure more water and additional low-cost power along with many other benefits in an area where population is fast increasing. Here water is an ever-precious commodity. Progress can be aided or impeded by the vagaries of seasonal precipitation. Among the benefits that would accrue from the unit are the addition of millions of additional kilowatt-hours of electricity annually to meet ever-growing power needs, the recapture and reuse of drainage water and the provision of water for industrial and municipal growth as well as for agriculture. Further, there will be recreation benefits, enhancement of fish and wildlife habitat and, finally, additionally needed flood protection for Sacramento. The value of this proposed project, a model of multipurpose water resource development, is demonstrated by its unusually high benefit-to-cost ratio of 3.6 to 1 (100-year period of analysis, 3½ percent interest rate).

Auburn Dam, the key feature of the \$425 million project, will block the American River about 30 miles northeast of Sacramento and create a 2½ million acre-foot reservoir to store water for power for municipal and industrial purposes, and for irrigation. Its basic generating plant of 240,000 kilowatts will add 613 million kilowatt-hours of electricity to the hydroelectric capability of the Central Valley project area. Even greater returns will be realized when the ultimate generation capacity of 400,000 kilowatts is reached. The dam site being

ideally located near gravel and other deposits will help to keep construction costs to a minimum.

From Auburn Reservoir will flow 390,000 acre-feet of water annually to meet municipal, industrial, and irrigation requirements in a region that features some of the most productive land in the world—if assured adequate moisture.

Equally important, but not as spectacular as Auburn Dam, is the Folsom South Canal. This 67-mile canal, passing through the rich east-side area of the Central Valley from the American River south to Stockton, would bring 852,000 acre-feet of water annually to serve nearly 400,000 acres in Sacramento and San Joaquin Counties, most of which is presently irrigated from wells where ground water tables are dropping. Some 420 acre-feet per day of water would funnel into municipalities for residential and industrial uses as the canal meets its dual-purpose role.

The fast-growing Forest Hill Divide area, lying between the arms of the Auburn Reservoir, will benefit through construction of Sugar Pine Dam and Reservoir on Shirrtail Creek. This facility will provide municipal, industrial, and irrigation water for a mountain community of 5,000 acres which has no other foreseeable source of water. Additional benefits would result for recreation and wildlife.

The Folsom-Malby segment of the Auburn-Folsom unit lies between the American and Consumnes Rivers. This area, like others in the project is burgeoning and requires more water for suburban growth and industry. The service area includes sections of western El Dorado County and eastern Sacramento County lying higher than the Folsom South Canal. A pumping plant would be built at the existing Folsom Reservoir and a pipeline some 10 miles long would deliver water to the proposed County Line Reservoir on Deer Creek, near the Folsom-Malby service area. Here again there will be fish and wildlife benefits, important recreation benefits, and minor flood control.

There is an urgency to the Auburn-Folsom south unit as a logical next addition to the Central Valley project, for many of the areas it will serve are plagued persistently by drought, while much needed water flows unused and often destructively down the American River to the sea. The State of California cannot undertake this merited project because of its tremendous obligation of \$1.7 billion in other critically needed water supply works.

In previous cost allocations and financial analyses for the Auburn-Folsom unit and for the Central Valley project as a whole, the operation, maintenance, and replacement costs allocated to nonreimbursable functions were assigned to reimbursable functions. A corresponding increase was made in the allocation of construction costs to the nonreimbursable functions. As a result of the adjustment in both reimbursable and nonreimbursable functions, equity of cost allocations among functions was maintained. This procedure was adopted many years ago as a bookkeeping and administrative convenience.

In compliance with views expressed in hearings by congressional committees, this procedure was changed, beginning with our fiscal year 1966 budget justifications to the Congress, to recognize the allocated operation, maintenance, and replacement costs as a direct charge against each function of the project. This change in procedure for assignment of operation, maintenance, and replacement costs does not affect the estimated construction costs of the Auburn-Folsom south unit or the overall Central Valley project.

The construction costs for the Auburn-Folsom south unit are as follows:

Auburn Dam, Reservoir, powerplant and appurtenant facilities.....	\$282, 105, 000
Folsom south features.....	86, 086, 000
Forest Hill Divide features.....	7, 523, 000
Folsom-Malby features.....	11, 916, 000
East Side enlargement.....	23, 540, 000
<hr/>	
Total basic unit.....	411, 170, 000
Provision for power installation.....	13, 500, 000
<hr/>	
Total construction authorization.....	424, 670, 000
Rounded to.....	425, 000, 000

6 AUBURN-FOLSOM SOUTH UNIT—CENTRAL VALLEY PROJECT

The investment costs for the Auburn-Folsom south unit is \$427,170,000, derived as follows:

Construction cost.....		\$411, 170, 000
Interest during construction:		
Municipal and industrial	\$2, 091, 000	
Commercial power.....	12, 012, 000	
Recreation and fish and wildlife.....	474, 000	
		14, 577, 000
Central Valley project power transfer for Auburn-Folsom south unit pumping.....		1, 423, 000
		<hr/>
Total investment cost.....		427, 170, 000

A tentative allocation of investment costs of the Auburn-Folsom south unit, reflecting the foregoing change in procedure for assignment of operation, maintenance, and replacement costs, is as follows:

Reimbursable costs:¹

Irrigation	\$170, 637, 000
Municipal and industrial water.....	29, 655, 000
Commercial power.....	148, 855, 000
Recreation and fish and wildlife enhancement.....	6, 200, 000

Subtotal

Deferred use:

 East Side division.....

Nonreimbursable costs:¹

Flood control.....	9, 324, 000
Recreation and fish and wildlife enhancement:	
(a) Joint costs ²	32, 782, 000
(b) Separable costs ³	6, 177, 000

Subtotal

Total investment cost⁴.....

¹ The allocations to recreation and fish and wildlife enhancement have been assigned to the reimbursable or nonreimbursable category in accordance with the proposed "Federal Water Project Recreation Act" (S. 1229).

² All joint costs allocated to recreation and fish and wildlife enhancement would be non-reimbursable.

³ Includes \$5,727,000, one-half of separable recreation costs, plus \$450,000 representing the costs of recreation facilities at the Sugar Pine Reservoir which will be in a national forest and be under the jurisdiction of the Secretary of Agriculture.

⁴ Should the \$13,500,000 cost provision of facilities for future power installations be incurred, these amounts would be increased accordingly.

The proposed charges for municipal and industrial water would repay all costs allocated to that purpose with interest. Power and energy generated by the Auburn powerplant would be marketed through the Central Valley project at project rates. The irrigation water rates at canal side would meet all costs of operation and maintenance of the works and contribute toward the capital costs allocated to irrigation.

Revenues from power and municipal and industrial water sales of the entire Central Valley project would be used to repay within 50 years the portion of the irrigation allocation of the project which is beyond the repayment capacity of the water users.

We suggest that the following amendments be made to the bill:

A. Page 3, lines 10, 13, and 16, capitalize the words "east side".

B. To conform this bill to the proposed Federal Water Project Recreation Act the following changes should be made in section 3:

- (1) Delete the word "basic" from line 9, page 4.
- (2) Delete the words "additional development" in lines 18 and 19, page 4, and substitute the word "replacement".
- (3) Strike all of section 3 after the word "operation" in line 11, page 5.
- (4) Renumber section 3 as subsection 3(a) and add new subsections reading as follows:

 "(b) Joint costs allocated to recreation and fish and wildlife enhancement shall be nonreimbursable.

 "(c) Costs of recreation facilities at Sugar Pine Reservoir shall be nonreimbursable.

"(d) (1) If, before commencement of construction of the unit, non-Federal public bodies agree to administer unit land and water areas for recreation and fish and wildlife enhancement pursuant to a plan of development and to bear not less than one-half the separable costs of the unit allocated to those purposes and all the costs of operation, maintenance, and replacement of recreation and fish and wildlife enhancement lands and facilities, not more than one-half the separable capital costs allocated to recreation and fish and wildlife enhancement shall be nonreimbursable.

"(2) In the absence of such a preconstruction agreement, recreation facilities and facilities and project modifications for fish and wildlife enhancement (other than minimum facilities for the public health and safety at reservoir access points) shall not be provided, and the allocation of unit costs shall reflect only the number of visitor-days and the value per visitor-day estimated to result from such diminished recreation and fish and wildlife enhancement development without reference to lands which may be provided pursuant to subsection (f) of this section.

"(e) The non-Federal share of the separable investment costs of the unit allocated to recreation and fish and wildlife enhancement shall be borne by non-Federal interests, under either or both of the following methods as may be determined appropriate by the Secretary: (i) payment, or provision of lands, interests therein, or facilities for the unit; or (ii) repayment, with interest, within 50 years of first use of unit recreation or fish and wildlife enhancement: *Provided*, That the source of repayment may be limited to entrance and user fees or charges collected at the unit by non-Federal interests if the fee schedule and the portion of fees dedicated to repayment are established on a basis calculated to achieve repayment as aforesaid and if the fee schedule and the portion of fees dedicated to repayment are made subject to review and renegotiation at intervals of not more than five years.

"(f) In the absence of preconstruction agreements as specified in subsection 3(d) (1) lands may be acquired in connection with construction of the unit to preserve the recreation and fish and wildlife enhancement potential of the unit.

"(1) If non-Federal public bodies agree within ten years after initial unit operation to administer unit land and water areas for recreation and fish and wildlife enhancement pursuant to a plan of development and to bear not less than one-half the costs of lands acquired pursuant to this subsection and facilities and project modifications provided for those purposes and all costs of operation, maintenance, and replacement of recreation and fish and wildlife enhancement facilities, not more than one-half the costs of such lands, facilities, and project modifications may be borne by the United States and such costs shall be non-reimbursable. Such agreement and subsequent development shall not be the basis for any reallocation of joint costs of the unit to recreation or fish and wildlife enhancement.

"(2) If, within ten years after initial operation of the unit, there is not executed an agreement as specified in paragraph (1) of this subsection the Secretary may convey the possession and control of any lands acquired pursuant to this subsection by deed, lease, or otherwise, to any Federal agency or to any person or non-Federal body, for the purpose of recreation, fish and wildlife enhancement, or use as a summer residence, or for the operation on such lands of pleasure resorts for boating, fishing, or any similar purpose, or for any other purpose which would not conflict with the purposes for which the unit was constructed: *Provided*, That no transfer authorized herein, except transfer by conveyance at fair market value under the then existing conditions, shall be made without approval of the President of the United States.

"(g) As used in this Act, the term 'nonreimbursable' shall not be construed to prohibit the imposition of entrance, admission, and other recreation user fees or charges.

"(h) Costs of means and measures to prevent loss of and damage to fish and wildlife resources shall be treated as project costs and allocated among all unit purposes."

The management and cost-sharing requirements of subsections 3(d), 3(e), and 3(f) would, of course, be inapplicable to Sugar Pine Reservoir, which will be administered by the Secretary of Agriculture.

C. Section 5 of the bill is unnecessary and should be deleted.

D. In section 7, after the figure "\$425,000,000", add "(1962 prices)".

The feasibility report of January 15, 1962, and the supplemental report of October 21, 1963, on the Auburn-Folsom south unit make adequate allowances for future water uses in the upstream foothill areas. If it is deemed essential to include assurances on this point in the authorizing legislation, we would have no objection to substitution of the following language for the existing section 5:

"Sec. 5. Before initiating any diversions of water from the American River Basin in connection with the operation of the Auburn-Folsom South unit, Central Valley project, the Secretary shall determine the quantity of water required to satisfy all existing and anticipated future needs within that basin and the diversions shall at all times be subordinate to the quantities so determined."

It is my opinion that because of the urgent water and power needs, the benefits to the State and to the Nation, and the leadtime between authorization and actual construction, we should move forward on this proposal as soon as possible. It is my hope that the Congress will agree that the Auburn-Folsom south unit is the next logical addition to the Central Valley project where the Federal Government has been so successful in making an investment in multiple-purpose projects which have in turn greatly enhanced the economy of the Nation.

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

The Bureau of the Budget has advised that enactment of legislation to authorize the Auburn-Folsom south unit would be consistent with the objectives of the administration.

Sincerely yours,

STEWART L. UDALL,
Secretary of the Interior.

AUBURN-FOLSOM SOUTH UNIT, CENTRAL VALLEY PROJECT, CALIFORNIA

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

	1st	2d	3d	4th	5th
Estimated additional man-years of civilian employment (executive direction):					
Executive.....	2	2	2	2	2
Clerical.....	2	2	2	2	2
Total, executive direction.....	4	4	4	4	4
Administrative services and support:					
Accountant.....	5	8	11	12	12
Clerical.....	9	16	22	23	24
Property management.....	8	13	16	16	16
Records maintenance.....	5	8	8	8	8
Total administrative services and support.....	27	45	57	59	60
Substantive (program):					
Engineering aids.....	38	84	120	120	120
Engineers.....	33	70	96	96	96
Geologists.....	5	7	9	9	9
Total, substantive.....	76	161	225	225	225
Total, estimated additional man-years of civilian employment.....	107	210	286	288	289
Estimated additional expenditures:					
Personal services (in thousands of dollars).....	749	1,470	2,175	2,290	2,305
All other (in thousands of dollars).....	4,403	10,931	24,557	45,446	55,946
Total estimated additional expenditures (in thousands of dollars).....	5,152	12,401	26,732	47,736	58,251

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., March 31, 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 February 26, 1965, requesting the views of the Bureau of the Budget on S. 599, a bill to authorize the Secretary of the Interior to construct, operate, and maintain the Auburn-Folsom south unit, American River division, Central Valley project, California, under Federal reclamation laws.

The purpose of the bill is stated in its title.

The Department of the Interior, in a letter being submitted to the committee, recommends enactment of S. 599 with certain perfecting amendments. The Bureau of the Budget concurs in the recommendations of the Department.

Accordingly, the Bureau of the Budget would have no objection to the enactment of this measure if amended as recommended by the Department of the Interior.

Sincerely yours,

PHILIP S. HUGHES,
Assistant Director for Legislative Reference.

Senator ANDERSON. Authorizing legislation for Auburn-Folsom has been before successive Congresses and has been studied by this committee on several different occasions. The Folsom Dam itself was initially authorized in the wide-ranging Flood Control Act of 1944 as a Corps of Engineers project.

In a special message to Congress on January 12, 1948, President Harry Truman urged the 80th Congress to expand the authorization to provide for transfer of the dam and reservoir to the Bureau of Reclamation for construction of a powerplant and transmission lines, and for water distribution works for irrigation and municipal purposes.

The 80th Congress did nothing to carry out the President's recommendation, but early in the 81st Congress, President Truman, on February 25, 1949, renewed his recommendations. The then chairman of this committee, Senator O'Mahoney, appointed me as a member of an ad hoc subcommittee to hold hearings and consider a bill, H.R. 165, sponsored by then Congressman Engle, of California, which authorized what was described as the American River Basin development, keyed to Folsom Dam and Reservoir.

As reported and enacted on October 14, 1949, the legislation—Public Law 356, 81st Congress—also directed the Secretary of the Interior to make studies to develop plans for disposing of the water and power made available by the project.

The Secretary's report pursuant to this congressional directive was submitted to Congress on January 15, 1962, and printed as House Document 305, 87th Congress. It formed the basis for S. 103, 87th Congress, sponsored by Senators Engle and Kuchel, which is the predecessor of our present bill.

Hearings were held on S. 103, and it was favorably reported to the Senate, but no further action could be taken.

Again in the 88th Congress, Senators Engle and Kuchel sponsored S. 351; again hearings were held; and again the measure reported to the Senate.

The present bill, S. 599, is identical with S. 351, 88th Congress, as amended by this committee and favorably reported to the Senate.

Without objection, I will incorporate, by reference, the hearings and reports on S. 103, 87th Congress, and S. 351, 88th Congress, into

the record of this hearing so that all of the facts and comments set forth in them may be before us.

Now, before calling upon our first witness, the Secretary of the Interior, I feel certain that the author of the bill and longtime able spokesman for the people of California, Senator Kuchel, may wish to say a word or two about this legislation for which he has fought so vigorously.

Senator Kuchel?

**STATEMENT OF HON. THOMAS H. KUCHEL, A U.S. SENATOR FROM
THE STATE OF CALIFORNIA**

Senator KUCHEL. Thank you, Mr. Chairman. I shall be very brief. Mr. Chairman, this bill is vital to the future well-being of the State of California. It has been, as I recall, approved by unanimity in this committee on two prior occasions.

As you suggested, recommendations for the type of construction spelled out in this legislation began to find their way to this committee under the administration of former President Harry Truman. At the conclusion of the comments I have here, Mr. Chairman, I think it might very well be appropriate for me to ask you to include in the record portions of the Senate committee report on H.R. 165 in the 81st Congress, sponsored by our late beloved friend and colleague, Senator Engle, then a Member of the House of Representatives in which former President Truman as our Chief Executive makes recommendations along these lines.

The committee noted that the then Governor of California, now the distinguished Chief Justice of the United States, likewise made a recommendation for this development.

Senator ANDERSON. Without objection that may be put in the record at this point.

(The information referred to follows:)

DEAR MR. CHAIRMAN: Work is now underway on Folsom Dam, on the American River in California, which was authorized for construction by the Corps of Engineers, Department of the Army, in the Flood Control Act, approved December 22, 1944.

Last year, in a message dated January 12, 1948, I recommended that the Congress expand the present authorization for the construction of Folsom Dam to provide (1) for the transfer of the dam and reservoir, upon its completion, to the Bureau of Reclamation for operation and maintenance as a coordinated unit of the Central Valley project under the Federal reclamation law; (2) for construction by the Bureau of Reclamation of a powerplant, afterbay, and necessary transmission lines; and (3) for construction by the Bureau of Reclamation of irrigation canals and related works needed to deliver water from the reservoir to irrigation districts, cities, and suburban areas. For the reasons set forth in my message, last year, I believe that these recommendations will provide for the achievement of the greatest possible benefits for the people of California and the Nation from the multiple-purpose use of the waters to be controlled by the dam.

Although action on these recommendations was not completed in the 80th Congress, a number of bills to accomplish these same purposes are pending in the present Congress. I hope that your committee and the Congress will act favorably on legislation to carry out these recommendations.

Sincerely yours,

HARRY S. TRUMAN.

The WHITE HOUSE, February 25, 1949.

OTHER SUPPORT

Lt. Gen. Raymond A. Wheeler, Chief of Engineers, testified at the committee hearings held last spring on the project in support of a similar measure embody-

ing the President's recommendations. Gov. Earl Warren, of California, has publicly and in a communication to the author of this legislation supported its provisions. In addition, large delegations from California appeared at the hearings representing private industry, semipublic, and public agencies of the State of California who regard this legislation as a most important step in the development of the great Central Valley of California. No opposition to this bill has been registered with your committee which unanimously reported it with a favorable recommendation.

[H. Doc. No. 496, 80th Cong., 2d sess.]

MESSAGE FROM THE PRESIDENT OF THE UNITED STATES TRANSMITTING HIS
RECOMMENDATION THAT CONGRESS EXPAND THE PRESENT AUTHORIZATION FOR
THE CONSTRUCTION OF FOLSOM DAM

To the Congress of the United States:

The estimates of appropriation for civil functions of the Corps of Engineers, Department of the Army, in the 1949 budget include \$3,370,000 for beginning construction of the Folsom Dam on the American River in California. This project was authorized for construction by the Corps of Engineers in the Flood Control Act approved December 22, 1944—"substantially in accordance with the plans contained in House Document Numbered 649, Seventy-eighth Congress, second session, with such modifications thereof as in the discretion of the Secretary of War and the Chief of Engineers may be advisable * * *"

The Corps of Engineers, the Bureau of Reclamation of the Department of the Interior, and the State of California are agreed that the initial plans, for a reservoir of 355,000 acre-feet capacity, should be revised to provide a reservoir of 1 million acre-feet. This will not only provide more adequate storage for flood control but will also provide adequate storage at the Folsom Dam site for irrigation, hydroelectric-power production, and other uses consistent with the conservation of water resources in the Central Valley area. The Corps of Engineers is completing construction plans for the dam on this revised basis and work can be started promptly.

The Folsom Dam and Reservoir is a key unit in any plan for the full development of the water resources of the Central Valley. There is an urgent need for this structure, not only from the standpoint of flood control, but also to provide additional electric energy and conservation of water to meet growing demands in the area. The Corps of Engineers should therefore be given funds to start building the dam at once under the authority of existing legislation. At the same time the authority contained in existing law for the construction of Folsom Dam should be expanded to permit the Bureau of Reclamation to construct and operate a powerplant.

The powerplant at Folsom must be integrated with the hydroelectric powerplants at Shasta and Keswick, constructed and operated by the Bureau of Reclamation, and with the Delta-Mendota pumping plant of the Central Valley project—all of which must be operated as a unit. To achieve such coordinated operation the Folsom Dam and Reservoir, once constructed, should be transferred to the Bureau of Reclamation for operation and maintenance. After the transfer the dam would be operated for flood control in accordance with criteria established by the Secretary of the Army, as provided in section 7 of the Flood Control Act of 1944.

The transfer to the Bureau of Reclamation would assure that Folsom Dam and its important related developments would be operated in coordination with other Federal conservation structures in the Central Valley to yield the greatest possible benefits. Power produced at the Folsom Dam would be used as a second source of energy for the Delta-Mendota pumping plant and for other irrigation pumping. The income from the disposition, under Federal reclamation laws, of the power there produced would assist not only in amortizing the cost of the Folsom Dam and powerplant but also in paying an appropriate share of the cost of irrigation canals and other works needed to distribute water from Folsom Reservoir to irrigation districts, cities, and suburban areas. Unless this income from power revenues is provided for in accordance with established practice under reclamation law, many related developments proposed in the Central Valley, particularly in the American River Basin and nearby areas of California, will not be financially feasible.

I recommend therefore that the Congress expand the present authorization for the construction of Folsom Dam to provide (1) for the transfer of the dam and reservoir, upon its completion, to the Bureau of Reclamation for operation and maintenance as a coordinated unit of the Central Valley project under the

Federal reclamation law; (2) for construction by the Bureau of Reclamation of a powerplant, afterbay, and necessary transmission lines, and (3) for construction by the Bureau of Reclamation of irrigation canals and related works needed to deliver water from the reservoir to irrigation districts, cities, and suburban areas. There are pending in the Congress two bills (H.R. 4152 and H.R. 4157), either one of which, if enacted into law with appropriate amendments, would accomplish these purposes.

HARRY S. TRUMAN.

THE WHITE HOUSE, January 12, 1948.

Senator KUCHEL. Thank you, Mr. Chairman. In addition, the California Legislature has once again made recommendation that the bill before us, S. 599, be approved by the Congress.

I ask consent that it be incorporated in the record.

(The resolution referred to follows:)

SENATE JOINT RESOLUTION No. 9

Adopted in Senate March 17, 1965

J. A. BEEK,
Secretary of the Senate

Adopted in Assembly March 16, 1965

JAMES D. DRISCOLL,
Chief Clerk of the Assembly

This resolution was received by the Secretary of State this _____ day of _____, 1965, at _____ o'clock _____ M.

WALTER C. STUTLER,
Assistant Secretary of State

CHAPTER _____

Senate Joint Resolution No. 9—Relative to the Auburn Dam and Folsom South Canal.

WHEREAS, There has been submitted to the Congress of the United States legislation to authorize construction by the Secretary of the Interior, as part of the Central Valley project, of both the Auburn Dam on the American River and the Folsom South Canal; and

WHEREAS, This proposed development is known to be economically justified, and has been determined to be engineeringly feasible; and

WHEREAS, The multiple-purpose project of the Auburn Dam will furnish additional water which can be used in the American River watershed, the Sacramento-San Joaquin Delta region, the San Joaquin Valley, and areas to the south, and will produce additional electric power which would be available for pumping water to areas of deficiency in California's statewide water program; and

WHEREAS, The devastating storms and floods occurring recently have again endangered many lives and done great damage to public and private property in the American River watershed and the Sacramento-San Joaquin Delta region; and

WHEREAS, Construction of the Auburn Dam would greatly reduce the danger of future loss of life and injury to persons and property caused by floods in these areas; and

WHEREAS, The Folsom South Canal will serve to bring urgently needed supplemental water supplies to areas in the Sacramento-San Joaquin Delta region and the northern San Joaquin Valley area, which supplies would be made available from storage of water in Folsom Reservoir, as supplemented by the proposed Auburn Dam and Reservoir; and

WHEREAS, Both the proposed Auburn Dam and the Folsom South Canal are part of the California water plan and would complement the State's efforts to

meet the water requirements of California's rapidly expanding population: Now, therefore, be it

Resolved by the Senate and the Assembly of the State of California, jointly. That the Legislature of the State of California respectfully memorializes the President and the Congress of the United States to enact into law, at the earliest possible time, the necessary legislation to authorize the construction of the Auburn Dam and the Folsom South Canal including authorization to include in such canal and related operating structures such additional works or capacity as the Secretary of Interior deems necessary and economically justified to provide for the future construction of the east side division of the Central Valley project, provided that the incremental cost of providing additional works or capacity in the Folsom South Canal to serve the east side division of the Central Valley project shall be assigned to deferred use for repayment from Central Valley project revenues; and be it further

Resolved, That the Secretary of the Senate is hereby directed to transmit copies of this resolution to the President and Vice President of the United States, to the Speaker of the House of Representatives, and to each Senator and Representative from California in the Congress of the United States.

GLENN M. ANDERSON,
President of the Senate

JESSE M. UNRUH,
Speaker of the Assembly

Attest:

FRANK M. JORDAN,
Secretary of State

Senator KUCHEL. Mr. Chairman, I conclude these comments with this statement: The Auburn-Folsom project now urged once again before the committee by my friend, the distinguished Secretary of the Interior, and the Commissioner of Reclamation, who is also my friend, represents a critically necessary public project. It will be wholly repayable by the people who will reap the benefits in a fast-growing area of California. Thank you, Mr. Chairman.

Senator ANDERSON. I will put in the record at this point a statement of Congressman Harold T. Johnson, of California. I also have a statement of Governor Brown of California. I will put that in the record at this point also.

(The statements referred to follow:)

STATEMENT OF HON. HAROLD T. (BIZZ) JOHNSON, A U.S. REPRESENTATIVE IN
CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman, it is with great pleasure that I join with the distinguished senior Senator from California, my good friend, Senator Thomas H. Kuchel, in urging the authorization of the Auburn-Folsom south unit in California. This proposed development, as it is now constituted, is the culmination of 20 years of investigation, planning and formulation by our local and State agencies and by the Bureau of Reclamation and other Federal agencies. The need for such a multiple-purpose water resource development is urgent. The people who are to be directly benefited are enthusiastically in accord with the plan of development and ready to assume their responsibilities of repayment, operation, and maintenance. The Secretary's reports show that the proposal is completely justifiable and financially sound. The computed benefit-cost ratio of 3.6 to 1 demonstrates that this is one of the most worthy reclamation developments to come before this committee in many years.

The potential benefits of the unit stem from so many functions that it is difficult to decide which to mention first. One of the most important functions is that of providing increased flood protection for the highly developed American River Valley, which includes the capital city of Sacramento. The need for

such increased protection through storage has become more evident since the plan of development was formulated, as three recordbreaking flood events in 9 years strained the storage capacity of Folsom Reservoir and local protective works to their capacities. Each time, disastrous flooding of Sacramento was narrowly averted by emergency measures.

Of equal importance to the region and the Nation is the distribution and delivery of water to be stored in the proposed Auburn Reservoir for service to almost one-half million acres of very rich lands lying south of Sacramento. Irrigation in that area is essential to economic agricultural production. Essentially every drop of surface water is used during the irrigation season, and underground water is being pumped out faster than nature can replace it. The farmers are desperately in need of the water that could be furnished through the Folsom South Canal.

Water from the Folsom South Canal would be delivered to the city of Stockton and other population centers in the area for municipal and industrial uses. Here again the pattern is repeated—as population grows, water demand increases, and the ground water which now furnishes the bulk of the city's supplies is being increasingly overdrawn. In fact, it has been necessary already to abandon some of the wells serving Stockton because the quality of the water as the water level receded under pumping became too saline for municipal use. The service proposed to the Forest Hill area is the only practicable way of permitting this mountain community to grow. Similarly, the Malby area which is normally completely dry can become a valuable suburb of Sacramento by virtue of the water it would receive from the Auburn-Folsom south unit.

California's demands for electric power continue to require the construction of new generating capacity. The Central Valley project, particularly, is about to reach the point where power requirements for pumping project water will absorb all of the uncommitted project power, and, unless new power capacity is added to the Central Valley project system, it may soon be necessary to withdraw power from existing preference customers. Construction of the Auburn powerplant, with an initial installation of 240,000 kilowatts and provision for an ultimate capacity of 400,000 kilowatts, would substantially relieve the power squeeze which is impending.

Recreation and fish and wildlife benefits are of major importance also. Folsom Reservoir has become a favorite water playground for many thousands of central California's people. Auburn Reservoir, in addition to being an important recreation center in its own right, will augment the usefulness of Folsom Reservoir by maintaining higher, more constant water surface levels. Thousands of additional acres of land and water surface will be provided for recreation opportunities. The new reservoir fishery will be a valuable asset to the area, and the benefits to the anadromous fish will be substantial.

I wholeheartedly endorse the proposal of the Department of the Interior, as set forth in the Secretary's report on the bill being considered by the committee. I urge the committee to take prompt and favorable action on Senator Kuchel's bill, S. 599.

Thank you.

STATEMENT OF HON. EDMUND G. BROWN, GOVERNOR OF CALIFORNIA

I strongly support passage of S. 599 to authorize the Auburn-Folsom south unit of the Central Valley project. Recent floods in California have brought into sharp focus the extreme urgency for expeditiously bringing forth this much needed project. It will be exceptionally beneficial for California and the Nation and it is fully compatible with all other plans for water development within the State.

Over a period of many years, and in numerous studies and hearings by the Congress and agencies of the Federal Government, there has been developed overwhelming evidence of the need for this important project. Its economic feasibility is unquestioned.

It has nearly unanimous support from all State agencies, private institutions and other organizations concerned with water development, flood control and recreation in California.

I strongly urge congressional action at this session.

Today, I would like to briefly review for you the principal reasons for creation of this multipurpose water development project.

First, flood control: I am sure many of you will recall the disastrous floods in northern California in late December of last year.

In many areas, we experienced record high flows. Entire towns were swept away in Humboldt County. Millions of dollars worth of highways and bridges were destroyed. The lumbering industry suffered tens of millions of dollars of damage.

Thirty northern California counties were declared major disaster areas as a result of the floods and have applied for Federal aid under Public Law 875. That the disaster was not worse can be credited to the Central Valley project whose great dams at Shasta and Folsom and others saved the city of Sacramento and scores of smaller communities from certain destruction. Orville Dam of the State water project played a similar role.

Nevertheless, there still existed a very real danger from flooding of the Sacramento and American Rivers.

Reclamation Commissioner Floyd E. Dominy, commenting on the dangerously high waters on the two streams, said recently:

"Only a benign providence which stopped the rain just in time prevented spills at Folsom which, if added to the flow of the Sacramento River, would have overtopped the levees at Sacramento."

The Auburn Dam would provide the safety factor which is urgently needed now. We cannot be sure that 1965 will not bring more, and perhaps greater floods in northern California. The lives and property of hundreds of thousands of persons lie in the balance.

The 1964 flood was by no means an isolated incident.

Since the days of pioneer settlement, the residents of California have suffered great floods, the flood of 1772 was followed by six major floods before the near legendary flood of 1861-62. These were followed by 16 major floods in the period between 1862 and 1950.

Since 1950, there have been eight major floods of the American River, bringing great suffering and damage to people, property and the economy of California and the Nation. The floods of November and December 1950, December 1955, February and March-April 1958, October 1962, January-February 1963, and December 1964 are of such recent occurrence that they are firmly imprinted in the minds of present day Californians. Four of these floods established new records of flow. Flooding of the American River has not been an isolated instance. The Auburn Dam will change this.

Three times since 1955, even with the existing Folsom Reservoir in operation, inundation of a major portion of the Sacramento metropolitan area with a current population of about 600,000 was avoided by the narrowest of margins. In each case, if the storm had continued for a period of less than one additional day, the results would have been a flood disaster of a greater magnitude than any ever experienced in California.

Because of the dramatic nature of last December's floods, I have dwelt heavily on the flood control aspects of the Auburn project. This alone would make construction of Auburn Dam worthwhile. But there are other cogent reasons for its construction along with related projects.

Second, water development: The area to be served by the Auburn-Folsom south project is one of the fastest growing population centers in the State.

Both industrial and agricultural expansion is taking place rapidly. Existing water supplies simply are not enough to meet current and future needs.

The overdraft on our very important ground water reservoirs has reached an alarming rate of 3 million acre-feet each year. Withdrawals at this rate cannot continue without causing irreparable damage to the ground water reservoirs and to our economy.

The Auburn-Folsom south project will help maintain our current agricultural economy by partially offsetting some of our ground water overdraft problems and will provide supplemental water to service areas where water is now in short supply.

It would supply irrigation water for Placer, El Dorado, Sacramento, and San Joaquin Counties. Ultimately, through the East Side Canal, it would service a portion of the lower San Joaquin Valley. In addition, it would make possible industrial expansion in communities that now are water deficient.

Third, the need for more power. The State has a direct interest in the power to be produced at Auburn Dam. The \$2 billion State water project now under construction in northern, central, and southern California is power-deficient. More power will be required for pumping than will be produced by the project itself.

The California Department of Water Resources, as a public agency preferred customer under reclamation law, has formally asked the Bureau of Reclamation to sell its power from the Central Valley project to help make up our deficit.

With an initial production of 240,000 kilowatts of power and a potential of 400,000 kilowatts, Auburn Dam would help us meet our power needs both for the State water project and for local irrigation and industrial purposes.

Fourth, the recreational potential. Although California is rich in recreational resources, current utilization indicates that future needs cannot be met by present facilities.

At Folsom Lake, for example, there is a present annual count of more than 3 million visitor-days. Auburn Reservoir, readily available to residents of the Sacramento and San Francisco Bay area population centers, would provide an average water surface of 8,700 acres, larger than Folsom Lake, for boating, fishing, and swimming.

Additionally, Auburn Dam, being upstream from Folsom, will help maintain Folsom Reservoir at higher, more stable levels, improving both its recreational and flood control capabilities.

Finally, and in conclusion, let me say that the Auburn-Folsom south project will be financially feasible. The benefit-cost ratio is extraordinarily high and is comparable with other projects in the Central Valley project.

The Central Valley project is years ahead of its payout schedule, a dramatic reminder that water development in California and in other parts of the West, is a gilt-edged investment that continues to pay rich dividends to Federal, State, and local governments.

The record is clear. The Auburn project is necessary and feasible. I urge you to authorize it this year.

Senator ANDERSON. We will next hear from the Honorable Stewart Udall, Secretary of the Interior. I see that Commissioner Dominy accompanies him.

You may proceed, Mr. Secretary.

STATEMENT OF HON. STEWART L. UDALL, SECRETARY OF THE INTERIOR, ACCOMPANIED BY FLOYD DOMINY, COMMISSIONER OF RECLAMATION

Secretary UDALL. Mr. Chairman, I have the Commissioner with me who can help me on the detailed questions you might ask. I have a statement which I should like to have appear in the record and I will summarize the highlights of this statement if I am permitted.

Senator ANDERSON. Without objection that will be done.
(The statement referred to follows:)

PREPARED STATEMENT OF HON. STEWART L. UDALL, SECRETARY OF THE INTERIOR

Mr. Chairman, 16 years ago the Congress, in authorizing the American River division of the Central Valley project, directed the Secretary of the Interior, through the Bureau of Reclamation, to conduct the necessary investigations, surveys, and studies to develop plans for the utilization of the waters of the American River. Particular attention was directed to study of a canal extending south from Folsom Reservoir.

In those 16 years a great deal of investigation and study of the water resources of the American River Basin have been carried out, leading to the proposal for authorization of the Auburn-Folsom south unit now before you. In January of 1962, this Department's original report on the Auburn-Folsom south unit was transmitted to the Congress. It has been kept current by submission of modifications from time to time in commenting on proposed authorization legislation.

In February 1962 the Department first appeared before the Congress to testify in support of the Auburn-Folsom south unit at hearings before the Interior and Insular Affairs Committee. We again appeared in November 1963 before the same committee on a similar mission. Both times the committee reported the bill favorably to the Senate. Today we are back again to solidly support and to urge early enactment of the legislation before you to authorize the Auburn-Folsom south unit of the Central Valley project.

The water supply situation becomes more critical with every year that passes, and this development becomes more essential to rescue the economy of this key area of the Central Valley from threatened strangulation of its agricultural base. Water resource developments such as we are proposing take 10 or more years to build and another 10 years to attain optimum agricultural production. We must, therefore, consider this proposal in terms of the prospective needs and requirements, 20 years in the future.

This unit of the Central Valley project would permit more complete economic utilization of the waters of the American River Basin. It would protect the Sacramento metropolitan area against all probable floods. It would supplement the water supplies for the expanding cities and for a half million acres of rich agricultural valley lands of Sacramento and San Joaquin Counties. It would substantially improve the water supplies of the foothill areas of Placer, Sacramento, and Eldorado Counties. It would provide greatly increased recreation opportunities for the burgeoning population of northern California. It would develop hydroelectric power capabilities to assist in meeting the ever-increasing demand for power. In summary, the Auburn-Folsom south unit would be a logical, feasible, multiple-purpose extension of the Federal Central Valley project, one of the most successful reclamation projects ever undertaken.

Dry land agriculture in the Sacramento-Stockton area is limited by sparse and highly seasonal precipitation to grazing and some small grains. Farmers, irrigation districts, municipalities, and industries have fully developed the local surface and ground water resource. The ground water which has accumulated over many years is being mined by present developments, making further expansion extremely speculative and long-range maintenance of the present economy virtually impossible.

The Auburn-Folsom south unit would bring an annual increase of about 800,000 acre-feet of new water into this area. The rapidly growing needs of the Nation for the specialized agricultural products adaptable to this area make it essential that we plan ahead to be ready to meet those needs. Crops most likely to be grown in the Folsom south service area are not now in surplus supply. We would have no objection to an amendment to this bill prohibiting the use of water on this unit for the production of surplus crops for a specific period, as has been done in the case of the San Luis unit and other reclamation authorizations.

The city of Stockton, Calif., which depends heavily upon ground water for its municipal and industrial water supply, has found it necessary to reduce pumping or stop entirely using some wells where saline water began to be drawn in. These incidents, combined with constantly growing water requirements point up sharply the need for the water supply which will come from the Folsom South Canal.

The San Luis unit, which is now under construction, will involve new demands for pumping power from the Central Valley project power system. If Auburn Dam and powerplant is built in the near future, it will reduce the otherwise necessary curtailment of power sales to present customers of the Central Valley project as existing power supplies are diverted to meet San Luis unit pumping requirements. The flexibility of operation of Auburn Dam and powerplant, having Folsom and Nimbus Reservoirs available for reregulation of its releases, will enhance the efficiency of the powerplant in meeting peaking power requirements.

Three times in the last 9 years major floods occurred in the American River Basin, and each time the city of Sacramento was barely spared a disaster by emergency operation of Folsom Reservoir and levees. In December 1964, Folsom Reservoir was prevented from spilling by release of flows equal to the full designed capacity of the leveed channel of American River. A new maximum flow record was established during that flood. Had this high flow persisted for a few more hours, serious damage could not have been prevented. Auburn Dam and Reservoir would provide highly important storage capacity for future floods to backstop the operation of Folsom Reservoir and provide a margin of safety for the particularly vulnerable city of Sacramento.

There have been no changes in the plan of development since we last appeared before this committee to discuss the Auburn-Folsom south unit. The feasibility report, House Document 305, 87th Congress, and the supplemental report, House Document 171, 88th Congress, present all the physical, hydrologic, and agricultural data concerning the unit. These will be summarized by the representatives of the Bureau of Reclamation who are with me today.

At a recent hearing of this subcommittee, the administration's proposal for cost-sharing of recreation and fish and wildlife enhancement costs, as set forth in S. 1229, was discussed at some length. The analysis presented in our report on the bills concerned is consistent with this administration policy. It results in a substantial reduction of the reimbursable portion of the recreation and fish and wildlife enhancement costs as compared with our presentation last year.

The tremendous recreation potential attributable to Auburn Reservoir, in conjunction with Folsom Reservoir and other project facilities, would provide annual benefits of more than \$6,500,000. The costs of the unit were allocated among functions in the customary manner, resulting in an allocation to recreation and fish and wildlife enhancement of \$45,159,000, about 11 percent of the total costs. We have applied the provisions of S. 1229 to the Auburn-Folsom south unit. Of the costs allocated to recreation and fish and wildlife under those provisions \$38,959,000 would be nonreimbursable and \$6,200,000, including \$474,000 of interest during construction, would be reimbursable with interest.

Provision of capacity in the Folsom South Canal to permit it to serve as the first unit of the potential East Side Canal of the Central Valley project to deliver water the length of San Joaquin Valley would further extend the benefits of the Federal investment into areas of urgent water need. This increment contributes to the goal of maximizing net benefits of the overall development.

The cost of the Auburn-Folsom south unit, based in 1962 price levels, is \$425 million, including the cost of provisions for future additional power units. Under current price levels, the cost would not be significantly higher. The ratio of benefits to costs is approximately 3.6 to 1.

The financial feasibility of the Auburn-Folsom south unit as a part of the Central Valley project is assured, and a substantial surplus of revenues over obligations will accrue to the total project within the 50-year repayment period, associated with the Auburn-Folsom south unit.

In planning this recommended new unit of the Central Valley project, we have enjoyed the utmost support and cooperation of the State of California and many other agencies of the Federal Government. It would constitute a most worthy investment of Federal funds, with prospects of returning many times its costs to the Treasury.

I recommend the enactment of the bill with the amendments proposed in the Department's legislative report.

STATEMENT OF COMMISSIONER, BUREAU OF RECLAMATION, AUBURN-FOLSOM SOUTH UNIT, CENTRAL VALLEY PROJECT, CALIFORNIA

Mr. Chairman, the Bureau of Reclamation again presents its plan for development for the Auburn-Folsom south unit of the Central Valley project for your consideration. This proposal was considered in the 88th Congress, and after hearings before this committee the bill was reported favorably. Since we presented the plan of development in detail last year, and the record is printed, we will only summarize the physical data this year and concentrate upon changes in the financial and economic analyses of our proposal.

The feasibility of the Auburn-Folsom south unit was demonstrated in our report which was transmitted to the Congress on January 15, 1962, and was printed as House Document 305, 87th Congress. A supplemental report which was printed as House Document 171, 88th Congress, reflected revisions of the physical plan, specifically providing for a larger Auburn Dam and Reservoir and Powerplant, and correspondingly greater benefits and accomplishments than the previously reported plan.

The Auburn-Folsom south unit is a fully justified and feasible water resource development proposal designed to fit into the long-range plan for complete development of the Central Valley of California.

The plan of development consists of a large multiple-purpose storage reservoir on the North Fork, American River, a major canal to deliver water for irrigation and other purposes, and two small developments, also multipurpose in character, which are closely associated with the major features. The unit is located in central California, east and south of the capital city of Sacramento. The water supply is to be derived from American River, which originates in the Sierra Nevadas and flows westerly through the city of Sacramento into the Sacramento River and then into the Pacific Ocean.

Auburn Dam will be a high earthfill structure, rising about 690 feet above the bed of the North Fork of American River. The damsite is ideally suited by

topography, geology, and location for such a dam, being only a short distance upstream from the backwater of the existing Folsom Reservoir. The reservoir formed by the dam will have a total capacity of about 2,500,000 acre-feet, of which 2,131,000 acre-feet will be active storage. The entire reservoir will be contained within the rugged canyons of the North and Middle Forks of American River where it will form a beautiful lake covering 10,390 acres at normal water level. To assure the conservation of the enormous recreation potential of the site, we propose to acquire a total area of 37,500 acres of which 22,500 acres are privately owned.

A powerplant will be located at the toe of the dam, consisting of three turbine-driven units of 80,000 kilowatts capacity, making a total initial installation of 240,000 kilowatts. Further studies are to be undertaken after authorization of the unit to determine what provision should be made for future installation of two additional generators. If only three units are installed, the Central Valley project power system will be improved by the addition of some 613 million kilowatt-hours of energy available at load centers and by 169,000 kilowatts of dependable capacity.

Water regulated and conserved in Auburn Reservoir and the existing Folsom Reservoir will be delivered through the Folsom South Canal to the lands, cities, and streams where it is to be put to use. The concrete-lined canal will flow southerly from Nimbus Dam, by gravity, about 67½ miles to Lone Tree Creek, near Stockton. The initial canal capacity required to serve the Folsom south area is 3,500 cubic feet per second. The first 24 miles of the canal will be sized to this requirement. From that point southward, the canal will be enlarged to carry some 5,000 cubic feet per second of water for the potential East Side division of the Central Valley project in addition to the diminishing capacity required to serve the Folsom south area.

Providing new and supplemental irrigation water service to some 400,000 acres of land under the Folsom South Canal will entail construction of distribution and drainage works. We propose that we be authorized to construct such works if they are not built by non-Federal financing. The construction of deep wells will be the responsibility of the local interests.

A large area of dry land, designated the Malby area, lies south of Folsom Reservoir but too high to be served from Folsom South Canal. We propose to pump water from Folsom Reservoir, through a pipe conduit to the County Line Reservoir on Deer Creek, in the center of the Malby area. Those lands are not suitable for agricultural use, but due to their proximity to existing industrial establishments and their attractiveness for suburban residential use the proposed water supply works are needed and justifiable. By providing water supplies to such areas, suburban expansion is encouraged where it will not result in retiring productive lands from agriculture. This occurs when suburban growth takes place on the valley floor. Eventually, the diversion of our most productive lands to municipal and industrial uses, which is now occurring at a rate in excess of 1 million acres a year, will pose a serious national problem. Such developments as the Folsom-Malby proposal effectively combat this undesirable trend.

County Line Reservoir, located on the boundary between Sacramento and El Dorado Counties, will have a capacity of 40,000 acre-feet, forming a lake of about 1,600 acres. In addition to its water supply function, it will control floods on Deer Creek and be attractive for recreation and fish and wildlife purposes.

The town of Foresthill and surrounding lands, located in mountainous terrain between the Middle and North Forks of American River, has a very critical water supply problem. The readily accessible water has been fully developed, but is insufficient to support any expansion of population, industry, or agriculture. We propose to build the small Sugar Pine Dam and Reservoir on North Shirrtail Canyon Creek and a pipe conduit to deliver up to 4,400 acre-feet of water annually to the town and farms.

The Folsom south service area includes a gross area of over half a million acres of which about 400,000 acres are irrigable. More than half of the irrigable lands are now in production, making maximum use of the limited surface waters and pumping heavily upon the underground supplies. The underground water levels have been receding as the pumping exceeds the natural recharge. Water from the Folsom South Canal, properly distributed and applied would supplement the natural supplies and permit the farmers to utilize their lands for intensive and diversified crops with assurance of adequate water to mature those crops. Our estimate of the annual benefits which would accrue from this function, including the 1,340 acres on the Forest Hill Divide, is \$45,715,000.

The city of Stockton and several other towns in the Folsom south service area also are in need of supplemental water. They have been deriving the bulk of their water supplies from ground water pumping, and experiencing increasing difficulties in obtaining water in adequate amounts and of suitable quality. Many wells have gone dry and others have been abandoned or pumping reduced because of salt water intrusion. The benefits computed for delivery of supplemental municipal and industrial water supplies to that area as well as to Forest Hill and Malby are \$2,377,000 annually.

The power and energy generated at Auburn Dam will be transmitted to and integrated with the Central Valley project power system. Auburn Dam being located immediately above Folsom Reservoir will be an attractive location for generation of peaking power, especially if the potential fourth and fifth units are installed. The benefits attributable to commercial power for the initial three units are estimated at \$6,568,000 annually.

Lands and improvements along the American River are subject to destructive and unpredictable floods. Operation of the existing Folsom Reservoir during the last 9 years has protected the city of Sacramento and the American River Valley from disastrous flooding on three occasions, but it was able to do so only by releasing water to the full capacity of the leveed channel to prevent uncontrolled spilling. The highest peak flow on record occurred during the floods of December 1964, caused in part by failure of the Hell Hole Dam which was under construction upstream. If Folsom Reservoir had not been drawn down at that time, a catastrophic flood in the American River Valley and the delta could not have been prevented. Auburn Reservoir would augment the flood storage function of Folsom Reservoir. The flood control benefits for Auburn Reservoir were computed before the recordbreaking floods of recent years which have forced us to revise our estimate of probable frequency and severity of floods. The estimate of the benefit attributable to the Auburn-Folsom south unit for flood control (\$455,000 annually), therefore, is assuredly conservative.

Despite the fact that Folsom Reservoir is subject to considerable fluctuation of water levels, it has become a favorite water playground, attracting many thousands of people every year for water-oriented recreation of all kinds. Operation of Auburn Reservoir will augment the attractiveness of Folsom Reservoir by permitting more stable levels during the recreation season. Auburn Reservoir itself will be an attractive and scenic lake, surrounded by thousands of acres of land reserved for recreation and for public enjoyment of the facilities. The two smaller reservoirs will have recreational value on a smaller scale. The benefits associated with this use are estimated at \$5,932,000 annually.

American River now supports an anadromous fishery which is augmented by a hatchery at Nimbus Dam and enhanced by releases from Folsom Reservoir. Auburn Dam will provide water in proper amounts and at suitable temperatures to further enhance the existing fishery. Resident fish in Auburn Reservoir and in the two smaller lakes will support many fishermen days of sport. The fishery on the existing Folsom Reservoir will be greatly increased as a result of the change in reservoir operation. The benefits associated with this function are estimated at \$570,000 annually.

The cost of construction of the Auburn-Folsom south unit based on 1962 prices is estimated as follows:

Auburn Dam, Reservoir, powerplant and associated facilities	\$282, 105, 000
Folsom South Canal facilities	86, 086, 000
Forest Hill Divide facilities	7, 523, 000
Folsom-Malby facilities	11, 916, 000
East Side Canal (enlargement of Folsom South Canal)	23, 540, 000
Subtotal	411, 170, 000
Provision for future power units	13, 500, 000
Total construction cost	424, 670, 000
Rounded	425, 000, 000

We have assumed that the cost of distribution systems, totaling \$44,087,000, which is included in the costs of the Folsom South Canal and Forest Hill Divide in the tabulation, will be a Federal cost. They may be built by local interests under Federal or non-Federal financing plans.

On an annual basis, construction costs, interest during construction, and operation, maintenance and replacement costs are \$17,268,000. The adjusted total annual benefits, including allowances for Central Valley project power use and

use of existing project storage, is \$61,418,000. The ratio of benefits to costs, therefore, is 3.6 to 1. Both the Forest Hill Divide and Folsom-Malby developments, if computed separately, would have favorable benefit-cost ratios.

The allocation of costs which we presented last year was consistent with the allocation procedure we have followed for many years in reporting on the overall Central Valley project and on new units. It included an adjustment to compensate for the reimbursable functions carrying the operation, maintenance, and replacement costs that would otherwise be assigned to the nonreimbursable functions. The capital cost allocations to the reimbursable functions were decreased and those to the nonreimbursable functions were increased through this adjustment. The committees of the Congress indicated that this procedure is not satisfactory and therefore we are now presenting our cost allocation and repayment analyses without that adjustment.

The costs previously allocated to fish and wildlife mitigation are no longer considered nonreimbursable and are analyzed as a project cost in the same manner as other reservoir right-of-way costs. They are allocated among all functions of the unit.

The interest rate used for the benefit-cost analysis is increased from 3 to 3½ percent, the rate certified by the Secretary of the Treasury for this year. Actually, the net effect of these adjustments between this year's and last year's allocations is less than 1 percent in any figure.

Of greater importance is the application of the principles of the administration's proposed Federal Water Projects Recreation Act, which we have recently discussed with this committee. That legislative proposal provides that all joint costs allocated to recreation and to fish and wildlife enhancement shall be non-reimbursable. One-half of the separable costs allocated to those purposes shall be nonreimbursable and the other half of the separable costs shall be reimbursable from some non-Federal source.

Application of these principles results in the following allocation of costs:

Reimbursable costs:

Irrigation.....	\$170,637,000
Municipal and industrial water supply.....	27,564,000
Commercial power.....	136,843,000
Recreation and fish and wildlife enhancement.....	5,726,000
Total reimbursable.....	340,770,000
Deferred use—east side division (reimbursable in whole or in part).....	23,540,000
Total reimbursable.....	364,310,000
Nonreimbursable:	
Flood control.....	9,324,000
Recreation and fish and wildlife enhancement.....	38,959,000
Total nonreimbursable.....	48,283,000
Total.....	412,593,000
Minus power transfer costs.....	1,423,000
Total.....	411,170,000
Construction cost.....	411,170,000

Repayment of the costs allocated to irrigation, municipal and industrial water supply, and commercial power within 50 years of the date the unit goes into service is demonstrated by the Central Valley project repayment analyses. At the end of that 50-year period all the obligations will have been retired and revenues in excess of requirements in the order of magnitude of \$400 million will have accumulated to assist in the development of additional increments of the Central Valley project. Attached to this statement is a summary of the overall Central Valley project payout analysis, demonstrating the effect of adding the Auburn-Folsom south unit.

The proposed Federal Water Projects Recreation Act sets forth the requirements for non-Federal cost sharing on recreation and fish and wildlife enhancement costs. We have not yet attempted to obtain any commitment from a non-Federal agency regarding its willingness to assume the financial responsibility required.

The Auburn-Folsom south unit is fully justifiable with tangible benefits exceeding costs in the ratio of 3.6 to 1 and with almost 90 percent of its costs being

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reimbursable. As a Federal investment, the construction of the Auburn-Folsom south unit will return many times its costs to the United States through direct repayment, avoidance of flood damages, and collections of taxes from the augmented economy which will result.

[In thousands of dollars]

	Base Central Valley project ¹	Auburn- Folsom south	Central Valley project with Auburn- Folsom south
Cost allocation:			
Reimbursable:			
Irrigation	888,770	170,637	1,059,407
Municipal and industrial	56,774	29,655	86,429
Commercial power	252,444	148,855	399,876
Waterfowl conservation	9,196	0	9,199
Recreation and fish and wildlife enhancement	0	6,200	6,200
Total reimbursable	1,207,187	355,347	1,561,111
Nonreimbursable:			
Flood control	73,844	9,324	83,168
Navigation	12,177	0	12,177
Fish and wildlife mitigation	8,992	0	8,992
Recreation and fish and wildlife enhancement	25,797	38,959	64,756
Highway relocation	2,646	0	2,646
Total nonreimbursable	123,456	48,283	171,739
Deferred use	6,200	23,540	29,740
State share of San Luis unit	176,760	0	176,760
Total project cost	1,513,603	427,170	1,939,350
Repayment of reimbursable costs:			
Allocated costs repaid:			
Irrigation	737,983		883,618
Municipal and industrial	78,717		138,398
Commercial power	391,612		534,108
Waterfowl conservation	² -1,125		-1,213
Recreation and fish and wildlife enhancement	0		6,200
Total repayment	1,207,187		1,561,111
Interest payments:			
Municipal and industrial	42,606		50,238
Commercial power	53,607		96,999
Total interest	96,213		147,237
Indicated surplus:			
Municipal and industrial	57,413		129,067
Commercial power	364,157		333,453
Total	³ 421,570		462,520

¹ Figures consistent with fiscal year 1966 budget submittals.

² Water supplied to San Joaquin grasslands under Public Law 674-83. Revenues do not completely cover costs of water service.

³ Base Central Valley project would pay out in fiscal year 2018. Addition of Auburn-Folsom south unit will extend 50-year repayment period to fiscal year 2022. Addition of 4 years' costs and revenues to base project would increase indicated surplus to \$521,136,000, which is directly comparable to the indicated surplus of \$462,520,000 with Auburn-Folsom south unit added.

Secretary UDALL. Mr. Chairman, I testified 2 days ago in the House on this same legislation. I was pleased and a little bit surprised too to learn yesterday that the House subcommittee, after 2 days of hearings approved the bill. When I testified there was very heavy attendance, most of the subcommittee members were there, and after 2 days of hearings, and relatively brief consideration, unanimously approved the bill in the subcommittee. I think this bears much testimony to the soundness of the project and bears out the statement I made the other day that of all the major reclamation projects which have come across my desk in the last 4 years in terms of economic benefits, and cost ratio and soundness, this was perhaps the best.

I think if I may say so too, although he is not here, I would like to pay a tribute to Congressman "Bizz" Johnson of California. I think the action of the committee yesterday was a great tribute to his skill as a legislator and to the way he has handled the legislation over the last 4 years in working out the details.

I am personally familiar with this project, Mr. Chairman. I have been at the damsite. I have looked over the valley and the area where this project will be constructed. As this committee knows we have been working intensively on this legislation.

The Bureau of Reclamation has been advancing its planning work during the last 4 years. In January 1962 we sent out original report up. We testified in 1962. We appeared again in 1963. This committee has considered this legislation before. I think we have here really a model multipurpose project.

This is an area of California where we will key this into the Central Valley project. It will provide flood control that the city of Sacramento badly needs. It will provide water supply for municipalities that are going to have serious water supply problems in the future.

Also, it will supply water for irrigation. I am sure because it is located in a beautiful setting, the outdoor recreation and wildlife benefits and opportunities will be tremendous. In every way, Mr. Chairman, I think this project measures up.

There is one other thing I would also like to add, this is also a fine hydroelectric power project. We think we can phase this in in such a way that when we have to withdraw substantial quantities of pumping power from the Bureau of Reclamation system in the Central Valley to supply the pumps on the San Luis project that this power can come on the line soon thereafter and enable us to maintain the supply of power to our customers as well as to our system in this region.

This, I think is a very fine project. I can testify for it this morning not only in the usual way but very enthusiastically. We hope that the committee can act on this legislation and pass it this session. Thank you very much.

Senator ANDERSON. Mr. Secretary, Interior's report on the Auburn-Folsom project recommends amendments to bring the provisions into line with the new bill for uniform cost allocation for recreation and fish and wildlife enhancement. Do you think they should be adopted?

Secretary UDALL. Yes, the suggestions we have in our report will strengthen the legislation and clarify the reports, Mr. Chairman.

Senator ANDERSON. Pacific Gas & Electric Co., in a letter I will incorporate into the record at this point, wants amendments on the project bill to require the Secretary to give them the opportunity to bid on the construction of the transmission line.

(The letter referred to follows:)

PACIFIC GAS & ELECTRIC CO.,
San Francisco, Calif., March 24, 1965.

HON. HENRY M. JACKSON,

Chairman, Interior and Insular Affairs Committee, U.S. Senate, Washington, D.C.

DEAR SENATOR JACKSON: Your committee has given consideration to legislation which would authorize construction of the Auburn-Folsom south unit of the Central Valley project in California. S. 599 has been introduced and is pending before your committee.

The bill, as introduced, contains a provision authorizing a "necessary electric transmission system for interconnection with the Central Valley project system."

Department witnesses have testified that it would be their intention to construct 110 miles of transmission lines from the Auburn Dam to Tracy, Calif.

The cost, according to Department estimates made in 1962, would amount to approximately \$8,720,000.

As your committee knows, the transmission facilities of the Central Valley project have been integrated with the network transmission system of Pacific Gas & Electric Co. Transmission and interchange service is provided over this interconnected system. (See enclosed map.)

Accordingly, we are able to provide the necessary transmission service in connection with this project at less cost to the project than if the Federal Government were to construct the proposed lines. We respectfully suggest that your committee amend the bill now before you to include a provision which would make it possible for the necessary transmission service to be provided by a local public or private agency. This would also reduce the construction cost of the project by approximately \$8,720,000 and thus make possible the delivery of water to the project water users at a lower cost.

Such a provision was included in the legislation authorizing the San Luis unit of the Central Valley project. This provision provides:

"* * * no facilities shall be constructed for electric transmission or distribution service which the Secretary determines, on the basis of an offer of a firm 50-year contract from a local public or private agency, can through such contract be obtained at less cost to the Federal Government than by construction and operation of Government facilities."

Appropriations for transmission lines on the San Luis project were requested by the Bureau of Reclamation, but funds were denied by Congress because of the existence of this provision and an offer from our company, which the Bureau has accepted.

We hope that the Auburn-Folsom unit will be authorized by the Congress. We also hope that the San Luis-type amendment will be included in the legislation. We will be glad to discuss this matter with you or supply you with any additional information which may be of help to you.

Sincerely yours,

ROBERT H. GERDES.

Senator ANDERSON. Will you comment on that?

Secretary UDALL. This came up the other day. I would like the Commissioner to comment on this.

Senator ANDERSON. The House adopted some language which is somewhat different from the Pacific Gas & Electric language. I don't know if you favored the House language or the P.G. & E. language.

Secretary UDALL. I would think, Mr. Chairman, our position as in most cases would be in favor of the House language. We did discuss this with the committee the other day. I haven't seen the amendment.

Commissioner DOMINY. The House language as I see it provides that no facilities excepting those required for interconnection of the Auburn powerplant and Folsom switchyard and those connecting the Folsom switchyard and Elverta substations will be constructed by the Bureau except after consideration on the basis of a firm offer to wheel power on a 50-year contract. This language would not be out of line at all. It would be in accordance with our testimony before the House, Mr. Chairman. The two lines that we really need as Federal lines would be the line that would connect Auburn powerplant with our Folsom powerplant and switchyard which is a 20-mile double circuit 230-kilowatt line, and a line of about the same distance from the Folsom powerplant over to our Elverta switchyards where we are interconnected with Sacramento Municipal Utility District and Pacific Gas & Electric Co.

We think those two ought to be Federal lines because they tie our systems together. The third and major line that will be needed here—

Senator ANDERSON. Excuse me. You say those two should be Federal lines?

Commissioner DOMINY. Yes, sir.

Senator ANDERSON. How would the legislation as approved by the House committee affect the issue?

Commissioner DOMINY. The House recognizes that in its language. The House language provides for those two lines. The third and major line that will be needed to get this power from Auburn by way of Folsom down to Tracy will be another 230-kilowatt line double circuit.

We are perfectly willing to wheel instead of building this line. If there is transmission capacity already in existence that others can supply more cheaply than the Federal Government, and we think this is possible, we are perfectly willing to wheel and the House language provides for it adequately. I recommend that this be adopted.

Senator ANDERSON. Then there is the other amendment proposed by P.G. & E.

No facilities shall be constructed for transmission and distribution service which the Secretary determines on the basis of an offer of a firm 50-year contract from a local public or private agency and through such contract will be obtained at less cost to the Federal Government than by construction and operation of the Government facilities.

Just what does that mean? If the two submit exact bids for it, you have to take the one from the private utilities?

Commissioner DOMINY. Yes. This is exactly what we did in the case of the San Luis project. We computed what it would cost us to build and amortize a line. Then we compared that with an offer from the Pacific Gas & Electric Co. to provide the same service.

Their offer did compete favorably with the costs we would have incurred. We are accepting the company's offer and will not be building the line.

Senator ANDERSON. Do I understand, Mr. Secretary, that the bill which was reported by the subcommittee in the House is satisfactory to the Department of the Interior?

Secretary UDALL. Very much so.

Senator ANDERSON. With the amendments of the House?

Secretary UDALL. Yes.

Senator ANDERSON. Senator Kuchel, do you have any questions?

Senator KUCHEL. No; I don't. Surely as the author of the bill I am glad to say publicly, Mr. Chairman, that with respect to the amendments recommended by the Department I am quite amenable to them. I think the fact is that the Department has had, and I speak now as a Californian, an excellent record of complete cooperation with the State authorities respecting the problem of water rights under State law. Is that not correct?

Commissioner DOMINY. Yes, sir.

Senator KUCHEL. Surely I would not wish that this bill be used as a vehicle to try to set at rest any remaining problems which may exist on a jurisdictional basis between the Federal Government and the State.

I think the committee might grapple with the problem of section 5 in several ways. One would be by considering the language proposed by the Department, perhaps another would be simply to eliminate that section from the bill.

With respect to the problems concerning the construction of any transmission facilities it does seem to me that the House of Representatives, in adopting the amendments in that area, has reflected not only the sound position which the Department has taken but I think also by all constituents of mine in California, including the position which the Pacific Gas & Electric Co. has taken.

Under those circumstances surely it would be in the public interest I think for me to say to you, Mr. Chairman, that I would be very glad to accept the language adopted by the House subcommittee this week.

Last year the Secretary and Commissioner spread on the record specific answers to questions that were raised by this committee with respect to feasibility. In the interest of time, if the members of the committee do not object, I would simply ask that the record of our hearings on this piece of legislation in the last Congress be incorporated by reference in this committee.

Senator ANDERSON. That has already been done.

Senator KUCHEL. Lastly, I wish also to pay my respects to my friend and colleague in the House of Representatives, Congressman Harold "Bizz" Johnson, who has been an assiduous advocate of this legislation and whose labors were crowned with success yesterday by the unanimous action of the subcommittee in recommending their version of S. 599.

Secretary UDALL. As the Senator knows, a decision like this in the House is very rare on a project of this magnitude.

Senator KUCHEL. Thank you, Mr. Secretary.

Senator ANDERSON. Do I understand you don't mind the withdrawal of section 5?

Senator KUCHEL. I think what I would prefer to do, Mr. Chairman, is to discuss this very frankly in our subcommittee executive session with the possible alternative that section 5 simply be deleted from the bill rather than substitute any other language. I am amenable to reason on that.

But rather than say now that I wish to substitute the language which the Department has made, I think the Department itself would not look with disfavor on the deletion of this section in its entirety. Am I right, gentlemen?

Secretary UDALL. Yes, that is correct. Our suggested amendment cures what we considered a problem which could also be eliminated by deletion, Mr. Chairman.

Senator ANDERSON. Let us have the record clear. The Department of the Interior does not object to deletion of section 5?

Secretary UDALL. That is correct.

Senator ANDERSON. You will be just as satisfied by that course as by adoption of the language the Department suggested. You are perfectly satisfied to take it out.

Secretary UDALL. That is exactly our position.

Senator ANDERSON. Senator Allott.

Senator ALLOTT. I have just one question which occurs to me. What land acquisition is going to be involved in this matter for recreation and fish and wildlife?

Secretary UDALL. I will ask the Commissioner to answer this.

Commissioner DOMINY. I have that information here. The cost of acquiring recreational land will be \$2,800,000. There are 9,190 acres of land in private ownership that would need to be acquired and 2,773 acres of land that is in public ownership that we will be using.

Senator ALLOTT. Are you speaking, Mr. Dominy, of just recreation, or acquisition both for recreation and for wildlife purposes?

Commissioner DOMINY. Yes. Those are the lands that are required solely for recreation and fish and wildlife enhancement in connection with this project.

Senator ALLOTT. 9,000 acres roughly of private lands?

Commissioner DOMINY. Yes, sir. These are not highly developed lands for the most part. This is in a rough canyon section. The lands are not valuable in themselves for agriculture or other uses.

Senator ALLOTT. Would they be distributed somewhat evenly around the reservoir site?

Commissioner DOMINY. Yes. The bulk of it is land out beyond the waterline of the reservoir.

Senator ALLOTT. When the reservoir reaches its capacity of 2½ million acre-feet, how long a reservoir are we talking about?

Commissioner DOMINY. Let me ask Regional Director Pafford.

Mr. PAFFORD. The Auburn Reservoir at normal pool level will be about 25 miles long.

Senator ALLOTT. What is the maximum width?

Mr. PAFFORD. I don't know the exact measurement. I would say at the fork of the two streams probably ½ to 2 miles.

Senator ANDERSON. Senator Moss?

Senator MOSS. I have no questions at this point.

Senator ANDERSON. Senator Jordan.

Senator JORDAN. Mr. Secretary, what is the total cost of the project?

Secretary UDALL. The authorization ceiling figure we have in the bill is \$425 million.

Senator JORDAN. How much of that cost is allocable to reclamation?

Commissioner DOMINY. The cost allocation for irrigation is \$170,636,000. The municipal and industrial water, \$29,655,000. The commercial power, \$148,855,000. Now all of those, gentlemen of the committee, are reimbursable, power and municipal water with interest.

Then the nonreimbursable allocations amounting to 10 percent of the total cost of the project, flood control, \$9,324,000; for recreation and fish and wildlife enhancement, \$38,959,000. Then there is a reimbursable cost for recreation and fish and wildlife of \$6,200,000. This would be true under this new cost-sharing bill which has been recommended. The Congress is considering it now.

Senator JORDAN. Of the \$170,637,000 allocable to irrigation, how much of that will the water users pay?

Commissioner DOMINY. The water users will pay about 62 percent of it, which is a very high percentage of repayment. The power will pick up the balance of the irrigation allocation.

Senator JORDAN. That is a high percent, 62 percent?

Commissioner DOMINY. That is correct.

Senator JORDAN. Tell me how much will be the combined storage capacity of Auburn and Folsom Reservoirs?

Commissioner DOMINY. We will have 2½ million acre-feet of water storage in Auburn and a little over a million acre-feet in Folsom. The

combined projects then will give us complete control of the American River, taking into account even the most recent storm of record which was the highest runoff in any like period of time.

I am sure you recall, Senator, the stories that indicated that had the Christmas storms lasted just 10 more hours, runoff would have exceeded the capacity of the flood control facilities on the river, and Sacramento would have had a serious flood.

We were releasing up to the maximum capacity of the river channel as leveed and controlled, and had been for several days in an effort to contain that storm runoff.

We were able to control it but had just a few feet of storage capacity left in Folsom Reservoir when the rains ceased.

Senator JORDAN. Yes; I happened to be down there at that time. I know how fortunate you were that you had cooperation from the weather. Tell me, what is the average water supply, annual water supply, for the basin that is served by these two storage projects?

Commissioner DOMINY. There is an irrigation economy in the area served—

Senator JORDAN. Yes; but what is the runoff of the area above the Folsom Reservoir?

Commissioner DOMINY. Yes; I can give you some figures. The maximum annual runoff of record for a full year in the American River measured at the Auburn site—that does not take into account the tributary that comes in below there—is 2,600,000 acre-feet. The average annual runoff at Auburn is 1,550,000 acre-feet.

Senator JORDAN. So what you are going to accomplish with this additional storage is complete control of the river.

Commissioner DOMINY. That is correct, with the two dams and of course Nimbus is nothing but an after bay. With the two storage lakes at Auburn and Folsom we will get complete control of the American River.

Senator JORDAN. Will you describe for us a little bit of the function of Nimbus Dam. Will it reregulate both of the projects?

Commissioner DOMINY. Yes; it is an after bay dam which is very valuable for power production. It helps us regulate our releases from the upstream reservoirs to get maximum yield of power and control of the river. It is also the diversion point for the irrigation canal.

This is where the water will actually be taken out of the river and placed into the Folsom South Canal.

Now you understand that this bill before you provides the first 24 miles of that Folsom South Canal will be built to the capacity required only for the Folsom south unit, 3,500 cubic feet per second. At the point 24 miles down, 5,000 cubic feet per second is proposed to be added to it because we can save a lot of money now by building the Folsom South Canal of sufficient capacity from that point on southward take care of the water and ultimately will be needed on the east side division which will be brought in by pumping out of the Sacramento River. Under the east side proposal which will be before the Congress soon there will be a huge pumping plant on the Sacramento River near Hood, moving 5,000 cubic feet per second of water over to this canal.

If we put the capacity for the east side canal in here now we can save \$16 million and avoid all the problems of double right-of-way and lost motion of construction. So this bill authorizes us to do that on a deferred basis.

Senator JORDAN. How many acres of new land will be brought in?

Commissioner DOMINY. Under the Auburn-Folsom south unit we are going to serve a little over 400,000 acres and approximately 100,000 acres of that is land not now being irrigated.

Senator JORDAN. About 300,000 will get supplemental water?

Commissioner DOMINY. That is correct. It is an underground irrigation area that is in trouble. The ground water is inadequate. It is similar to the situation served by the Friant-Kern Canal, Madera Canal, and the San Luis project.

Senator JORDAN. What is the benefit-cost ratio?

Commissioner DOMINY. This project has a fine benefit-cost ratio of 3.6 to 1.

Senator JORDAN. That is on a 100-year basis?

Commissioner DOMINY. A 100-year period of analysis.

Senator JORDAN. Have you calculated it on a 50-year basis?

Commissioner DOMINY. I am sure we have a figure on the 50-year basis.

Senator JORDAN. Could you give us that figure for the record?

Commissioner DOMINY. Thank you. You of course recognize that these projects will serve for 100 years. We think it is perfectly proper to compute their benefits for at least 100 years. The benefit-cost ratio, computed on a basis of 50 years, would be 3 to 1.

Senator JORDAN. I like this project. I supported it last year and I intend to support it this year.

Thank you.

Senator KUCHEL. Mr. Chairman, may I ask the Secretary or Commissioner, would this project make it possible to provide a supplemental water supply for municipal and industrial purposes for use of the East Bay area?

Commissioner DOMINY. There is very definitely a great quantity of water that is proposed for municipal and industrial water purposes in this project. Above the irrigation requirement, the yield of this combined Auburn-Folsom system would be 139,000 acre-feet of municipal industrial water available on an annual yield basis. If the East Bay Municipal Utilities District wants to contract with us for some of that water let them step up and show the color of their money. I think we will be able to work out a deal.

Senator KUCHEL. Thank you very much.

Senator ANDERSON. Mr. Secretary, yesterday we had a discussion of the Garrison project in North Dakota on this question of changing the interest rates. Three-percent interest is charged against it now. They propose to drop that to two and a half percent at a time when the interest rates generally are going higher instead of lower.

The witnesses of the Department testified in favor of such a reduction. What is the situation with respect to interest rates on Auburn-Folsom?

Secretary UDALL. I will ask the Commissioner to answer that.

Commissioner DOMINY. Mr. McCarthy.

Mr. MCCARTHY. The interest rate used for the Auburn-Folsom south unit analyses is $3\frac{1}{8}$ percent. The basic Central Valley project is based on 3 percent for all the power facilities up to date. From now on we will use the current rate as prescribed under the Water Supply Act.

For the Auburn-Folsom south unit we used the $3\frac{1}{8}$ -percent-interest rate.

Senator ANDERSON. This situation exemplifies the difficulty into which we get, Mr. Secretary. We receive a request on the Missouri River Basin to drop their interest rate from 3 to $2\frac{1}{2}$; yet on the very next project we consider the rate is $3\frac{1}{8}$.

I wish sometime you would ask the people to review that recommendation for Garrison Reservoir because the Department's position might make a difference in the way the people approach it.

Commissioner DOMINY. If I may comment just a moment I am sure the record on the Garrison diversion unit brought out the fact that the recommendation was justified on two bases. No. 1, that all of the Corps of Engineers reservoirs that it built elsewhere were calculated at $2\frac{1}{2}$ -percent-interest rate. There was argument therefore that the Missouri River Basin project should have the same privilege on corps-constructed reservoirs so that they might have the same payout that other areas of the country are enjoying.

The second argument is that we are now attempting with equity to develop a Missouri River Basin project payout that approaches as nearly as possible the approved payout which Congress has endorsed on the Colorado River storage project.

We had no 50-year payout requirement in the Missouri Basin authorization originally but in an effort to conform it we are coming up with this new payout proposal. We feel justified in putting the corps dams in at $2\frac{1}{2}$ percent because that was the interest rate paid on other corps structures elsewhere in the United States.

Senator ANDERSON. I don't wish to clutter this record on Auburn-Folsom up with a long discussion of Garrison. If you can give me an explanation why projects built by the Army Corps carry one interest rate and projects built by the Bureau of Reclamation carry another, I would like that in the record.

Commissioner DOMINY. I can't give you an explanation. Those are the facts.

Senator ANDERSON. That is right. There are other facts. The facts are that REA gets 2 percent. Will you be up here next year and recommend that we make reclamation projects carry the 2 percent?

Commissioner DOMINY. No, sir; we are not recommending that in the case of this project. We have a special circumstance as I outlined in the Missouri Basin where we are attempting to bring it up to current policies.

Senator ANDERSON. Part of those circumstances are the rates charged for electric power. If you gave the power away you could justify a rate of 1 percent. Why not get for the power what it is worth?

It may be all right, Mr. Secretary, but I do think you will meet yourself coming back some day if you start to revise contracts already entered into and projects already underway. The point was made that we bailed out Colorado storage project by the Norman project. The true answer is that not a single project so far as I know was helped by it.

The whole story was that you didn't want to bother the other States in completing their projects just because there had been a provision written into the Upper Colorado storage project by the then Bureau

of the Budget which they assured us was going to be adequate for all time to come.

It wasn't until we go into the question of what yield it would produce that we found out that the testimony was not satisfactory and we had to change it back to the actual rate. Now those rates are going up steadily.

Secretary UDALL. I would agree with your main point. I think we need to develop a logical, coherent system of approach so far as we can. This I hope is what we are headed for.

Senator ANDERSON. These people have done what I think is the right thing. They have put in what the formula now is, $3\frac{1}{8}$ percent interest. Sure they would like it for $2\frac{1}{2}$. But they have come in with a reasonable proposal on it. The project is therefore feasible and it will not damage the budget situation or wreck the Treasury. I think it is a commendable situation.

Senator KUCHEL. Mr. Chairman, I just want to say for the record I am most grateful for your last statement because the problem that was raised here yesterday with respect to interest rates on Garrison, which has plagued and exasperated the fine mind of the chairman, is not present, as he has so well observed just now, in this legislation.

Let the record clearly show the sympathetic interest of the chairman.

Senator ALLOTT. Mr. Chairman?

Senator ANDERSON. Senator Allott?

Senator ALLOTT. I do think, if I may say so, and I don't think this record should be cluttered either and I don't want to introduce extraneous facts into this particular record, but I do commend your reading the record of yesterday on this matter because many of the tax problems that we are going to face as a result of this suggestion by the Bureau were discussed at some length.

It is going to cause not only the Interior Committees of the House and Senate but the individual members and particularly the Members of Congress from Western States, the reclamation States particularly, a lot of grief and a lot of headaches.

I can see them coming up almost as fast as you can see the sun going up if you happen to get up that early in the morning. I do hope that you will reconsider this suggestion and consider some of the ramifications that are almost bound to come.

I can't help feel personally—I am sure some of the other members of this committee do also—that we are going to open a pandora's box which we will find hard to close.

Commissioner DOMINY. I appreciate the committee's views on this. I am not in basic disagreement at all. I would like to say only one thing more. This is an effort on the part of the administration to solve now something that wasn't taken care of in the 1944 Flood Control Act which authorized the Missouri River Basin. We are not sending up current projects—

Senator ANDERSON. What was that?

Commissioner DOMINY. There was no spelling out of some of these details.

Senator ANDERSON. The basic law applied and Senator Millikin, who to my mind had one of the smartest financial brains I have ever encountered in a long time, was smart enough to do that. He knew what

the rate was. You didn't have to worry about Gene Millikin understanding perfectly.

Commissioner DOMINY. A pattern has developed over a 21-year period which is not in conformance with the payout requirements of the Colorado Storage Project Act. Now, in an effort to adjust the Missouri River Basin, to get it into that pattern, we have made the study. With the blessing of the Bureau of the Budget, after it understood the whole package, it concurred in the adoption of the 2½-percent interest on the corps structures which was consistent with the pattern elsewhere on corps structures.

Senator ANDERSON. What did you do with the San Luis Dam; what is its rate of interest?

Commissioner DOMINY. It is 3 percent.

Senator ANDERSON. How would you justify putting on the poor Northwest country that has no factories, no development at all, a high rate like that when 2½ percent is to be applied to North Dakota?

Will you go back and change that too?

Commissioner DOMINY. No, sir; Reclamation has always charged 3 percent on reclamation structures. Chief Joe and the others are 2½. There is Chief Joe right below Grand Coulee Dam. Why is it not fair to allow corps built structures in the Missouri Basin to have 2½ percent if that is the pattern approved for the corps in the Columbia River Basin?

Senator ANDERSON. If you were talking about the Colorado Basin project and what we did, we would be glad to allow the same interest apply that has applied to the rest of the reclamation projects. That is 3 percent.

A special message came up from the Bureau of the Budget which said we want the rates to reflect what it is costing the Federal Government for money. After much discussion we agreed we would all amend the bill because, after all, the President sent the Bureau of the Budget message up and he was going to have to sign the bill.

After we made the changes, we found out that the President meant something entirely different. He was going to take the market quotation in a stringent period. Thus the rate would be very high.

That was not what was contemplated at all. I would have been perfectly happy to put the Colorado storage project then at 3 percent. Instead of that we put the formula in. I don't believe you will solve one problem by doing in North Dakota something contrary to what you are doing in every other part of the country.

I don't see any reason why a Corps of Engineers project is entitled to 2½ percent and the Bureau of Reclamation project is 3 percent. We all know what the circumstances are. It is competition between two services. One gets their hands on construction and it is unfair to the Bureau of Reclamation to let the Corps of Engineers outbid you in that particular field in my opinion.

But we will get to that as we go along. I hope you will take another look at it. You will get yourself in quite a bit of trouble.

For the record, Mr. Secretary, section 3 says:

The Secretary is authorized as a part of the Auburn-Folsom south unit to construct, operate, and maintain or otherwise provide for basic public outdoor recreation facilities, to acquire or otherwise provide for include within the project area such adjacent lands or interests therein. * * *

As long as the project stands for 100 years you have the right to go in and acquire anything you want to. You did explain to Senator Jordan that 9,000 acres is what you had in mind. I would like to get some sort of commitment. A future Secretary could say they gave us unlimited power to take 100,000 acres on it and attach it to recreation. It is not your purpose to do that.

Secretary UDALL. No, it is not. I have seen this area. It is a prime recreation area. I think the Bureau of Reclamation does an outstanding job in planning for outdoor recreation. We will acquire this and that is it.

Senator ANDERSON. When you have done that and the project is completely finished and built will it not be your understanding that the Congress ought to be consulted before you acquire more of this same type of land.

Secretary UDALL. I would certainly want to make a very clear record on it.

Senator ANDERSON. That is fine.

Senator ALLOTT. May I ask another question?

Senator ANDERSON. Senator Allott?

Senator ALLOTT. Would you object to a limitation upon the broad powers contained in section 3?

Secretary UDALL. It would depend, I think, Senator, on how you framed it. I wouldn't want to make a broad statement on that.

Senator ALLOTT. I would like to leave them free to acquire such lands as they need for recreation purposes as they build it. They are going up in the canyon country and so forth. It is not very good for cultivation of crops.

It is good for recreation purposes. I think your statement today will be useful to us. Could we do it this way? Could we have an understanding that if the plans involved in the acquisition of very large tracts are completely different from what you testified to this morning you will come back and tell the Congress about it.

Commissioner DOMINY. Certainly. I agree with what the Secretary just said that this is an area where there is still some controversy about the right of eminent domain to acquire land for recreation purposes.

It has been tested in the courts and the courts have supported it. Certainly it ought to be done, not only in an openhanded fashion, but it ought to be confined to those lands that are absolutely essential to develop for public use at the tremendous public expenditure that is to be made at the Auburn Dam.

Senator ALLOTT. You don't know, Mr. Dominy, what some future Secretary might deem to be necessary for his enjoyment. Now the Bureau studied this thoroughly and we have had it before us, I believe this is our third time, is it not, Mr. Chairman?

Senator ANDERSON. The fourth time actually.

Senator ALLOTT. The fourth time. And you have said this morning that 9,000 acres were necessary for recreation. Somebody might come along under the broad general powers contained in section 3 and decide that 40,000 acres is what they need for it. We have an obligation to the people we represent and I think if there is any decided variance the Congress should pass on it.

As I understand it, the Secretary has told the chairman this would be done if there is any variance in the figure.

Secretary UDALL. Let me direct myself to this because I have had considerable personal experience with one of these reservoirs recently. I want to make it plain it is not quite as clear and simple in terms of acreage as one would think. I refer to the Lake Powell Recreation Area which Senator Moss and I and my Department have been wrestling with for the last year.

Here is an area set aside. It is to be a national recreation area. I don't know what ultimately is the hope on this. We went back and reviewed it and we ended up reducing the area.

This was all, of course, public lands. We found out that in terms of the present recreation concepts that we wanted to develop that we wanted to add some areas here, and some areas which had been put in earlier and hadn't been as thoroughly studied as they should have been—should have been eliminated.

We do need some flexibility as we go along. I think the point that Senator Anderson is making is that once we get the project completed—we have a recreation complex laid out—that then at that point if we want to make major additions we ought to come back to the committee. We do sometimes need putting and taking because oftentimes the people who look at it in its early planning stage don't have all the answers. We do need some leeway I think.

Senator ALLOTT. I agree with that. It is wholly plausible and wholly reasonable. I just think there ought to be some congressional control over it.

Senator ANDERSON. We might put something in the report.

Thank you very much, Mr. Secretary.

Senator KUCHEL. Mr. Chairman, at this point in the record I would like to include some of the many resolutions received from local agencies, both public and private.

Senator ANDERSON. Without objection all of the resolutions will be included, following Senator Murphy's statement.

STATEMENT OF HON. GEORGE MURPHY, A U.S. SENATOR FROM THE STATE OF CALIFORNIA

(Prepared for presentation to the Irrigation and Reclamation Subcommittee of the Senate Committee on Interior and Insular Affairs * * * at a hearing on S. 599, to authorize construction of the Auburn-Folsom South unit, American River division, Central Valley project, California, under Federal Reclamation laws * * * at 10 a.m., on Wednesday, March 31, 1965, * * * in room 3110, New Senate Office Building, Washington, D.C.)

I always consider it a privilege when I have an opportunity to present my views to a group of my colleagues in the Senate and it is an especially satisfying privilege when I am able to comment on legislation as important and worthy as S. 599, which I have the honor of cosponsoring with the senior Senator from California, the Honorable Thomas H. Kuchel.

As the Members of the Congress know, and as all Californians know, Senator Kuchel has jointed in bringing before the Congress at least half a dozen bills regarding this particular unit of the American River division of the great Central Valley project.

These efforts—efforts in which I now have the privilege of joining—have resulted in a deep and thorough understanding of the necessity for the projects included in S. 599.

I sincerely hope that this knowledge will be the basis for prompt and favorable action on the legislation.

Although I have been concerned with and have studied California's water problems for all of my adult life, it would be presumptuous of me to try to stress to my colleagues on the Interior Committee the critical nature of the water problem facing the Nation, and especially California.

I would, however, like to remind the members of this subcommittee and of the entire committee that the President himself directed his attention to the water problem earlier this week and his concern was obvious.

In addition, I would like to quote several comments by Secretary of the Interior Stewart L. Udall concerning the specific projects in question; that is, those included in S. 599:

"The value of this proposed project, a model of the multipurpose water resource development, is demonstrated by its unusually high benefit-to-cost ratio of 3.6 to 1 * * *.

"There is an urgency to the Auburn-Folsom south unit as a logical next addition to the Central Valley project, for many of the areas it will serve are plagued persistently by drought, while much needed water flows unused and often destructively down the American River to the sea. The State of California cannot undertake this merited project because of its tremendous obligation of \$1.7 billion in other critically needed water supply works * * *.

"It is my opinion that because of the urgent water and power needs, the benefits to the State and to the Nation and the leadtime between authorization and actual construction, we should move forward on this proposal as soon as possible. It is my hope that the Congress will agree that the Auburn-Folsom south unit is the next logical addition to the Central Valley project where the Federal Government has been so successful in making an investment in multiple-purpose projects which have in turn greatly enhanced the economy of the Nation."

Even I, as a cosponsor of the bill, could hardly offer a stronger or more definite statement in favor of immediate approval of the legislation than the one in which Secretary Udall used the arguments I have just quoted.

However, I would like to reemphasize the unusually high benefit-to-cost ratio—3.6 to 1—and to point out that the benefits involved in this undertaking include flood control, irrigation, and recreation for an area which includes our State capital and one of the most important agricultural areas in the world.

I shall not reiterate the statistics connected with these benefits.

They are already well known and, in addition, are included in a letter from Secretary Udall to the chairman of our committee.

Suffice it to say that they will be valued at almost \$4 million for every \$1 million of Federal funds spent on the work, in accordance with the benefit-cost ratio I mentioned.

When it is realized that we are speaking about a \$425 million project, the enormity of the beneficial results it will produce becomes indisputably obvious.

Early and affirmative action on S. 599 is of the utmost importance, not only to the 18 million residents of the Nation's largest State, but also to those citizens in the other 49 States whose livelihoods depend entirely or to a large degree on California's agriculture, business, and commerce.

I respectfully request that you act accordingly.

I also ask that the material submitted with this statement be studied by this group and made a part of the record of this hearing.

RESOLUTION IN SUPPORT OF THE PROPOSED AUBURN-FOLSOM SOUTH UNIT OF THE CENTRAL VALLEY PROJECT

Whereas, the Greater Stockton Chamber of Commerce adopted a resolution in support of the proposed Auburn-Folsom south unit of the Central Valley project on the 9th day of February, 1962; and

Whereas, the board of directors of the Greater Stockton Chamber of Commerce reaffirmed by a unanimous vote, etc., endorsement of the project on the 14th day of April, 1964: Now, therefore, be it

Resolved, That this board of directors of the Greater Stockton Chamber of Commerce reaffirms its endorsement of the Auburn-Folsom south project as proposed in the report of the Secretary of the Interior of the United States, which has been submitted to the President of the United States and recommends that the Congress of the United States shall take all appropriate action in support of the early authorization and construction of the Auburn-Folsom south unit; Further, be it

Resolved, That a copy of this resolution be sent to the President of the United States, the Secretary of the Interior, Senator Thomas H. Kuchel, Senator George Murphy, and Congressman John J. McFall.

Passed and adopted this 16th day of March 1965 by the unanimous vote of the board of directors of the Greater Stockton Chamber of Commerce.

BERNIE FAUNCE,

Acting President, Greater Stockton Chamber of Commerce.

Certified to be a true copy.

Attest:

D. DAVID SMITH,

Secretary-Manager, Greater Stockton Chamber of Commerce.

RESOLUTION NO. 65-3-26 OF THE ELK GROVE IRRIGATION DISTRICT

Whereas Elk Grove Irrigation District is an irrigation district duly organized and existing under the laws of the State of California, and

Whereas the territory of Elk Grove Irrigation District is situated in the southern portion of Sacramento County, Calif., and

Whereas Elk Grove Irrigation District has no stream, lake, reservoir, canal, or other source located in its territory from which to distribute water except for ground water from wells, and

Whereas, the territory of Elk Grove Irrigation District is in the immediate proximity to Folsom Reservoir in Sacramento County, Calif., and said reservoir contains great quantities of water not now being distributed into the southern portion of Sacramento County, and

Whereas the territory of Elk Grove Irrigation District cannot be supplied adequately from ground water sources and a canal leading from Folsom Reservoir is necessary to lead waters into the territory of Elk Grove Irrigation District, and

Whereas the proposed route from Folsom South Canal will pass adjacent to the boundaries of Elk Grove Irrigation District and said canal will be of great benefit to Elk Grove Irrigation District, and

Whereas Elk Grove Irrigation District, and the Bureau of Reclamation have established a form of contract for the purchase and sale of water to be supplied to Elk Grove Irrigation District from said proposed canal when water from said canal is available, and

Whereas Folsom South Canal is the only feasible means for transporting water from Folsom Reservoir to the territory of Elk Grove Irrigation District: Now, therefore, be it

Resolved, That the board of directors of Elk Grove Irrigation District hereby strongly endorses the Auburn-Folsom south unit of the Central Valley project, California, and urges early construction of the facility as a Federal reclamation project to assist the county of Sacramento and the Elk Grove Irrigation District in implementing an overall county water development program necessary to serve the rapid community growth.

The foregoing resolution was duly adopted at a meeting of the board of directors of the Elk Grove Irrigation District on the 26th day of March 1965, upon the motion of Directors Fairbairn and seconded by Director Morrow upon the following vote:

Ayes: Directors Johnston, Morrow, Fairbairn.

Noes: None.

Absent: Directors Feickert and Nicolaus.

FLORA L. DOYLE,

Secretary, Elk Grove Irrigation District.

RESOLUTION OF THE NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT

Whereas this district comprises approximately 52,700 acres of land, situated in the northern part of the county of San Joaquin, in the State of California, about 2,500 acres thereof lying within the corporate limits of the city of Lodi, and the remainder thereof being highly productive agricultural lands used for the production of grapes, tree fruits, nuts, row crops, alfalfa, clover, and other farm crops; and

Whereas the aforesaid agricultural lands now are, and for more than 50 years last past have been, irrigated from wells, and the city of Lodi now obtains, and for more than 50 years has obtained, its requirements of water for domestic and

industrial purposes from wells, which wells draw upon the ground water basin underlying this district; and

Whereas the ground water table within this district has drastically receded during the past 15 years, and is now in extremely overdrawn condition; and

Whereas to alleviate the aforesaid depleted and overdrawn underground water condition in this district, this district must obtain a supplemental supply of water at the earliest possible time to save and preserve the agricultural lands within this district and to provide the domestic and industrial water needs of the city of Lodi and the residents thereof; and

Whereas pursuant to State of California Water Rights Board Decision No. D-893 dated March 19, 1958, this district is entitled to obtain its required supply of supplemental water from and out of the American River by way of the proposed Folsom South Canal under appropriate contract between this district and the U.S. Bureau of Reclamation; and

Whereas the Secretary of the Interior of the United States has heretofore forwarded to the Congress of the United States his report recommending the early authorization of the proposed Auburn Dam-Folsom South Canal project and related units; and

Whereas the earliest possible authorization and construction of said proposed Auburn Dam-Folsom South Canal project is most urgent and necessary to save and preserve the lands of this district: Now, therefore, it is hereby

Resolved, That this district hereby commends the Secretary of the Interior for recognizing the urgent need of the Auburn Dam-Folsom South Canal project; be it further

Resolved, That this district urges the U.S. Senate and the House of Representatives of the U.S. Congress to take such steps and actions as may be required to accomplish the early authorization and construction of said Auburn Dam-Folsom South Canal project.

RESOLUTION OF THE FORESTHILL PUBLIC UTILITY DISTRICT

Whereas the Foresthill Public Utility District is a body politic, duly organized and existing under and by virtue of the laws of the State of California, including among its purposes, the acquisition and operation of facilities for the supply of water to residents and inhabitants of the district; and

Whereas said district and its residents, inhabitants, and customers are faced with critical water shortage, typical of the Foresthill Divide which water shortage can be alleviated by the construction of the Sugar Pine Reservoir as a part of the Auburn-Folsom south unit of the Central Valley project: Now, therefore be it

Resolved by the board of directors of Foresthill Public Utility District, that the Foresthill Public Utility District is a tax-supported public entity but the construction of projects of the magnitude of the Sugar Pine Reservoir portion of the Auburn-Folsom south unit of the Central Valley project is beyond the financial means of the district to meet but nevertheless, the construction of the Sugar Pine Reservoir is necessary and vital to the Foresthill Divide and to the Foresthill Public Utility District;

That the board of directors of the district has been developing all possible sources to supplement their water supply but there are more applications for water being received than the district has water available to serve; that since 1959, the districts water storage and reserves have been used to the maximum limit and since July of 1959, there has been an increase of approximately 46 percent in the number of customers to be served whereas the supply sources have remained essentially the same as in 1959;

That the inadequacy of supply presents a material detriment to the area and in particular, constitutes a serious health and safety hazard in that there is serious risk of an inadequacy of water for domestic consumption and/or fire protection;

By virtue of the foregoing and related factual data, the construction of the Auburn-Folsom south unit of the Central Valley project is endorsed by this said board of directors with particular emphasis and stress and urgency being directed at the Sugar Pine Reservoir, the latter being of vital concern and necessity to the Foresthill Divide and in particular, the Foresthill Public Utility District.

In witness whereof, the board of directors have duly passed and adopted the foregoing resolution this 24th day of March 1965 by the following vote:

Ayes: R. L. Brown, M. B. Langstaff, and Ivan M. Hughes.

Noes: None.

Absent: None.

R. L. BROWN,
*President of the Board of Directors,
Foresthill Public Utility District.*

Attest:

CHAS. M. SIMPSON,
Clerk and ex officio Secretary.

RESOLUTION No. 24,950 OF THE STOCKTON CITY COUNCIL

Whereas the inhabitants of the city of Stockton are at the present time dependent upon ground water as the sole source of water supply, and

Whereas the water table under the city of Stockton has been falling at an alarming rate because of overdrafts necessary to support the present economy in this area, and

Whereas the State of California, through report No. 7 of the division (now department) of water resources, has reported that the water pool under the city of Stockton is exposed to a threat of intrusion of nonpotable water presently located immediately to the west of the city of Stockton, and

Whereas continued overdrafts will increase the risk of the intrusion of poor quality water, and

Whereas supplemental water supplies for this area are urgently required for the protection of the inhabitants of the city of Stockton and the local economy, and

Whereas the proposed Auburn Dam-Folsom South Canal unit of the Federal Central Valley project would provide such supplemental supplies and, thus, reduce the demand on ground water supplies in this area, and

Whereas a revised report on said project was forwarded to the Congress of the United States by the Secretary of Interior under date of October 21, 1963, and

Whereas the Subcommittee on Irrigation and Reclamation of the House Interior and Insular Affairs Committee will hold hearings on said proposed project on March 29 and 30, 1965, and the Subcommittee on Irrigation and Reclamation of the Senate Interior and Insular Affairs Committee will hold hearings on said proposed project on March 31 and April 1, 1965 in Washington, D.C. and

Whereas the city of Stockton has in the past vigorously supported the authorization of the Auburn Dam-Folsom South Canal project: Now, therefore, be it

Resolved by the council of the city of Stockton, as follows, That the city of Stockton urges the Subcommittee on Irrigation and Reclamation of the Senate Committee on Interior and Insular Affairs and the Subcommittee on Irrigation and Reclamation of the House Committee on Interior and Insular Affairs to support authorization and construction of the Auburn Dam-Folsom South Canal project at the earliest possible date; be it further

Resolved, That a copy of this resolution be forwarded to the President of the United States; the Secretary of Interior; the chairman of the Subcommittee on Irrigation and Reclamation of the Senate Interior and Insular Affairs Committee; Senator Frank E. Moss; Senator Thomas Kuchel; Senator George Murphy; the chairman of the Subcommittee on Irrigation and Reclamation of the House Interior and Insular Affairs Committee; Congressman Walter E. Rogers; Congressman John J. McFall, and the California Water Commission.

Dated March 22, 1965.

RESOLUTION OF FORESTHILL DIVIDE CHAMBER OF COMMERCE

Whereas the Secretary of Interior on October 21, 1963, forwarded to the Congress of the United States a revised report on the Auburn Dam-Folsom South Canal unit of the Federal Central Valley project, urging early authorization thereof; and

Whereas this Foresthill, Placer County, Chamber of Commerce, has in the past urged early authorization of this project which is vitally needed by areas in northern and central California for the purpose of providing flood control, recreation, fish and wildlife, irrigation, municipal and power purposes; and

Whereas the water need of the Foresthill Divide area of the project are now at a critical stage; and

Whereas this project has been before the Congress of the United States under a previous report for more than several years; and

Whereas extensive hearings were held early in 1962 by the House of Representatives and the U.S. Senate Subcommittee on Interior and Insular Affairs; and

Whereas studies have found the revised Auburn Dam-Folsom south project to be financially feasible and economically justified; and

Whereas it is highly urgent that additional hearings be held by the appropriate committees of the Congress for the purpose of obtaining early authorization on the Auburn Dam-Folsom south project as now proposed: Now, therefore, be it

Resolved, That the Foresthill Divide Chamber of Commerce go on record as favoring the early authorization and construction of the project; and be it further

Resolved, That copies of this resolution be forwarded to the President of the United States, the Secretary of Interior, the chairman of the affected committees of the House of Representatives and the U.S. Senate, to the various Congressmen and U.S. Senators from the affected areas, and to appropriate State officials.

JIM THOMPSON, *President*.

RESOLUTION OF THE MERCED IRRIGATION DISTRICT

Whereas the Merced Irrigation District is proceeding as rapidly as possible with the improvement of a water supply to lands within its boundaries; and

Whereas the said district does not and will not have sufficient surplus water to provide irrigation water to large areas outside its boundaries; and

Whereas there is an immediate and pressing need for supplemental irrigation water to lands adjacent to and near the district boundaries in order for landowners to continue farming operations; and

Whereas the proposed Auburn Dam-Folsom South Canal unit with enlarged capacity for east side use would be a step toward providing such needed supplemental water: Now, therefore, be it

Resolved, That the board of directors of the Merced Irrigation District urges the Congress of the United States to authorize construction of the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use, as soon as possible; be it further

Resolved, That copies of this resolution be forwarded to Senators Kuchel and Murphy; Congressmen Johnson, Sisk, Moss, McFall, Miller, and Leggett; officials of the Department of the Interior and the Bureau of Reclamation.

Passed and adopted this 23d day of March 1965.

RESOLUTION No. 65-40 OF THE BOARD OF SUPERVISORS OF THE COUNTY OF MERCED, STATE OF CALIFORNIA

Whereas landowners of Merced County are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use would be a forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the Board of Supervisors of Merced County urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation, officials of the Department of the Interior, and the Bureau of Reclamation.

Upon motion of Supervisor Ramondini, seconded by Supervisor Schmidt, and duly carried, the foregoing resolution was passed and adopted at the regular

meeting of the Board of Supervisors of the County of Merced, State of California, this 23d day of March 1965.

EMORY O'BANION,
Chairman of the Board of Supervisors in and for said County and State.
Attest:

E. T. JOHNSON,
County Clerk and Ex-Officio Clerk of the Board of Supervisors of the County of Merced, Calif.

RESOLUTION OF THE PACKWOOD FARM BUREAU CENTER

Whereas landowners of this area are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use would be a forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the Packwood Farm Bureau Center urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation, officials of the Department of the Interior, and the Bureau of Reclamation.

Passed and adopted this 25th day of March 1965.

RESOLUTION No. 868 OF THE CITY COUNCIL OF THE CITY OF AUBURN, CALIF.

Whereas the city of Auburn did and continues to urge early authorization of this project which is vitally needed to areas in northern and central California for the purpose of providing flood control, recreation, fish and wildlife, irrigation, municipal, and power purposes; and

Whereas this project has been before the Congress of the United States under a previous report for more than 4 years; and

Whereas extensive hearings were held in 1962, 1963, and again in 1964, by the House of Representatives and the U.S. Senate Subcommittees on Interior and Insular Affairs; and

Whereas studies have found the revised Auburn Dam-Folsom south project to be financially feasible and economically justified: now, therefore, be it

Resolved, That the city of Auburn requests the Committee on Interior and Insular Affairs of the U.S. Senate to approve pending legislation to authorize said project.

Carried unanimously.

Attest:

VERNE FELLOWS, *Mayor.*
FLORENCE LADECK, *City Clerk.*

RESOLUTION OF THE CENTRAL CALIFORNIA IRRIGATION DISTRICT

Whereas landowners within the Central California Irrigation district realize the absolute necessity of developing supplemental water for the landowners on the east side of the San Joaquin Valley; and

Whereas existing public agencies and private parties and districts are proceeding as rapidly as possible with the development water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use, would be a forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the Central California Irrigation District urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South

Canal unit, with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to Members of the California congressional delegation, officials of the Department of the Interior, and the Bureau of Reclamation.

Passed and adopted this 24th day of March 1965.

H. G. FAWCETT, *President*.

Attest:

C. W. BATES, *Secretary*.

RESOLUTION No. 64-1 OF THE CLAY WATER DISTRICT

Whereas the U.S. Government through the construction of the Folsom Dam has provided the necessary storage and diversion points for furnishing a water supply to designated service areas; and

Whereas the California State Water Rights Board in issuing the permit at Folsom Dam to the U.S. Government designated Sacramento County as a service area and at the same time recognized the area's right to contract with the U.S. Government for a water supply from Folsom Dam by conditioning the permit as follows:

"14. Deliveries of water under permits issued pursuant to applications 13,370 and 13,371 shall be limited to deliveries for beneficial use within Placer, Sacramento, and San Joaquin Counties and shall not be made beyond the westerly or southerly boundaries thereof, except on a temporary basis, until the needs of those counties, present or prospective, are fully met: *Provided, however*, That agreements in accordance with Federal reclamation laws between permittee and parties desiring such service within said counties are executed by July 1, 1968"; and

Whereas the best means of furnishing a water supply to these service areas for storage on the American River would be by the construction of the Folsom South features of the Auburn-Folsom South unit of the Central Valley project, California; and

Whereas the ever-increasing population pressure in Sacramento County and the Sacramento metropolitan area has resulted in a growing demand for meat and dairy products in these areas; and

Whereas to increase total production of farm products to meet the growing demand, more irrigated acreage will be needed and this, in turn, requires an additional water supply; and

Whereas the ground water supply is lacking or the existing ground water is overdrawn; and

Whereas the U.S. Bureau of Reclamation has demonstrated in its report, the economic and engineering feasibility of furnishing the necessary supplemental surface water supply to these service areas by the construction of the Folsom south unit of the Central Valley project; and

Whereas the Clay Water District lies within the service area of the project, an area whose farm acreage is endangered by a rapidly falling ground water table and by a lack of adequate surface water supply; and

Whereas the County Line Dam and Reservoir, as an integral part of the Folsom south unit, can furnish additional flood control and recreational benefits as well as provide a means of helping keep the agricultural, domestic, and industrial development of the county of Sacramento in proper balance; and

Whereas construction of the Auburn Dam will further enhance the water supply available for use from the Folsom south canal as well as furnish important flood control and recreational benefits: Now, therefore, be it

Resolved, That the Board of Directors of the Clay Water District, hereby strongly endorses the Auburn-Folsom south unit of the Central Valley project, which the Folsom south unit is an integral part, and urges early construction of the facility as a Federal reclamation project to assist in implementing an overall Sacramento County water development program necessary to serve rapid community growth related to a great extent to the national defense.

RESOLUTION No. 2-65 OF THE EL DORADO COUNTY WATER AGENCY

Whereas on January 29, 1960, the regional director, region 2, of the Bureau of Reclamation, U.S. Department of the Interior, made his feasibility report on

the Auburn-Folsom south unit of the Central Valley project in California, recommending construction of said unit; and

Whereas on August 10, 1961, the regional director made a supplemental report on the Folsom-Malby area of the Folsom south unit, recommending the construction of the Malby Reservoir and related works as an integral part of the Auburn-Folsom South unit of the Central Valley project; and

Whereas lack of adequate water supplies in the Southwestern portion of El Dorado County have prevented the development of this portion of the county, and construction of Malby Reservoir would provide a dependable source of water to a large part of this area, permitting these lands to develop to their highest and best use: it is hereby

Resolved by the the Board of Directors of El Dorado County Water Agency, State of California, That the Congress of the United States be and it is hereby urgently requested to authorize the construction of the Malby Reservoir and related works as an integral part of the Auburn-Folsom South unit of the Central Valley project in California, and to make the appropriations necessary for the immediate construction of this project.

RESOLUTION No. 75-65 OF THE BOARD OF SUPERVISORS OF THE COUNTY OF EL DORADO

Whereas on January 29, 1960, the regional director, region 2, of the Bureau of Reclamation, U.S. Department of the Interior, made his feasibility report on the Auburn-Folsom south unit of the Central Valley project in California, recommending construction of said unit; and

Whereas on August 10, 1961, the regional director made a supplemental report on the Folsom-Malby area of the Folsom south unit, recommending the construction of the Malby Reservoir and related works as an integral part of the Auburn-Folsom south unit of the Central Valley project; and

Whereas lack of adequate water supplies in the southwestern portion of El Dorado County has prevented the development of this portion of the county, and construction of Malby Reservoir would provide a dependable source of water to a large part of this area, permitting these lands to develop to their highest and best use: It is hereby

Resolved by the Board of Supervisors of the County of El Dorado, State of California, That the Congress of the United States be and it is hereby urgently requested to authorize the construction of the Malby Reservoir and related works as an integral part of the Auburn-Folsom south unit of the Central Valley project in California, and to make the appropriations necessary for the immediate construction of this project.

RESOLUTION OF THE BOARD OF DIRECTORS OF EL DORADO IRRIGATION DISTRICT

Whereas the regional director, region 2, of the U.S. Bureau of Reclamation has heretofore completed his feasibility studies of the Auburn-Folsom south unit of the Central Valley project, California, including a supplemental evaluation of said unit, and has recommended construction of the Auburn-Folsom south unit; and

Whereas lands in western El Dorado County are urgently in need of an adequate water supply; and

Whereas construction of the Folsom-Malby features of the Auburn-Folsom south unit Central Valley project will provide water service to a large part of western El Dorado County: Now, therefore, be it, and it is hereby

Resolved by the Board of Directors of El Dorado Irrigation District, That the Congress of the United States be and is hereby requested to favorably consider authorizing construction of the Auburn-Folsom south unit of Central Valley project in California including the Folsom-Malby and Forest Hill Divide features, and to make the necessary appropriations for early construction of this project.

The foregoing resolution was introduced at a regular meeting of the Board of Directors of the El Dorado Irrigation District held on the 9th day of March 1965, by Director Barkley, who moved its adoption; the motion was seconded by Director Madden.

The motion having a majority of votes "Aye," the resolution was declared to have been adopted, and it was so ordered.

RESOLUTION OF THE BOARD OF DIRECTORS OF THE FLORIN COUNTY WATER DISTRICT

Whereas the report on the Auburn-Folsom south unit of the Central Valley project has been transmitted to Congress; and

Whereas the facilities to be constructed under this project are vitally needed to supply water to areas within Placer, Sacramento, El Dorado, and San Joaquin Counties; and

Whereas these facilities will provide additional much-needed flood control along the lower reaches of the American River, the Sacramento River, and within the Sacramento-San Joaquin Delta, and will supply other benefits in addition; and

Whereas Sacramento County will be the major beneficiaries of project, benefits primarily in terms of additional water supply, flood control, and recreation; and

Whereas the Florin County Water District, being located partly inside and outside the north boundary line of the proposed Folsom south canal service area, will benefit directly by the addition of a supplemental surface water supply to this service area: Now, therefore, be it

Resolved, That the Board of Directors of the Florin County Water District hereby strongly endorses the Auburn-Folsom south unit of the Central Valley project which the Folsom south canal and the County Line Dam and Reservoir are an integral part, and urges early construction of the facility as a Federal reclamation project.

RESOLUTION NO. 411 OF THE CITY COUNCIL, CITY OF FOLSOM

Whereas the U.S. Government through the construction of the Folsom Dam has provided the necessary storage and diversion points for furnishing a water supply to designated service areas; and

Whereas the California State Water Rights Board in issuing the permit at Folsom Dam to the U.S. Government designated Sacramento County as a service area and at the same time recognized the area's right to contract with the U.S. Government for a water supply from Folsom Dam by conditioning the permit as follows:

"14. Deliveries of water under permits issued pursuant to application 13,370 and 13,371 shall be limited to deliveries for beneficial use within Placer, Sacramento, and San Joaquin Counties and shall not be made beyond the westerly or southerly boundaries thereof, except on a temporary basis, until the needs of those counties, present or prospective, are fully met: *Provided, however*, That agreements in accordance with Federal reclamation laws between permittee and parties desiring such service within said counties are executed by July 1, 1968"; and

Whereas it is proposed to serve two separate service areas in Sacramento County, south of the American River, by the Folsom south unit of the Central Valley project; and

Whereas the California State Department of Water Resources has in all its published plans for the ultimate development of the Sacramento and San Joaquin Valleys considered that these service areas would best be served a water supply from storage on the American River; and

Whereas the best means of furnishing a water supply to these service areas from storage on the American River would be by the construction of the Folsom south unit of the Central Valley project; and

Whereas the ever-increasing population pressure in Sacramento County and the Sacramento metropolitan area has resulted in a growing demand for meat and dairy products in these areas; and

Whereas to increase total production of farm products to meet the growing demand more irrigated acreage will be needed and this, in turn requires an additional water supply; and

Whereas the ground water supply is lacking or the existing ground water is overdrawn; and

Whereas the U.S. Bureau of Reclamation has demonstrated in its report, the economic and engineering feasibility of furnishing the necessary supplemental surface water supply to these service areas by the construction of the Folsom south unit of the Central Valley project: Now, therefore, be it

Resolved, That the City Council of the City of Folsom, hereby strongly endorses the Auburn-Folsom south unit of the Central Valley project, which the Folsom south unit is an integral part, and urges early construction of the facility as a Federal reclamation project to assist in implementing an overall

Sacramento County water development program necessary to serve rapid community growth related to a great extent to the national defense.

Passed and adopted by the City Council of the City of Folsom, State of California, this 5th day of November 1963, by the following vote, to wit:

Ayes: Kipp, Plummer, Slater.

Noes: None.

Absent: Moody, Thorne.

Attest:

JOHN E. KIPP, Jr.,
Mayor, City of Folsom.

ARTIE M. DAVIES, City Clerk.

RESOLUTION OF THE FRESNO IRRIGATION DISTRICT

Whereas landowners of the Auburn-Folsom south unit and the proposed East Side division of the Central Valley project are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for East Side use would be a forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the Fresno Irrigation District urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for East Side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation, officials of the Department of the Interior and the Bureau of Reclamation.

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF FRESNO,
STATE OF CALIFORNIA

Whereas the bringing of supplemental water supplies to lands along the eastern side of Fresno County and the San Joaquin Valley is a matter of vital importance to the continued agricultural, industrial, recreational, and other economical phases of the development of the county and the valley and is, therefore, a matter of great countywide interest and concern; and

Whereas legislation is now pending before the Congress of the United States to authorize construction of the Auburn Dam-Folsom South Canal unit of the Central Valley project of the U.S. Bureau of Reclamation; and

Whereas this will be the unit through which water will be delivered to the proposed East Side, serving Fresno County and the southern San Joaquin Valley, and its construction is a necessary prelude to such service: Now, therefore, be it

Resolved, That the Board of Supervisors of the County of Fresno do hereby urge the Congress of the United States to authorize and finance construction of the Auburn Dam-Folsom South Canal unit, with provisions for enlargement to provide for delivery of water to the East Side unit as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to the Secretary of the Interior, the Commissioner of Reclamation, the Honorable Thomas H. Kuchel, Senator from the State of California, the Honorable George Murphy, Senator from the State of California, and to the Honorable B. F. Sisk, Congressman from the 16th Congressional District.

This resolution adopted by the Board of Supervisors of Fresno County, Calif., at its regular meeting held on the 23d day of March, 1965, by the following vote, to wit:

Ayes: Supervisors Reich, Haehsy, Craven, Olsen.

Noes: None.

Absent: Supervisor Malm.

FLOYD OLSEN,
Chairman of the Board of Supervisors,
of Fresno County, Calif.

RESOLUTION No. 14 OF THE BOARD OF DIRECTORS OF THE GALT IRRIGATION DISTRICT

Whereas the facilities to be provided by the Auburn-Folsom south unit of the Central Valley project, California, are vitally needed to supply water to designated service areas within Placer, Sacramento, El Dorado, and San Joaquin Counties; and

Whereas the U.S. Bureau of Reclamation has demonstrated in its report the economic and engineering feasibility of the construction of the Auburn-Folsom south unit; and

Whereas the ever-increasing population pressure in Sacramento County and the Sacramento metropolitan area has resulted in a growing demand for the farm products of the Sacramento County Folsom south unit service area; and

Whereas to increase total production of farm products to meet the growing demand, more irrigated acreage will be needed and this, in turn requires an additional water supply; and

Whereas the ground water supply is lacking or the existing ground water is overdrawn; and

Whereas the Galt Irrigation District lies within the service area of the project, an area whose farm acreage is endangered by a rapidly falling ground water table and by a lack of an adequate surface water supply; and

Whereas the County Line Dam and Reservoir, as an integral part of the Folsom south unit can furnish additional flood control and recreational benefits as well as provide a means of helping keep the agricultural, domestic and industrial development of the county of Sacramento in proper balance; and

Whereas construction of the Auburn Dam will further enhance the water supply available for use from the Folsom South Canal as well as furnish important flood control and recreational benefits: Now, therefore, be it

Resolved, That the board of directors of the Galt Irrigation District, hereby strongly endorses the Auburn-Folsom south unit of the Central Valley project, California, which the Folsom south unit is an integral part, and urges early construction of the facility as a Federal reclamation project to assist in implementing an overall Sacramento County water development program necessary to serve rapid community growth related to a great extent to the national defense.

Passed and adopted by the board of directors of the Galt Irrigation District, State of California, this 23d day of April, by the following vote, to wit:
Ayes: Robert Smith, Gustav Gerling, John Georgi, George Kenefick, Don Praton.

Noes: None.

Absent: None.

GUSTAV GERLING, *Secretary*.

APRIL 23, 1964.

RESOLUTION OF THE CITY OF GALT

Whereas the best means of furnishing a water supply to these service areas from storage on the American River would be the construction of the Folsom south unit of the Central Valley project; and

Whereas the ever-increasing population pressure in Sacramento County and the Sacramento metropolitan area has resulted in a growing demand for meat and dairy products in these areas; and

Whereas to increase total production of farm products to meet the growing demand more irrigated acreage will be needed and this in turn requires an additional water supply; and

Whereas the ground water supply is lacking or the existing ground water is overdrawn; and

Whereas the U.S. Bureau of Reclamation has demonstrated in its report the economic and engineering feasibility of furnishing the necessary supplemental surface-water supply to these service areas by the construction of the Folsom south unit of the Central Valley project; and

Whereas the County Line Dam and Reservoir as an integral part of the Folsom south unit can furnish additional flood control and recreational benefits as well as provide a means of helping keep the agricultural, domestic, and industrial development of the county of Sacramento in proper balance; and

Whereas construction of the Auburn Dam will further enhance the water supply available for use from the Folsom South Canal as well as furnish important flood control and recreational benefits: Now, therefore, be it

Resolved, That the City Council of the City of Galt hereby strongly endorses the Auburn-Folsom south unit of the Central Valley project, which the Folsom south unit is an integral part, and urges early construction of the facility as a Federal reclamation project to assist in implementing an overall Sacramento County water development program necessary to serve rapid community growth related to a great extent to the national defense.

Passed and adopted by the City Council of the City of Galt, State of California, this 26th day of November 1963.

BENINE PASADO,
Mayor of the City of Galt.

RESOLUTION OF THE BOARD OF DIRECTORS OF GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT

Whereas Georgetown Divide Public Utility District is a public utility district organized and existing under the laws of the State of California for the purpose of serving municipal, industrial, and agricultural water to the inhabitants of said district, which said district is situate in the northern area of El Dorado County, Calif.; and

Whereas the most northerly boundary of said district is contiguous to the North Fork of the American River in El Dorado County; and

Whereas on January 29, 1960, the regional director, region 2, of the Bureau of Reclamation, U.S. Department of the Interior, made his feasibility report on the Auburn-Folsom south unit of the Central Valley project in California, recommending construction of said unit; and

Whereas said Auburn-Folsom south unit of the Central Valley project in California includes development of water supplies on and from the said North Fork of the American River contiguous to Georgetown Divide Public Utility District; and

Whereas the Georgetown Divide Public Utility District, as a further source of supply of water for its inhabitants, has caused to be initiated through the Bureau of Reclamation, U.S. Department of the Interior, a reconnaissance study of the availability of a water supply for its inhabitants from the Auburn-Folsom south unit of the Central Valley project in California; and

Whereas, all preliminary reports conclusively indicate that said Auburn-Folsom south unit of the Central Valley project in California will feasibly provide an additional source of supply of water to the inhabitants of the Georgetown Divide Public Utility District; and

Whereas incidental to the construction of said Auburn-Folsom south unit of the Central Valley project in California would be flood control benefits to the American River and Sacramento River Basins and the State of California; and

Whereas further incidental to the construction of the Auburn-Folsom south unit of the Central Valley project in California would be recreational benefits to Georgetown Divide Public Utility District and El Dorado County; and

Whereas on August 10, 1961, the regional director made a supplemental report on the Folsom-Malby area of the Folsom south unit, recommending the construction of the Malby Reservoir and related works as an integral part of the Auburn-Folsom south unit of the Central Valley project; and

Whereas lack of adequate water supplies in the southwestern portion of El Dorado County have prevented the development of this portion of the county, and construction of Malby Reservoir would provide a dependable source of water to a large part of this area, permitting these lands to develop to their highest and best use, and would thereby indirectly benefit Georgetown Divide Public Utility District: Now, therefore, be it

Resolved by the Board of Directors of Georgetown Divide Public Utility District, County of El Dorado, State of California, as follows:

1. That the Congress of the United States be, and it is hereby requested, to immediately authorize the construction of the Auburn-Folsom south unit of the Central Valley project in California, including the construction of the Malby Reservoir and related works as an intergal part of said Auburn-Folsom south unit, and to make appropriations necessary for the immediate construction of this project.

2. That certified copies of this resolution be forwarded to the appropriate U.S. Senate and House of Representatives committees hearing the request for authorization and necessary appropriations for said Auburn-Folsom south unit of the Central Valley project in California, including the Malby Reservoir and related works as an integral part thereof.

RESOLUTION OF THE BOARD OF DIRECTORS OF THE KERN COUNTY WATER AGENCY

RESOLUTION NO. 57

Whereas landowners of the eastern portion of the San Joaquin Valley, including Kern County, are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use would be a forward step in providing such needed supplemental water; Now, therefore, be it

Resolved, That the Kern County Water Agency urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation, officials of the Department of the Interior and Bureau of Reclamation, and to the Senate and House committees.

RESOLUTION OF EXECUTIVE COMMITTEE OF KINGS RIVER WATER ASSOCIATION

Whereas the Kings River Water Association is an unincorporated association, the members of which are the following named irrigating agencies located in the Kings River service area on the eastern side of the San Joaquin Valley, Calif.:

Alta Irrigation District
 Burrel Ditch Co.
 Circle "L" Farms
 Clark's Fork Reclamation District No. 2069
 Cohn Central Consolidated Reclamation District No. 761
 Consolidated Irrigation District
 Corcoran Irrigation Co.
 Crescent Canal Co.
 Empire West Side Irrigation District
 Fresno Irrigation District
 James Irrigation District
 John Heinlen Mutual Water Co.
 Kings River Water District
 Laguna Irrigation District
 Last Chance Water Ditch Co.
 Lemoore Canal & Irrigation Co.
 Liberty Canal Co.
 Liberty Mill Race Co.
 Peoples Ditch Co.
 Reed Ditch Co.
 Riverdale Irrigation District
 Southeast Lake Water Co.
 Stratford Irrigation District
 Tranquillity Irrigation District
 Tulare Lake Basin Water Storage District
 Tulare Lake Canal Co.
 Upper San Jose Water Co.

and

Whereas the combined service areas of said members of the Kings River Water Association comprise an area of over 1 million acres, of which approximately 975,000 acres are under irrigation with water furnished by said members of the Kings River Water Association; and

Whereas said area is a water-deficient area and the landowners therein are in serious need of supplemental water if they are to continue their farming operations on an economical basis; and

Whereas, although many steps are being taken toward the development and conservation of water and water resources, these steps are not keeping pace

with the expanding needs for agricultural and domestic water in the State of California and particularly the San Joaquin Valley; and

Whereas the proposed Auburn Dam-Folsom south canal unit, with provisions for enlargement for east side use, would constitute a forward step in securing supplemental water: Now, therefore, be it

Resolved, That the Kings River Water Association, on behalf of itself and on behalf of its members above named, hereby urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom south canal unit with provisions for enlargement for east side use as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation and officials of the Department of the Interior and the Bureau of Reclamation.

Passed and adopted at a regular meeting of the executive committee of the Kings River Water Association this 19th day of November 1964.

ROBERT E. LEAKE, Jr., *Secretary*.

RESOLUTION OF THE LINDMORE IRRIGATION DISTRICT

Whereas landowners of Lindmore Irrigation District need supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding rapidly as possible with the development of water, and such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use would be a forward step in providing such needed supplemental water to needy lands of the State: Now, therefore, be it

Resolved, That Lindmore Irrigation District urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions or enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation, officials of the Department of the Interior and the Bureau of Reclamation.

RESOLUTION OF CITY OF LODI, CALIF.

Whereas the city of Lodi is located in San Joaquin County, Calif., along the Mokelumne River; and

Whereas efforts of the city of Lodi to obtain water rights on the Mokelumne River have been unsuccessful and there are no prospects of obtaining such rights in the future since all available water from said river has been assigned to others; and

Whereas the city of Lodi must rely entirely on a declining underground water table for its water supply; and

Whereas the City Council of the City of Lodi has an obligation to provide water to the community for future domestic and industrial consumption; and

Whereas the city of Lodi must look to the American River for additional water to meet its future needs; and

Whereas the Auburn Dam-Folsom South Canal unit will make water from the American River available to the city of Lodi and surrounding areas; and

Whereas the economy of the city of Lodi is largely dependent upon the maintenance of strong and prosperous agricultural activities in the areas surrounding the city; and

Whereas the City Council of the City of Lodi recognizes that the successful utilization of much farmland in this area is threatened by a rapidly falling ground water table which makes it imperative that a source for additional water be found and developed: Now, therefore, be it

Resolved, That the City Council of the City of Lodi endorses the Auburn Dam-Folsom South Canal project as submitted to the Congress so that (1) the city of Lodi will have an ample supply of water to meet its domestic and industrial needs; and (2) the agricultural economy of the areas adjacent to the city of Lodi will be maintained; be it further

Resolved, That the city of Lodi urges all appropriate action directed toward the early authorization and construction of the Auburn Dam-Folsom South Canal unit.

Dated March 17, 1965.

I hereby certify that Resolution No. 2803 was passed and adopted by the City Council of the City of Lodi at a regular meeting thereof held Wednesday, March 17, 1965, by the following vote:

Ayes: Councilmen Culbertson, Kirsten, Walton and Dow.

Noes: Councilmen, none.

Absent: Councilman Brown.

BEATRICE GARIBALDI, *City Clerk.*

RESOLUTION NO. 29 OF THE BOARD OF DIRECTORS OF OMOCHUMNE-HARTNELL WATER DISTRICT

Whereas the Secretary of Interior of the United States has transmitted to the President of the United States his report on the Auburn-Folsom South unit of the Central Valley project; and

Whereas the President has transmitted said report to the Congress of the United States; and

Whereas the demands on the ground water basin by lands in the Folsom South Service area north and south of the Omochumne-Hartnell Water District has resulted in a large over draft of this ground water basin and the continued lowering of the ground water level; and

Whereas to meet the ever increasing demand for dairy and beef products and other farm products, caused by rapid population increase in the county of Sacramento metropolitan area will require more irrigated acreage which in turn requires an additional water supply; and

Whereas a supplemental water supply is needed to meet this additional water supply; and

Whereas the U.S. Bureau of Reclamation has demonstrated in its report, the economic and engineering feasibility of furnishing the necessary supplemental surface water supply to the Folsom-South service area as well as an interim supply to the Omochumne-Hartnell Water District until such time as the Nashville Dam on the Consumnes River is completed, by the construction of the Folsom South unit of the Central Valley project; and

Whereas the County Line Dam and Reservoir as an integral part of the Folsom South unit can furnish additional flood control and recreational benefits as well as provide a means of helping keep the agricultural, domestic, and industrial development of the county of Sacramento in proper balance; and

Whereas construction of the Auburn Dam will further enhance the water supply available for use from the Folsom South Canal as well as furnish important flood-control and recreational benefits: Now, therefore, be it

Resolved, That the Board of Directors of the Omochumne-Hartnell Water District hereby strongly endorses the Auburn-Folsom South unit of the Central Valley project, California, and urges early construction of the facility as a Federal reclamation project to assist the county of Sacramento in implementing an overall county water development program necessary to serve rapid community growth.

I, secretary of the Omochumne-Hartnell Water District, and of the board of directors thereof, do hereby certify the above and foregoing to be a full, true, and correct copy of a resolution adopted at a meeting of the board of directors of the district held on the 21st day of April 1964.

Ayes: Directors, 4.

Absent: Directors, 1.

E. T. ROONEY, Jr.,
President.
MURIEL BLODGETT,
Secretary.

RESOLUTION OF THE BOARD OF SUPERVISORS OF COUNTY OF PLACER, STATE OF CALIFORNIA

Whereas there are now before the U.S. Senate, introduced by Hon. Thomas H. Kuchel, S. 599 and related bills which would authorize the Auburn-Folsom south unit, Central Valley project; and

Whereas the Senate Interior and Insular Affairs Committee has scheduled hearings on S. 599 and related bills for March 31, 1965; and

Whereas the said Auburn-Folsom south unit will benefit the people of Placer County by providing a source of water for western Placer County, by eliminating

the necessity for the Placer County Water Agency having to pump its Middle Fork American River project water from the American River into western Placer County, and by providing recreational benefits to the people of Placer County and the surrounding areas: Now, therefore, be it

Resolved by the Board of Supervisors of the County of Placer, State of California, That said board supports the Auburn-Folsom south unit, American River division, Central Valley project, and urges the approval of S. 599 and related bills, authorizing said unit.

The foregoing resolution was duly passed by the Board of Supervisors of the County of Placer at a regular meeting thereof on the 16th day of March 1965, by the following vote on roll call:

Ayes: Supervisors George A. Lambert, Will Jones, Frank J. Paoli, Wm. S. Briner, and Robert Radovich.

Noes: None.

Absent: None.

Signed and approved by me after its passage this 16th day of March 1965.

ROBERT RADOVICH,
Chairman, Placer County Board of Supervisors.

Attest:

MAURINE I. DOBRAS, *County Clerk.*

RESOLUTION OF THE BOARD OF DIRECTORS OF THE PLACER COUNTY WATER AGENCY

Whereas there are now before the U.S. Senate S. 599 introduced by the Honorable Thomas Kuchel and by the Honorable George Murphy, and related bills, which would authorize the Auburn-Folsom South unit, American River division, Central Valley project; and

Whereas the Senate Interior and Insular Affairs Committee has scheduled a hearing on S. 599 and related bills for March 31; and

Whereas the said Auburn-Folsom south unit will benefit the people of Placer County by providing a source of water for western Placer County, by eliminating the necessity for the Placer County Water Agency having to pump its Middle Fork American River project water from the American River into western Placer County, and by providing recreational benefits to the people of Placer County and surrounding areas; and

Whereas the Commissioner of Reclamation in his report entitled "A Supplemental Evaluation of the Auburn-Folsom South Unit of the Central Valley Project, California" dated April 5, 1963, quoted a price of \$85 per acre-foot for municipal and industrial water for the Foresthill Divide area in Placer County; and

Whereas the Foresthill Divide area cannot economically support a price of \$85 for municipal and industrial water and the manner in which the \$85 per acre-foot price was established was not consistent with the existing pricing policies of the Central Valley project; now, therefore, be it

Resolved by the Board of Directors of the Placer County Water Agency, That said board supports the Auburn-Folsom south unit, American River division, Central Valley project and urges the approval of S. 599 and related bills authorizing said unit; and be it further

Resolved, That said board urges the Senate Interior and Insular Affairs Committee to provide in the authorization of the Auburn-Folsom South unit for the financial integration of the municipal and industrial water supply features of the Foresthill Divide unit into the financial structure of the total Central Valley project, or at least the major units thereof, with the rates for such municipal and industrial water established accordingly.

The foregoing resolution was duly passed and adopted at a special meeting of the Board of Directors of the Placer County Water Agency held on the 23d day of March 1965 by the following vote on rollcall:

Ayes: Directors Lambert, Radovich, Jones, Briner, and Paoli.

Noes: None.

Absent: None.

Signed and approved by me after its passage this 23d day of March 1965.

FRANK J. PAOLI,
Chairman Placer County Water Agency.

Attest:

EVLYN BROZER,
Clerk, Placer County Water Agency.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PORTERVILLE

Whereas landowners of the Porterville area are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with this development of water, such development is not keeping pace with the expanding needs for agricultural and domestic purposes; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for East Side use would be a forward step in providing such needed supplemental water; Now, therefore, be it

Resolved, That the city of Porterville urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for East Side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation and officials of the Department of the Interior and Bureau of Reclamation.

Attest:

WILLIAM R. RODGERS, *Mayor*.

ROY R. PEDERSON, *City Clerk*.

RESOLUTION OF THE PORTERVILLE CHAMBER OF COMMERCE

Whereas landowners of the San Joaquin Valley are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for East Side use would be a forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the Porterville Chamber of Commerce urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit; with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to Senators Kuchel and Murphy and Congressman Hagen.

Passed and adopted this 25th day of March 1965.

LESTER J. HAMILTON, *President*.

Attest:

ALLAN R. COATES, *Secretary*.

RESOLUTION OF THE BOARD OF DIRECTORS OF THE STOCKTON AND EAST SAN JOAQUIN WATER CONSERVATION DISTRICT

Whereas heretofore the revised report of the Secretary of the Interior of the United States of America relative to the Auburn Dam-Folsom South Canal project and related units was received by the Congress of the United States of America; and

Whereas there is now pending before the Congress H.R. 485, S. 599, and companion bills which would authorize the construction of the Auburn Dam-Folsom South Canal project and related units; and

Whereas the facilities which would be constructed as a part of the Auburn Dam-Folsom South Canal project are urgently needed to conserve and transport supplemental water to the county of San Joaquin and to the areas within the nearby counties of El Dorado, Placer, and Sacramento; and

Whereas the supplemental water which will be made available to the San Joaquin County area by the Auburn Dam-Folsom South Canal project is vitally needed in part, to meet the urgent needs of this district for an additional supplemental water supply to be used in the preservation of approximately 48,000 acres of highly productive irrigated farmland within this district, which land is now gravely endangered by a rapidly falling ground water table and by the lack of an adequate surface water supply; and

Whereas there is contained within this district most of the rapidly growing Stockton metropolitan area; and

Whereas the Stockton metropolitan area must have additional supplemental water to provide for its inevitable further urban growth; and

Whereas this district will utilize water from the Auburn Dam-Folsom South Canal project: Now, therefore, be it

Resolved, That this board of directors urges all appropriate action by the Congress of the United States of America toward the early authorization and construction of the Auburn Dam-Folsom South Canal project; and be it further

Resolved, That the secretary-manager of this district forward certified copies of this resolution to the Senate Committee on Interior and Insular Affairs; Subcommittee on Irrigation and Reclamation, the Honorable Frank E. Moss, chairman; the House of Representatives Committee on Interior and Insular Affairs, Subcommittee on Irrigation and Reclamation, the Honorable Walter Rogers, chairman; the House of Representatives Committee on Interior and Insular Affairs; Subcommittee on Irrigation and Reclamation, the Honorable Walter Rogers, chairman; the Honorable Thomas Kuchel and the Honorable George Murphy, U.S. Senators from California; the Honorable John McFall, U.S. Representative from the 15th Congressional District of California; the Honorable Hugo Fisher, administrator of the Resources Agency of the State of California.

RESOLUTION OF THE BOARD OF SUPERVISORS, COUNTY OF TULARE, STATE OF CALIFORNIA

Whereas there are pending before the Congress of the United States certain bills authorizing the construction of the Auburn-Folsom south unit of the Central Valley project, to wit: S. 599 (Kuchel and Murphy); H.R. 485 (Johnson); H.R. 902 (Sisk); H.R. 2073 (Moss); H.R. 2840 (McFall); H.R. 3393 (Miller); and H.R. 4262 (Leggett); and

Whereas this board of supervisors has for many years urged Congress and its Representatives in Congress to expedite the development and construction of the Auburn-Folsom south unit of the Central Valley project and the subsequent development of the east side division of the Central Valley project of California; and

Whereas each year it becomes more apparent that additional surface supplies of supplemental water must be developed for the Central Valley of California in order to maintain the existing agricultural economy of California; and

Whereas it appears to this board of supervisors that the proposed Auburn-Folsom south unit of the Central Valley project is not only economically feasible from an irrigation benefit aspect but is of vital importance to California for its flood control features, and that the authorization of this project would benefit the Central Valley of California, the State, and the Nation: Now, therefore, be it

Resolved as follows:

1. This board does hereby unanimously urge and recommend to the appropriate committees of Congress that the Auburn-Folsom south unit of the Central Valley project be authorized forthwith with appropriate features included in the Folsom South Canal which would provide for the integration of said canal into the proposed east side division of the Central Valley project, California.

2. That this board does hereby unanimously urge the Representatives of this area in Congress to continue their efforts to secure the early authorization of the aforesaid project.

3. That the clerk of this board is hereby directed to send certified copies of this resolution to: U.S. Senator Thomas H. Kuchel, U.S. Senator George Murphy, and Representative in Congress Harlan Hagen, and to make copies of this resolution available to other interested parties.

The foregoing resolution was adopted upon motion of Supervisor Cummings, seconded by Supervisor Booth, at a regular meeting of this board held on the **23d day of March 1965** by the following vote:

Ayes: Supervisors Cummings, Hillman, Booth, Crawford, and Longley.

Noes: None.

Absent: None.

RESOLUTION OF THE TULARE COUNTY CHAMBER OF COMMERCE, MARCH 25, 1965

Whereas Tulare County is in dire need of supplemental water to make it possible for landowners to economically continue operating their farms in this rapidly expanding agricultural area; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water, such development is not keeping pace with the growing needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom south canal unit, with provisions for enlargement for east side use would be a gigantic forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the Tulare County Chamber of Commerce urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom south canal unit, with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That copies of this resolution be forwarded to members of the California congressional delegation.

Passed and adopted this 23d day of March 1965.

D. WAYNE ROBERTSON *Secretary-Manager*.

RESOLUTION OF THE SACRAMENTO CITY-COUNTY CHAMBER OF COMMERCE

Whereas the Board of Directors of the Sacramento City-County Chamber of Commerce on February 5, 1962, went on record as favoring the construction of the originally proposed Auburn Dam; and

Whereas the Board of Directors of the Sacramento City-County Chamber of Commerce on November 18, 1963, went on record as approving the proposal to increase the size of the Auburn Dam project; and

Whereas the need is increasing daily for flood control of all watershed areas; for water transmission to water deficient areas for irrigation, home use, and industries; for electrical power; and for more land and water, parks, and recreational facilities because of the rapidly expanding population in the State; and

Whereas the recent floods in north-central California were caused in great part by the run off from the American River watershed; and

Whereas one more day of rain during the December 1964 flood period could have caused spillage over Folsom Dam which would have resulted in hundreds of millions of dollars of flood damage: Now, therefore, be it

Resolved, That the directors of the Sacramento City-County Chamber of Commerce endorse and support wholeheartedly the earliest possible authorization and construction of the Auburn Dam-Folsom south canal project; and be it further

Resolved, That copies of this resolution be transmitted to the President of the United States; the Secretary of the Interior of the United States; the U.S. Department of the Army, the U.S. Corps of Engineers; the U.S. Department of Interior, Bureau of Sport Fisheries and Wildlife and the Bureau of Reclamation; the U.S. Senators from the States of California and Arizona; the U.S. Congressmen from the 2d, 3d, 4th, 14th, and 15th Congressional Districts in the State of California; the Governor of the State of California; the California State Senators from the 7th, 9th, 15th, 17th, 19th and 20th senatorial districts; the California State assemblymen from the 3d, 5th, 6th, 8th, 9th, 10th, 11th, and 12th assembly districts; the California State Departments of Fish and Game, Parks and Recreation, Public Works and Water Resources; chairman of the Boards of Supervisors of El Dorado County, Placer County, and Sacramento County; and other interested individuals.

Approved: Board of directors, April 5, 1965.

ROBERT D. LIVINGSTON, *President*.

Attest:

BRUCE CRAVER, *General Manager*,
HERBERT N. TURNER, *Chairman*,
Natural Resources Committee.

Senator ANDERSON. Mr. Brody.

STATEMENT OF RALPH M. BRODY, CHAIRMAN, CALIFORNIA WATER COMMISSION; ACCOMPANIED BY B. W. CASSIDY, CHAIRMAN, AUBURN DAM COMMITTEE; AND W. R. GIANELLI, CONSULTING ENGINEER

Mr. BRODY. Mr. Chairman, I would like to have to come to the committee table if I may, Mr. B. W. Cassidy and Mr. W. R. Gianelli.

Senator ANDERSON. Will you gentlemen come up please?

Mr. BRODY. Mr. Chairman and members of the committee, I do not intend to impose on the time of this committee this morning in repetitive testimony which has been presented before this committee in the past in respect to this project.

Numerous statements have been and will be presented for the record. I see no reason why we should burden you with additional testimony. I don't have to call to the attention of the committee the disastrous floods of this past year. While we recognize this is not predominantly a flood control project, the flood control benefits here are in great amount. We mention these floods in terms of indicating the necessity of the timing of the construction of this reservoir as a basic justification.

There is another side to this flood question, however. That is that we lost during this flood period over 1,500,000 acre-feet of water which could have been utilized for irrigation purposes and put to highly beneficial use by the lack of the reservoir itself, the lack of this project. While we have the flood damage and disaster which is certainly serious, there is also the added problem of losing this valuable water which is much needed for these lands that require a supplemental water supply.

Basically the project details have been given to you already in detailed testimony and I will not burden you with a further statement on this point. I have a prepared statement which I would ask be included in the record.

Senator ANDERSON. Without objection that will be done.

(The statement referred to follows:)

STATEMENT OF RALPH M. BRODY, CHAIRMAN, CALIFORNIA WATER COMMISSION

Mr. Chairman and members of the committee, my name is Ralph M. Brody. I am chairman of the California Water Commission. I appreciate the opportunity of appearing before you in support of S. 599 and related bills which would authorize the Auburn-Folsom south unit of the Central Valley project.

The California Water Commission is an official agency of the State of California. It has broad responsibility to give advice on water development matters to the director of water resources, the Governor, and the State legislature. It also has been delegated responsibility to appear on behalf of the State before congressional committees on certain matters.

My appearance here today is responsive to both duties, and to a request by Congressman Johnson, author of one of the bills before the House, that the commission assist the local agencies in coordinating their testimony before your committee. With the committee's permission, I would like to make a brief statement in support of S. 599 and others, to introduce local witnesses, and to submit for the record various statements and resolutions of agencies and persons unable to be represented in person here today.

Technical detail concerning the Auburn-Folsom south unit has been presented by witnesses from the U.S. Department of the Interior. Therefore, I will confine myself to telling why California considers the early authorization of this project so vital to our rapidly growing population and economy.

You will note from the official schedule that there are relatively few local witnesses here today to testify on behalf of the authorizing legislation. We hope you will not construe this as a lack of interest and I will explain later. Not wishing to impose on the time of the committee, the local groups limited itself to representatives of the major areas affected by the Auburn-Folsom south unit. They recognized that previous hearings on this subject before this committee have established the existence of a vast area of strong support and need for the project, and that to repeat this testimony with large numbers of witnesses would merely impose on the already busy schedule of the committee. These witnesses, however, will assure you of the continued broad support for the authorization, and will, with your permission, present statements and resolutions from those not in attendance here today.

The need for Auburn-Folsom south continues to grow with the growth of California, but the floods of December 1964 emphasize that immediate need in a dramatic way. Governor Brown has indicated in his statement how close the Sacramento metropolitan area, with its 600,000 people, came to disaster. Auburn Dam will provide the margin of safety needed to completely eliminate possibility of floods on the American River.

There is another side of the coin, perhaps not so dramatic, but equally important. During the Christmas week floods and immediately thereafter, the Bureau of Reclamation was forced to waste 1,500,000 acre-feet of water to maintain a flood control reservation in the existing Folsom Reservoir, downstream from Auburn. Had Auburn Dam been completed, all of that precious water could have been stored for use later in the year, and during subsequent dry years. I would also like to stress that less than 1 percent of California's agricultural production is in price supported commodities. I would also point out that these water supplies and the ones to be provided by the Auburn-Folsom south unit, have been and will be to stabilize existing economies rather than to bring new lands into farm production.

As you will hear later from local witnesses, Auburn-Folsom south has unanimous support from an area reaching from a point north of Lake Tahoe to Kern County on the south. This is a band in the heartland of California more than 300 miles long and represents the most productive agricultural area of the State.

We fully support the construction of the project now before you for these reasons:

1. The full capacity is urgently needed to provide supplemental agricultural, domestic, and industrial water to western Placer County, which is rapidly becoming a part of the metropolitan area of Sacramento, the capital city of California. This new supply also is needed to restore dropping ground water levels in Sacramento and San Joaquin Counties to stabilize an existing agricultural economy, and to provide industrial and municipal water in urban areas throughout the service area.

2. Being operated for carryover storage, Auburn Reservoir can take advantage of the tremendous flows of the North Fork of the American River during wet years which ordinarily would be wasted to the ocean. I have pointed out a specific example during last December. Also, during the wet year of 1958, for example, the reservoir, completely empty, probably would have filled and spilled with the one year's runoff. Remaining good dam and reservoir sites are more and more scarce in California, and it is just good business to utilize them to their utmost potential so as to not preclude further development later.

3. Auburn Reservoir would work in conjunctive operation with Folsom Reservoir downstream, allowing a more stabilized water surface at the latter reservoir, with its tremendous recreational use.

4. It would provide more flood control storage, so badly needed for the protection of the Sacramento metropolitan area, with its 600,000 people now and projected population of 1 million within the next 15 or 20 years.

Also, and this is partially related to the recent dry cycle (in most sections of California, prior to this winter runoff was only 50 percent of normal) but mainly to population and economic growth, the need for supplemental water for irrigation, and industrial and domestic uses is accelerating rapidly. Underground water tables throughout the great Central Valley are falling due to lack of adequate surface supplies. It is significant to note in this connection that deliveries of water from the presently constructed features of the Central Valley project have retarded, but not stopped, the lowering of ground water levels in many of the existing project service areas.

Governor Brown, in his statement, has discussed the relationship of this project and those planned or being built by the State of California and local agencies. We concur fully in what he says.

We submit that California has done a tremendous amount toward supplying its water needs. Still, the fact remains that our needs are outstripping our supplies, and that Federal participation is needed more than ever to close this gap.

The second point is that there are districts, which having been formed especially for this purpose, are ready, willing, and able to contract for water from the project. Most of them are represented here and will testify as to this point, as well as to their need of supplemental water.

There are many other points I could make but these will be discussed in more detail by the various districts and communities having an interest in the benefits of this project.

In summary, Auburn-Folsom south unit is needed now for flood control, for supplemental agricultural water, for municipal and industrial water, for power for pumping, for recreation, and to supplement inflow to the Sacramento-San Joaquin River Delta.

The California Water Commission respectfully but strongly urges that your committee approve pending legislation authorizing the project.

Mr. BRODY. I also have a statement prepared by Mr. Henry Kloss, chairman of the Board of Supervisors of Sacramento County. I would like to ask that his statement be included in the record in its entirety.

We also have the statement of the chairman of the Board of Supervisors of San Joaquin County, Frank E. Hoyt. I would like to ask that his statement be included in the record.

(The statements referred to follow:)

STATEMENT OF HENRY KLOSS, CHAIRMAN, BOARD OF SUPERVISORS OF SACRAMENTO COUNTY

S. 599 provides authorization for the Secretary of the Interior to construct, operate, and maintain the Auburn-Folsom South unit, American River division, Central Valley project, California, under Federal reclamation laws.

The principal works of the unit shall consist of—

(1) The Auburn Dam and Reservoir with maximum water surface elevation of 1,140 feet above mean sea level, and capacity of approximately 2½ million acre-feet;

(2) A hydroelectric powerplant at Auburn Dam with initial installed capacity of approximately 240,000 kilowatts and necessary electric transmission system for interconnection with the Central Valley project power system: *Provided*, That provision may be made for the ultimate development of the hydroelectric capacity (now estimated at approximately 400,000 kilowatts) and such installation may be made when the Secretary determines that it is economically justified and engineeringly feasible;

(3) The Sugar Pine Dam and Reservoir;

(4) The County Line Dam and Reservoir;

(5) Necessary diversion works, conduits, and other appurtenant works for the delivery of water supplies to projects on the Forest Hill Divide in Placer County and in the Folsom-Malby area in Sacramento and El Dorado Counties; and

(6) The Folsom South Canal and such related structures, including pumping plants, regulating reservoirs, floodways, channels, levees, and other appurtenant works for the delivery of water as the Secretary determines will best serve the needs of Sacramento and San Joaquin Counties: *Provided*, That the Secretary is authorized to include in such canal and related operating structures such additional works or capacity as he deems necessary and economically justified to provide for the future construction of the east side division of the Central Valley project, and the incremental costs of providing additional works or capacity in the Folsom South Canal to serve the east side division of the Central Valley project shall be assigned to deferred use for repayment from Central Valley project revenues. In the event that the east side division is authorized, such costs shall be deemed

a part of the cost of that division and shall be reallocated as the Secretary deems right and proper.

All of the works proposed in the Auburn-Folsom South unit could be considered directly or indirectly beneficial to the county of Sacramento.

The county's primary interest centers, however, on the direct benefits to be gained from the water supply to be made available by the construction of the Folsom South Canal, the direct water supply and flood-control benefits furnished by the County Line Dam and Reservoir, and the direct and indirect water supply, flood control, power supply, and recreational benefits from the Auburn Dam and Reservoir, and the Auburn Dam hydroelectric powerplant.

FOLSOM SOUTH CANAL

In Sacramento County the Folsom South Canal will furnish a water supply to an area generally referred to as the Folsom south service area.

This service area as delineated in the Folsom south unit, Central Valley project, California, report prepared by the U.S. Department of the Interior Bureau of Reclamation regional office, region 2, Sacramento, Calif., and issued in April 1956, contains approximately 198,000 acres. This 198,000 acres as part of a 214,000-acre section of the county which is obtaining the majority of its required water supply from an underlying ground water reservoir.

The 214,000-acre section extends about 25 miles south from the American River to Dry Creek, the Sacramento-San Joaquin County boundary, and lies in a 15-mile-wide strip between the Sierra Nevada foothills and the eastern edge of the Sacramento-San Joaquin River Delta at elevations ranging from 5 to 175 feet.

This service area also forms the north part of a half million acres of potentially rich agricultural land extending southward from the American River and the outskirts of the city of Sacramento, between the Sierra Nevada foothills and the trough of the Sacramento and San Joaquin Valleys.

Streams traversing the area in a southwesterly direction from the foothills include the Consumnes River and Morrison, Laguna, and Dry Creeks. The lands of the area are principally the older terrace hardpan soils although flood plains of varying width consisting of recent soils are associated with the streams.

All beds of the ground water reservoir are discontinuous and grade abruptly laterally and vertically. A persistent silica-iron hardpan generally from 12 to 30 inches below the surface forms a barrier that impedes deep percolation of the water from the surface in most of the service area.

The navigable Sacramento River generally parallels and lies a short distance to the west of the service area. The completed Sacramento-Yolo Port District Deep Water Channel which lies west and generally parallel to the Sacramento River will be easily accessible to the service area.

Main lines of major railroads, the Western Pacific and the Southern Pacific, traverse the area from north to south. An excellent all-weather road network, comprised of a major interstate highway, two State highways, and numerous hard-surfaced county roads, exists in the area.

Adequate power, gas, and telephones are available to the service area with virtually all of the electric power being distributed by the Sacramento Municipal Utility District which utilizes energy generated by the Central Valley project.

Of the 198,000 acres classified as to suitability for irrigation, about 78 percent is class 3, 10 percent class 2, 1 percent class 1, 4 percent class 4, and the remaining 7 percent nonirrigable. Classes 1, 2, and 3 are considered to be arable and class 4 as limited arable.

This area was originally devoted to dryland grain production and dryland pasture. Large-scale irrigation began as early as 1900 but because of the general soil types in the area, field crops that are generally shallow rooted are the main crops that can be raised. The underlying hardpan limits the crops to irrigated pastures, seed crops, ladino clover, rice, and small grain. At present approximately 65 percent of the irrigated land is planted to irrigated pasture.

The main communities within the service area are Elk Grove, Florin, and Galt. Galt was founded in 1869, Florin in 1875, and Elk Grove in 1876. Domestic water service is provided Galt and Florin by public water districts, and Elk Grove by a privately owned water company.

Although the rapidly expanding city of Sacramento is crowding the north and west boundaries of the service area, the service area is predominantly agricultural.

Since large-scale irrigation began, the irrigated acreage has increased steadily over the years until the present when there are 69,000 acres under irrigation. The biggest increase was from 1946 until 1953 when the number of acres under irrigation increased from 27,000 to 54,000 acres.

Although these figures show that there has not been a large increase in lands under irrigation since 1953, this does not mean that new land is not being developed. What it means is that there is a close balance between land formerly irrigated that has reverted to dry land and newly developed irrigated land so that the present acreage under irrigation is somewhat stabilized. Past expansion in irrigated acreage in the service area may be attributed to the rapid population increase of the Sacramento metropolitan area and in the States as a whole, which has created an increased demand for dairy and beef products and farm produce. The population of Sacramento County increased from 277,140 in 1950 to 502,000 in 1960. An increase of 80.4 percent. Most of these products of the service area are presently marketed in the Sacramento metropolitan area, which represents approximately 70 to 75 percent of the county's population. It is reasonable to assume that as the population expansion continues a growing demand for these and other farm products will also continue.

The California State Chamber of Commerce forecasts that the population of Sacramento County is expected to reach 773,200 by July 1970, and 1,073,000 in July 1980. According to the U.S. Bureau of Census the county population in 1960 was 502,778. The 1970 forecasts represent 53-percent increase from 1960.

The planning director of the county of Sacramento estimates that the future county population will be in year 1970 (830,000), 1980 (1,260,000), 1990 (1,800,000) and 2000 (2,440,000). These figures are significant in view of the fact this planning director's projected population of 500,000 for 1960 were one-half of 1 percent below the final 1960 census figures.

To increase total production of farm products to meet the growing demand more irrigated acreage will be needed and this, in turn, requires an additional water supply.

In addition to meeting these needs, conversion of dry land to irrigated farming would tend to stabilize the economy of the three-quarters of the service area that now is dry farmed or in native pasture and now depends upon natural rainfall with its unpredictable variations.

During this increase of irrigated acreage there has been a shift to crops with greater water requirements. This shift can be attributed to the growing demand for meat and dairy products in the city of Sacramento and the State, and to the fact that the shallow soils of the area are particularly suited for irrigated pasture. Pumping from wells has continued to supply the increased amounts of water needed for irrigation. This has resulted in an increasing overdraft upon the ground water, and a consequent decline in the water table.

Agricultural enterprises presently existent in the area vary from suburban homesites to beef and dry-grain operations. The major portion of the irrigated land is being utilized in conjunction with family-type enterprises.

In terms of number and total gross income grade A and B dairies constitute the predominant type of farm enterprise in the service area; beef cattle enterprises are next in importance. In 1962 the dairy cattle milk production totaled \$6,176,000 with market milk accounting for the greatest percentage of this total.

Lately acreage has been devoted to forage seed crops which are particularly well suited to the soil, climate, and location of the area. Approximately 5,000 acres are devoted to these crops now, and two statewide seed processing and marketing cooperatives have located plants in the service area which will provide a ready market outlet for any expanded production. Any expanded production depends on the availability of a supplemental surface water supply.

The owner-operated farm enterprises constitute the backbone of the agricultural economy of the service area. Absentee ownership is relatively insignificant and leasehold operation is confined primarily to a few specialty crops. The few corporate-type farms existent in the area account for a relatively small portion of the irrigable acreage.

All but negligible amounts of the irrigation water supplies, and all of the municipal and industrial water supplies in this service area now are obtained from the ground-water basin. Ground-water pumpage for irrigation and for municipal and industrial requirement has resulted in an overdraft on the ground-water basin.

Studies made by the Bureau of Reclamation indicated gross pumpage for the year 1953 of about 209,000 acre-feet. Later studies by consultant engineers for the county of Sacramento estimated that the water requirements for the year 1962 indicated the pumping approached 280,000 acre-feet per year.

Comparison of lines of equal ground-water elevation shown for the year 1962, in the county's report with those shown in the Folsom south unit report of 1953, by the Bureau of Reclamation readily shows the rather frightening trend of ground-water levels within the study area. This comparison shows that ground-water static levels have fallen by as much as 30 feet in localized areas during this 9-year period.

Data in the county's report regarding the average depths to water at 18 deep key irrigation wells and precipitation as measured at Folsom, further illustrates the rapidly reclining nature of the water table under pumping conditions which exist.

Comparing this data, it is interesting to note that the water level trend in these wells has been steadily downward despite unusually heavy precipitation in water-years 1952, 1956, and 1958. This is, at a time during this period was recharge heavy enough to affect complete return of the water level at any one well to the level experienced the spring before.

The continuation of the water table lowering, as has been evident the last 16 years, will, in the very near future, increase pumping cost to a level which will make this ground-water supply economically unfeasible for many more of the agricultural enterprises within the service area, and for developing new land for irrigation. Without a supplemental water supply which would stabilize water costs at a level which is economically feasible for all agricultural enterprises within the service area, the present irrigated acreage will probably decrease until a pumping depth is reached at which the cost of pumping and returns from investment balance. This condition would result in a large reduction in the number of acres now under irrigation.

Since the agricultural enterprise in the service area have a rather high water requirement while the returns from investment are rather low, this point, considering the ever-dropping ground water level can be reached in the very near future.

The overdraft in 1953 was estimated at 55,000 acre-feet and at present approximately 130,000 acre-feet.

With the water demands on the ground water basin of this service area estimated to reach 326,000 acre-feet in 1970 and 564,000 acre-feet in 1980, the urgent need for the supplemental surface water the Folsom South Canal will make available is clearly demonstrated.

The county's report completed in May of 1963 also indicates that if more larger and deeper wells are employed in the service area, particularly in the area of greatest ground water depression, disturbance of the connate water underlying the area immediately east of the Sacramento River may cause irreparable damage to a portion of the ground water basin.

Clair A. Hill & Associates, consulting engineers for the county of Sacramento, stated in a report dated May 16, 1963.

"Based on existing information, it appears that a definite risk to the future ground water supply of the Folsom south service area exists. The continued lowering of local ground water levels could induce the migration of saline waters eastward and upward. Particularly dangerous, in view of this possibility, would be the drilling of deep wells within the western portion of the service area, which could draw fresh water from aquifers extending to the fresh-salt water interface. For this reason, it is recommended that new wells situated in the western portion of the service area not be driven to depths exceeding 500 feet."

Under long-term future conditions without project development, an estimated 43,600 acres of land in the service area would be irrigated in any one year. This represents 10,500 acres less than was irrigated in 1953 and 25,400 acres less than now being irrigated.

The acreage withdrawn from irrigation presumably would revert to dry-farmed grain production. With full project development, it is estimated that the irrigated area would be greater by about 89,500 acres than at present.

There would be an estimated 1,673 farm units in the service area with project development or about 950 units more than anticipated without project conditions.

It is estimated that the overall average farm unit would be approximately 100 acres.

The Folsom south unit report prepared by the Bureau of Reclamation region 2 personnel, estimates that the 149,500 acres to be irrigated in any one year under full development has a weighted mean water requirement of 3.84 acre-feet per acre or a total season water requirement of 574,000 acre-feet. Meeting this demand will require that a total of 440,000 acre-feet of water be diverted from the Folsom Dam Reservoir to the Sacramento County service area via the proposed Folsom South Canal for integration with the available safe ground water supply and reused return flow waters from project drains.

With this supplemental water supply available canal side at an average price of \$2.75 per acre-foot, it will be possible for this Folsom South Canal service area to develop a water supply that will be economically feasible and thus be able to prevent the economic hardship that would ensue if the present ground water overdraft continues; to reduce the drought hazards inherent in dry farming; and to assist in satisfying the growing food needs of the ever expanding Sacramento metropolitan area; as well as to provide increased opportunities for farm development.

Public recognition of this need for a supplemental water supply was evidenced by the formation of a county water agency and of irrigation and water districts in the south area of Sacramento County a few years after the Folsom Dam and the Nimbus Dam were authorized in 1949 for construction and addition to the Central Valley project.

The Sacramento County Water Agency was formed, at the request of Sacramento County officials, by an enactment of the State legislature in the first extra session of 1952.

The Sacramento Water Agency Act which created this countywide public agency provides that the Board of Supervisors of the County of Sacramento be the directors of the agency. Under this act the agency has the power to develop water supplies, contract with State and Federal agencies to purchase a water supply, contract with other public districts or private companies for the sale of an agency water supply, sell water retail, to levy taxes, hold bond issue elections, and any other functions which are necessary to fulfill the purpose of the act. It also has zoning powers which enables it to limit the costs of a project to the area receiving the benefit of the project.

The Elk Grove Irrigation District, containing about 83,000 acres, was formed in September 1952 and includes the greater portion of the service area lying north of the Cosumnes River. The Galt Irrigation District containing approximately 360,00 acres was formed September 29, 1953, and includes a large portion of the service area lying between the Cosumnes River and Dry Creek. The Clay Water District containing about 6,000 acres was formed in 1955 and includes land just to the east of the Galt Irrigation District, and north of Clay.

The Omochumne-Hartnell Water District was formed in 1956 and contains 30,000 acres. This district runs approximately east and west astraddle the Cosumnes River and includes most of the Cosumnes River flood plain.

The primary purpose for the formation of these districts, with the exception of the Omochumne-Hartnell District, was to obtain supplemental water supplies from the American River and to be in a position to negotiate with the Bureau of Reclamation or the Sacramento County Water Agency for water service as soon as water is available.

The Omochumne-Hartnell Water District was formed to protect the area's water rights along the Cosumnes River and to work for the construction of the Nashville Dam, now under study by the Bureau of Reclamation for the past 3 years. This district has purchased water from the Sly Park project which is operated in conjunction with the Folsom Dam.

In the latest developments of the Folsom South Canal unit and the Cosumnes River division unit the major portion of the Omochumnes-Hartnell Water District has been included in the service area of the Folsom South Canal rather than the Cosumnes River division.

The acres covered by these districts represents 77 percent of the total acreage in the service area.

Since the Sacramento County Water Agency includes the entire service area, public water districts are available to represent the entire service area.

Any area within the service area not part of a public water district can be made zones of the Sacramento County Water Agency and contract for a supplemental water supply from the Folsom South Canal through that medium. It is even possible to zone the entire service area for this purpose if this way was to prove more equitable to everyone.

The initial Folsom south unit report issued by the U.S. Department of the Interior Bureau of Reclamation regional office, region 2, in April 1956, considered the Folsom South Canal and related appurtenants to be constructed only in Sacramento County with provisions for future extension into San Joaquin County.

This report determined that based on a 50-year period, the ratio of total benefits-to-costs was 3.33 to 1 and the primary benefits-to-costs ratio was 1.50 to 1. When the benefits-to-costs was based on a 100-year period rather than 50, total and primary benefits-to-costs ratio become 3.78 and 1.70 to 1, respectively.

The Folsom South Canal being proposed as a feature of the Auburn-Folsom south unit is a 67½-mile canal designed to convey water from the American River and distribute it for irrigation and municipal use in Sacramento and San Joaquin Counties.

Based on a 50-year period, the ratio of total benefits-to-costs is 4.03 to 1 and direct benefits-to-costs is 1.68 to 1. For a 100-year period the total and direct benefits-to-costs ratios are 4.70 to 1 and 1.97 to 1, respectively.

Construction of the Folsom South Canal is engineeringly feasible and the favorable benefit-to-costs ratio effectively demonstrates the economic justification of the proposed project to the benefit of the area involved, the State, and the Nation.

COUNTY LINE DAM AND RESERVOIR

The prospective County Line service area, identified as the Folsom-Malby service area, lies above the proposed Folsom South Canal, between the American and Cosumnes Rivers in easterly Sacramento and westerly El Dorado Counties. The Sacramento County portion of this service area is approximately 20,000 acres.

The general area has the gently rolling to hilly relief usually associated with the foothills of the Sierra Nevada Mountains. Elevations vary from less than 300 feet near the west boundary of the service area to over 800 feet in the El Dorado County portion of the service area. Two creeks, Deer and Carson Creeks cut the area from east to west with Deer Creek furnishing the site for the proposed County Line Dam, Reservoir and pump plant.

At the present time, the land is mainly used as dry pasture for cattle. The area is sparsely populated, and there is little or no irrigated agriculture.

The main reason why this Malby area is largely undeveloped is the lack of an adequate water supply and distance from the metropolitan area.

However, as the more favorable lands close to the metropolitan center have become more intensely utilized, the newer developments have located further from the metropolitan center. There exists today very extensive urban developments north of the American River in areas which are quite comparable to the Malby area in terms of topography and climate conditions and in terms of both distance from and accessibility to the city of Sacramento. The chief distinction between the Malby area and the lands north of the American River lies in the availability of water supplies.

To the north and east of the Malby area where a water supply is available, extensive urban developments are now taking place. Along the western edge of the Malby area, where again a water supply is available, is one of Sacramento County's largest industrial development, the Aerojet-General Corp. This corporation, one of the Nation's largest aerospace industrial developments, employs approximately 20,000 people.

Although immediately adjacent to this industry, the Malby area has not been able to assist in meeting the needs of the increasing population pressures associated with burgeoning industrial development because of a lack of water supplies.

The plan of development selected for the Folsom-Malby area would provide a municipal and industrial water supply. Irrigation use was considered but not projected because of poor soil conditions and proximity to urban areas.

It is anticipated that the water demand of approximately 24,000 acre-feet annually would reach full development in about 25 years following the first full year of project operation. At an average population density comparable to that now existing in suburban areas north of the American River, there would be some 40,000 people living in the service area at full development.

As stated previously, the rapid population increase in the Sacramento metropolitan area and in the State as a whole has created an increased demand for dairy and beef products as well as other farm products. To increase total production of these products more irrigated acreage will be needed.

Because of the availability of water supplies urban and industrial developments are being constructed on irrigated land, thus withdrawing the better county agricultural lands from important food production.

Providing a water supply to the Folsom-Malby area would make it possible to shift this urban and industrial development to lands not suitable to intensive irrigation agriculture.

This shift would allow the agricultural, municipal, and industrial development of the county to be carried out with a better overall balance.

The Bureau of Reclamation regional director, region 2, conditioned his recommendation of the Folsom-Malby features on the provision that a suitable district is organized and repayment contracts executed prior to the start of construction.

The Sacramento County Water Agency through its rezoning powers can provide a suitable public district with the power to execute repayment contracts.

The county of Sacramento in July 1959 had representatives indorse and express their support for construction of the Folsom-Malby features at a public hearing held by the California Water Commission for the purpose of determining local views on the Folsom South unit.

Both the service area of the Folsom South Canal project and the Folsom-Malby project fit into the California water plan. The California State Department of Water Resources has in all its published plans for the ultimate development of the Sacramento and San Joaquin Valleys considered that these service areas would best be served a water supply from storage on the American River.

The California State Water Rights Board in issuing the permit at Folsom Dam to the U.S. Government designated Sacramento County as a service area and at the same time recognized the area's right to contract with the U.S. Government for a water supply from Folsom Dam by conditions in the permit as follows:

"14. Deliveries of water under permits issued pursuant to application 13,370 and 13,371 shall be limited to deliveries for beneficial use within Placer, Sacramento, and San Joaquin Counties and shall not be made beyond the westerly or southerly boundaries thereof, except on a temporary basis, until the needs of those Counties, present or prospective, are fully met, provided, however, that agreements in accordance with Federal reclamation laws between permittee and parties desiring such service within said counties are executed by July 1, 1968."

These two projects also fit into the overall water plan of the county of Sacramento for providing a water supply to all the area of the county east of the Sacramento River Delta lands. The proposed service area of the contemplated Nashville Dam on the Cosumnes River and the area that can be served by the existing water rights of the Natomas Water Co. of Folsom, Calif., would cover this entire section of the county. The Natomas Water Co. is now furnishing water to the Aerojet-General Corp.

The benefit-cost ratio of the entire Auburn-Folsom South unit project was estimated by the Bureau of Reclamation to be 3.71 to 1.00 while the benefit-cost ratio for the Folsom-Malby feature of the project was estimated to be 2.10 to 1.00.

This benefit-cost ratio was determined from the municipal and industrial water service, flood control, recreation, and fish and wildlife benefits received from the construction of this feature of the project.

The flood control, recreation, and fish and wildlife benefits received by Sacramento County from this feature of the proposed project will be discussed later.

AUBURN DAM AND RESERVOIR

Although the Auburn Dam and Reservoir are outside the county its construction will furnish the county of Sacramento direct and indirect benefits.

It is noted in the Auburn-Folsom south unit report that this project develops eight distinct types of benefits. Of these eight, the irrigation, municipal and industrial water supply, commercial power, flood control, recreation, and fish and wildlife benefits could be considered as applying to Sacramento County.

All investigations of the Auburn-Folsom south unit project recognize that in order to meet the irrigation, municipal and industrial water supply demands of the Folsom South Canal service area's ultimate development, the water conserved and stored in the Auburn Dam Reservoir will have to be used.

As stated earlier virtually all of the electric power consumed in Sacramento County is distributed by the Sacramento Municipal Utility District. At present this district is utilizing energy generated by the Central Valley project and is also developing their own sources of power energy on the American River.

There is little doubt that because of the ever increasing demands created by the continuing population and economic growth of the utility district's service area, the added sources of electric power offered by the proposed hydroelectric plant at Auburn Dam will be most welcomed.

It is only the continuing availability of public power sources such as the Central Valley project and the utility district project that will make it possible for Sacramento County to have the lower power rates which have been and will continue to be an important factor in the county's economic growth.

The flood control, recreation, and fish and wildlife benefits received by Sacramento County from this feature of the proposed project will be discussed hereinafter.

SUGAR PINE DAM AND RESERVOIR

The Sugar Pine Dam and Reservoir feature of the Auburn-Folsom south unit is also located outside of Sacramento County but the recreational and fish and wildlife benefits attributed to this feature are of some benefit to Sacramento County.

These benefits can be evaluated in the general discussion on recreation and fish and wildlife presented hereinafter.

FLOOD CONTROL

Christmas Day, December 25, 1964, the people within the Sacramento metropolitan area had further cause for rejoicing. Another flood threat, the fourth during the Folsom Dam's approximately 11 years of existence, had passed and the area had, once again, "squeaked through" without devastating damage.

"One Day From Disaster," the title of the Bureau of Reclamation's report on the 1964 Christmas week floods in northern California correctly emphasizes just how tight a squeak it was.

The fact that the flood periods have been handled in the Sacramento metropolitan area without catastrophic devastation cannot be attributed solely to the existing flood control structures and the knowledge and ability of the men who operate them.

In 1955 only the fact that, at the time the heavy rain storms started, the water level in the Folsom Dam was lower than usual or contemplated during usual operations and the storm did not last 1 more day, saved the areas below the dam from serious flood damage.

When the 1964 storm started on December 18, 1964, the Folsom Dam Reservoir was well below its capacity of 1,010,000 acre-feet, storage in Lake Shasta was exceptionally low—only 2,490,000 acre-feet out of a capacity of 4,500,000 acre-feet, and other reservoirs in northern California had ample storage space available. Even under these favorable conditions, it is estimated that 12 hours more of rain would have meant defeat.

The Auburn Dam can help take a portion of this ever possible flood load from the Folsom Dam and possibly even eliminate damages and complaints caused by the fast releases of water necessitated by the rapid level rises in Folsom Lake such as occurred during the 1963 and 1964 storms.

The value of flood control is clearly illustrated from estimates compiled as a result of previous flood threats. The U.S. Army Corps of Engineers estimated that dams, levees, and bypasses in the Sacramento Valley combined to prevent \$205 million in damage in the Sacramento Valley during the storms in January 1963.

Certainly the damage prevention during the 1964 storms was as great or even greater. It is estimated that the operation of Folsom Dam during this storm prevented \$45 million in damages in the Sacramento area alone.

To date the tremendous flood control work that has been accomplished has managed to prevent real disaster but it is very evident that during the storms of the past couple of years the margin of victory was much too thin. The facilities of the Auburn-Folsom South unit are needed to keep the Sacramento area much further away from disaster than 1 day.

The County Line Reservoir will furnish flood control to downstream lands which are all located in Sacramento County.

Since Deer Creek flows into the Cosumnes River which in turn flows into the Mokelumne River, before emptying into the Sacramento and the Sacramento-San Joaquin Delta, any decrease in its flood flow is certain to benefit the Cosumnes-Mokelumne River basin and the Sacramento-San Joaquin Delta which undoubtedly would also be experiencing floodflow conditions.

The Auburn-Folsom South unit report estimates the annual equivalent flood benefits for Auburn Dam at \$375,000 and for the County Line Reservoir at \$80,000.

When considering the need for flood control facilities, it has to be recognized that the ever increasing residential, commercial, and industrial developments in the Sacramento County area annually increase the possible financial losses that could occur from a flood.

During the past 6 years the total value of construction in the unincorporated area of Sacramento has averaged over \$100 million. The greater percentage of this construction is in areas that would be vulnerable if the existing flood control facilities proved inadequate.

The Office of the Chief of Engineers, Department of the Army, has stated that a review of the Auburn-Folsom unit report indicates that there would be no conflict between the proposed project and existing projects or plans of the Corps of Engineers.

RECREATION

When the practically year-round recreation season of Sacramento County is added to the shorter workweek, increased leisure time, accelerated highway construction leading to greater public mobility and the forecasts of great population increases, the need for developing the high recreation potential of the Auburn-Folsom south unit, to provide significant opportunities for water oriented outdoor recreation, can readily be evaluated.

The proposed recreational areas of the Auburn, Sugar Pine, and County Line Reservoirs will all be located within 1 hour or less traveling time from the metropolitan area of Sacramento but certainly will not be the exclusive recreational playground of this area.

A project report on the recreation resources of the Auburn-Folsom south unit prepared by the U.S. Department of the Interior National Park Service, Western Region, San Francisco, Calif., in March 1963, considers the recreation use area of these reservoirs, along with the existing Folsom Lake State Park at Folsom Lake and Lake Natoma which is nearest to Sacramento, to include the four closest counties—El Dorado, Placer, Nevada, and Sacramento—plus nine contributing San Francisco Bay area counties.

This report estimates that in 1960 there were approximately 4,250,000 potential day-use visitors living within the recreation use zone.

Records indicate that the average annual visitation at the Folsom Reservoir for the 1958-61 period was 1,774,830 visitor-days with the attendance for 1961 being 1,968,498. Because of low water levels in late July and August the visitor-days dropped from 2,175,755 in 1960 to 1,968,498 in 1961. With water releases from Auburn Reservoir into Folsom Reservoir resulting in its stabilization and more efficient use of existing and additional basic facilities and without acquisition of additional lands, the 1961 attendance estimate would immediately raise to approximately 3,300,000 visitor-days.

The natural resources report anticipates, that, with the installation of optimum public use facilities at Auburn and Folsom Dams, a point of optimum use visitation would be reached at both reservoirs by the year 1985. For Auburn this figure is estimated to be 5 million and for Folsom 10 million visitor-days.

For the County Line Reservoir the estimate, based on the installation of basic recreation facilities, is 300,000 visitor-days from within a radius of 35 miles. Optimum use is estimated at about year 2000. With water contact recreation use precluded, initial visitation is estimated at 150,000 and the optimum use at 700,000 visitor-days.

The estimate for the Sugar Pine Reservoir is 30,000 visitor-days with basic recreation development and 100,000 visitor-days with optimum development. Since this is a terminal reservoir water contact recreation should be permitted.

It is evident from the figures quoted in the "Natural Resource's Report" that the existing recreational facilities of Folsom Lake State Park will not be sufficient to meet the future needs of the described feasible recreation-use zone as well as Sacramento County.

One benefit the proposed recreation developments will furnish Sacramento County is the expanded opportunity for its population to engage in diversified water-oriented recreation at relatively short distances from their home. Sacramento County's interest in this type of recreation is well illustrated by the fact that it has the second largest boat registration in the State.

Another benefit is that a large number of the visitors to the proposed recreational facilities from the San Francisco Bay area counties will either pass

through or make their headquarters in the Sacramento metropolitan area during their visits. This should contribute substantially to the economy of the area.

In conclusion it can be stated that the Auburn-Folsom south unit of the Central Valley project, California, has been found to be economically and engineeringly feasible in reports made on these projects by the Bureau of Reclamation. There is support for the project by local interests, and it is very important to the agricultural, municipal, and industrial development of the county of Sacramento as well as to the economy of the county.

In view of these facts the Board of Supervisors of the County of Sacramento strongly endorses the Auburn-Folsom south unit, Central Valley project, California, and urges early construction of the facilities as a Federal reclamation project to assist in implementing the county of Sacramento's overall water-development program.

STATEMENT OF FRANK E. HOYT, REPRESENTING THE BOARD OF SUPERVISORS OF THE COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, AND THE SAN JOAQUIN COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

Mr. Chairman and members of the committee, my name is Frank Hoyt. I am chairman of the Board of Supervisors of San Joaquin County, State of California. With me today is the county's consulting engineer, Mr. William Gianelli.

Mr. Vernon Lehman, who is also a county supervisor representing the major agricultural area in San Joaquin County which will receive water from the Folsom South Canal, would have also been present as he has in the past except that he was prohibited by his physician from making the trip. You will recall that Mr. Lehman has been present before your committee in years past urging early authorization of this project vitally needed in his area.

This statement is being made on behalf of the Board of Supervisors of San Joaquin County, the members of which are also the supervisors of the San Joaquin County Flood Control and Water Conservation District, a countywide district embracing all of the territory of San Joaquin County. A resolution of the board of supervisors, authorizing this presentation and endorsing the Auburn Dam-Folsom South Canal project, is attached hereto. Mr. Lehman and I represent the agricultural areas in San Joaquin County which urgently need the early authorization and construction of the Auburn Dam-Folsom South Canal project.

The San Joaquin County Flood Control and Water Conservation District was created by an act of the California State Legislature in April of 1956, known as the San Joaquin County Flood Control and Water Conservation District Act (ch. 46, California Statutes 1956, first extraordinary session). Broadly, its objectives are to provide for the control of floodwater, to provide for a supplemental water supply, to conserve floodwater for beneficial use, and to protect life and property within the district. The district has broad powers of eminent domain and taxation, the ability to incur bonded indebtedness, to cooperate with Federal and State agencies, and to perform work beneficial to the district.

The population of San Joaquin County has increased from approximately 200,000 to 250,000 persons in the past 10 years, or an increase of approximately 25 percent. The San Joaquin County Planning Department presently predicts a 1980 population in San Joaquin County of from 385,000 to 470,000. The population of the city of Stockton, the county seat of San Joaquin County, has risen from approximately 71,000 in 1950 to approximately 86,000 in 1960, an increase in excess of 20 percent which also reflects generally the growth of the other incorporated cities within the county.

The Folsom South Canal will service almost the entire east side of our county with an urgently needed supplemental water supply. Our county is predominantly an agricultural county, ranking fifth in the Nation in value of crops produced, and the future economic health of the county is dependent upon the ability of agriculture to continue to be able to secure an adequate water supply within its ability to pay. At the present time, approximately 80 percent of the acreage of the proposed service area in San Joaquin County is supplied by pumping from ground water basins. Many of our irrigation wells continue to fall rapidly with resultant costs for well deepening as well as greater pump-lift costs. The present overdraft of ground water supplies indicates that under long-term future conditions, without the Folsom South Canal, present irrigated acreage in the Folsom South Canal service area would have to be reduced materially. We wish to emphasize that for San Joaquin County this is a project primarily to preserve our economy that now exists.

A crop survey in the potential Folsom South Canal service area in San Joaquin County, made in 1958, showed that approximately 186,000 acres were irrigated out of a total of 233,000 acres of agricultural land. Irrigated pasture and alfalfa account for approximately one-third of the irrigated lands; grapes and deciduous orchards also occupy approximately one-third, with the other one-third in rice, sugarbeets, beans, canning tomatoes, and truck crops. It is estimated that between 90 and 95 percent of the farms in the Folsom South Canal service area are family-type farms with less than 160 acres.

San Joaquin County interests have recognized for many years that the answer to their supplemental water supply requirements in the eastern portion of the county depends upon importation of water into the area and that the most logical source for the major portion of such imported supplies is the American River immediately to the north. In the past, San Joaquin County interests have actively supported the construction of Folsom Dam and Reservoir as the conservation feature which would supply a portion of the water for the proposed Folsom South Canal. In this connection, various interests within the county filed applications with the State of California to appropriate water from the American River in anticipation of the delivery of water through Folsom South Canal to areas in San Joaquin County. Among the agencies in the county which filed for this American River water in the late 1940's were the California Water Service Co., which presently serves domestic and industrial water within the Stockton metropolitan area; the city of Stockton, which is primarily concerned with service of municipal water within its limits; the North San Joaquin Water Conservation District, which embraces the northeastern portion of the county and the city of Lodi; and the Stockton and East San Joaquin Water Conservation District, which includes the agricultural areas in the central-eastern portion of the county and in the city of Stockton. Rather than granting the necessary State water rights to the individual entities for a water supply from the American River, the State water rights board granted water rights to the U.S. Bureau of Reclamation and directed, under the permits so granted, that project service would be limited to deliveries for beneficial use within Placer, Sacramento, and San Joaquin Counties, provided that the parties desiring such service within these counties executed agreements in accordance with Federal reclamation law by 1969. Several agencies within San Joaquin County are now negotiating with the Bureau of Reclamation for such contracts.

Related to the matter of entering into water service contracts with the U.S. Bureau of Reclamation, the San Joaquin County Board of Supervisors, through a bill introduced by its State legislators in 1961, sponsored amendments to the San Joaquin County Flood Control and Water Conservation District Act for the specific purpose of affording the countywide agency authority to enter into contracts with the United States for the delivery of Folsom South Canal project water in the event that individual areas within the county were not in a position to enter into the required repayment contracts. Accordingly, the California State Legislature enacted legislation (ch. 933, California Statutes 1961) which will allow the countywide district to enter into contracts with the United States for water from the Folsom South Canal. We believe that this is an important example in illustrating that San Joaquin County desires to do everything possible to insure the repayment of the irrigation features of the Auburn Dam-Folsom South Canal project.

As a part of a countywide program financed by San Joaquin County, a study by one of the State's leading engineering firms was made approximately a year ago to estimate the future requirements of the Folsom South Canal service area. It was estimated that the population of the Folsom South service area in San Joaquin County will increase from the present approximately 200,000 to in excess of 800,000 in the year 2020. The present annual supplemental water requirement of 382,590 acre-feet will increase to approximately 736,000 acre-feet in the year 2020. The present annual supplemental water requirement exists primarily as a result of overdraft in the ground water basins. We believe Folsom South Canal will meet approximately one-half of the ultimate water requirements of the Folsom South Canal service area.

It has been a pleasure to appear before your honorable committee today and should you desire further information with respect to the need for Auburn Dam-Folsom South Canal in San Joaquin County, we will be pleased to supply it to you promptly.

RESOLUTION OF THE BOARD OF DIRECTORS OF THE TERRA BELLA IRRIGATION DISTRICT

Whereas landowners of Terra Bella, Calif., are in dire need of supplemental water to make it possible for them to continue their farming operations on an economical basis; and

Whereas various private and public agencies are proceeding as rapidly as possible with the development of water; such development is not keeping pace with the expanding needs for agricultural and domestic water; and

Whereas the proposed Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use would be a forward step in providing such needed supplemental water: Now, therefore, be it

Resolved, That the board of directors of the Terra Bella Irrigation District urges the Congress of the United States to authorize and construct the Auburn Dam-Folsom South Canal unit, with provisions for enlargement for east side use, as soon as possible; and be it further

Resolved, That a copy of this resolution be forwarded to Senator Thomas H. Kuchel.

Passed and adopted this 6th day of April 1965.

Mr. BRODY. I would like to introduce Jimmy R. Michwain, the mayor of the city of Stockton. I might add I appear here as chairman of the California Water Commission to present the views of the State of California. I have with me Mr. B. W. Cassidy, who is the chairman of the Auburn Dam Committee, and Mr. W. R. Gianelli, consulting engineer representing the Auburn Dam Committee.

Mr. CASSIDY. My name is Bill Cassidy. I am chairman of the Auburn Dam Committee. My only comment other than submitting my statement for the record, is that I am former publisher of the Downeyville Mountain Messenger. I would like to compliment the chairman for his meeting last night honoring Lou Finney, a former resident of Downeyville.

The only thing I would have to add is that I wish to thank this committee after appearing here for some 10 years for their patience and I would like to have my statement included in the record.

(The statement referred to follows:)

STATEMENT OF BILL CASSIDY, CHAIRMAN OF THE AUBURN DAM COMMITTEE

Mr. Chairman and members of the committee, my name is Bill Cassidy. I am chairman of the Auburn Dam Committee. The committee was formed as a non-profit organization early in the year following the disastrous floods of 1955 which devastated northern California and pointed up the fact that additional flood control storage was vitally needed in the American River Basin.

At the present time our committee consists of 29 members who represent cities, counties, agriculture, and business in the 8-county area comprising Placer, Eldorado, Sacramento, San Joaquin, Alameda, Santa Clara, San Benito, and San Francisco. Many municipalities and various political subdivisions and other interested organizations within these and other counties are represented here today by their statements in support of the project which have been submitted for the record.

During its brief existence (10 years) Folsom Dam, on the American River downstream from the Auburn Dam site, with a capacity of 1 million acre-feet has saved untold millions in property damage to the downstream areas. In 1955 the terrible Christmas week storms struck while Folsom was storing its initial water and was at a relatively low stage of less than 300,000 acre-feet. By the time the storms ceased, Folsom was at capacity after spilling at maximum for 3 days. This uncomfortably close margin has been repeated twice since 1955 and the most dramatically in December of 1964 when the peak inflow reached 280,000 cubic feet per second.

Folsom has been credited with preventing a \$40 million loss in flood damages during our most recent storm.

Had Auburn Dam been constructed and in operation during December 1964, Folsom's flood control capacity would have been doubled and of equal importance to the State of California, Auburn would have stored, for later beneficial use,

much of the 1.5 million acre-feet which passed through Folsom during and immediately following the storm.

Thus the construction of Auburn is vital to the long-range protection of Sacramento against future floods.

At the present time California has a population of 18.1 million people. Projecting an increase to 1985 (20 years) of another 14.3 million in State points up the need for additional water conservation projects in the Central Valley area.

The immediate construction of Auburn-Folsom South is the next logical step in this water conservation program to provide additional water for the proposed service area of Sacramento and San Joaquin areas and to supplement depleting ground water supply in the two counties.

The Foresthill and Malby features of the project are of vital importance to the two counties of Placer and Eldorado. Details of these features are contained in other statements which have been submitted. Other immediate benefits to the two counties will be construction of the Auburn Dam and Folsom South Canal. The recreation features of the project will be in the category of long-range benefits.

The Placer County Water Agency project on the upper reaches of the Middle Fork of the American is nearing completion. The \$115 million project has water rights on the stream, and, through an agreement with the Bureau of Reclamation, a purchase of water both of which amount to 237,000 acre-feet in the aggregate. All of this water will be diverted from Auburn Reservoir through a tunnel into western Placer County. The tunnel and pumping plant are also nearing completion by the local agency at the present time.

When Auburn Reservoir is in operation the water will be diverted by gravity, thus eliminating the necessity for pumping from the river bed.

In summary, the Auburn Dam Committee and the agencies it represents will be benefited by all of the multipurpose uses of the Auburn-Folsom South project.

We urge your committee to recommend the early authorization of this vitally needed project as set forth in the various reports before you.

It has again been a pleasure to appear before your committee today and should you have any questions relating to our committee or our views on the project we will be pleased to answer them for you or secure answers at an early date.

Senator ANDERSON. Mr. Gianelli.

Mr. GIANELLI. I am William Gianelli. I am a consulting engineer from Sacramento. I have a detailed statement which I would like to have introduced into the record.

Senator ANDERSON. It may be done without objection.

(The statement referred to follows:)

STATEMENT OF WILLIAM R. GIANELLI, ON BEHALF OF THE AUBURN DAM COMMITTEE

Mr. Chairman and members of the committee, my name is William R. Gianelli. I am a consulting civil engineer from Sacramento, Calif., and am appearing here today on behalf of the Auburn Dam Committee. I am also appearing as part of the delegation representing the San Joaquin County board of supervisors. This presentation is made in support of S. 599.

The Auburn Dam Committee was organized in 1956 by a number of persons who were interested in the construction of Auburn Dam at the earliest possible date to provide additional, much-needed, water development and flood control on the American River in the Central Valley of California. At the present time the committee has 29 members who represent cities, counties, agriculture, and business in a seven-county area which would be greatly benefited by the construction of Auburn Dam. Among the cities represented are Auburn, Roseville, Foresthill, Colfax, Lincoln, Sacramento, Stockton, and Oakland. Counties with representation on the committee are Placer, El Dorado, Sacramento, San Joaquin, Alameda, Santa Clara, and San Benito. Some of these entities will be represented here today and are presenting detailed statements in their own behalf cover those portions of the Auburn-Folsom South Canal project which are of particular interest to them. Others are submitting detailed statements for the record.

The Auburn Dam Committee was organized as a nonprofit organization in the year following the 1955 disastrous floods in California when it became apparent that additional flood control was vitally needed within the American River Basin of California's Central Valley. It soon thereafter also became apparent that, in addition to providing much-needed flood control, Auburn Dam could function as a multipurpose dam for the benefit of water conservation, recreation, power development, and other incidental purposes. In recognition of the fact that Auburn Reservoir would supply the additional water needed for the Folsom South Canal service area, the Auburn Dam Committee has joined with the potential water users from the Folsom South Canal and is pleased to appear on behalf of the entire Auburn-Folsom south unit as an additional part of the Central Valley project in California. It also supports, as part of the Auburn Dam-Folsom South Canal project, the Folsom-Malby and Foresthill Divide features which will provide major benefits for agricultural, domestic, industrial, and municipal purposes in the rapidly growing foothill area in Placer and El Dorado Counties.

We previously appeared before your committee in February of 1962, and again last spring, in support of the Auburn-Folsom South project. There are a number of representatives on our committee who are vitally concerned with the additional flood control which will be provided by the construction of Auburn Dam and Reservoir. The reservoir will provide an additional 250,000 acre-feet of storage which the U.S. Army Corps of Engineers indicates is necessary to control floods and prevent damage to the highly developed areas along the lower reaches of the American River in the densely populated Sacramento-metropolitan area. As this area continues to expand flood control becomes increasingly more important. It is expected that this flood control storage space in Auburn Reservoir will also reduce flood control damages within the Sacramento-San Joaquin Delta area. The 250,000 acre-feet of flood control storage in Auburn Reservoir, when combined with the flood control space in Folsom Reservoir, would provide a total of 650,000 acre-feet of flood control space on the American River and would control the historical floods on the American River to 115,000 cubic feet per second, the safe channel capacity of the downstream levees.

The last 15 years has seen the American River flows exceed historical previous peak flows four times. In November of 1950 the American River peaked at Folsom at slightly under 200,000 cubic feet per second. During this period an estimated \$3,500,000 in direct damages resulted from the uncontrolled flow. In the Christmas floods of 1955, the peak flow into the newly constructed Folsom Reservoir reached 218,000 cubic feet per second. Luckily damage was avoided as a result of the 1955 floods on the American River, primarily because Folsom Reservoir had been completed just a few months prior to that time and storage in excess of the normal flood control reservation was available.

In 1963 the American River flow at Folsom Reservoir peaked at approximately 240,000 cubic feet per second on February 1. Here again, if these peak flows had persisted for a few days more, severe damage might have resulted from uncontrollable flows. The latest critical situation developed just over 3 months ago in December of 1964. During this period flood flows into downstream Folsom Reservoir peaked at 220,000 cubic feet per second and then skyrocketed to an alltime high reading of 280,000 cubic feet per second as a result of an upstream dam failure. If the storm had continued for 1 more day, and the runoff persisted at its maximum rate, Folsom Dam would not have been able to contain the waters of the American River and the excess flow would undoubtedly have caused millions of dollars of damage in the highly developed Sacramento metropolitan area. From a flood control standpoint, Auburn Dam and Reservoir is critically needed. It is also interesting to note that during the high flow periods of this last winter the American River spilled approximately 1½ million acre-feet to the ocean which amount could have been conserved by Auburn Reservoir for use in the parched valley floor this coming summer.

Auburn Reservoir will provide an additional 365,000 acre-feet of water for irrigation purposes in the Folsom South Canal area. This amount, when combined with water from Folsom Reservoir, will make available 440,000 acre-feet for irrigation in Sacramento County and 273,000 acre-feet for irrigation in San Joaquin County. In addition to the water to be made available for agricultural purposes, the Auburn-Folsom Reservoir combination will make available 139,000 acre-feet of water for municipal and industrial service, of which 65,000 acre-feet would be available for the city of Stockholm and

the remainder would be available for use in other local delta or bay area communities. In addition to the Folsom South Canal flows, 25,000 acre-feet would be made available through Folsom Reservoir for the Malby service area.

Your committee may be interested in knowing that Folsom South Canal is largely a rescue project to maintain existing economy and very little new lands will be irrigated as a result of the project. Furthermore, the land ownership pattern shows 80 percent of the lands to be in ownerships of less than 40 acres; 95 percent in less than 160 acres, and 98 percent in less than 320 acres.

As a basis for illustrating the need for additional water supplies in the Folsom South Canal service area, I have brought with me a large chart which shows the average drop in water levels in Sacramento and San Joaquin Counties during the last 10-year period, from the spring of 1953 to the spring of 1963. It should be noted that the average drop in water level in Sacramento County during this 10-year period has been 21 feet and the corresponding drop in water level in San Joaquin County has been approximately 24 feet. In addition, the large contour map showing the change in ground water levels indicates that in some areas the ground water level is dropping much faster than the averages indicate. For example, in the areas beneath the city of Stockton it may be noted that a cone of depression exists which has placed in jeopardy the entire ground-water basin upon which the city is dependent.

By integration of the Auburn Dam and Reservoir with the Federal Central Valley project, these water supplies can assist, at least on an interim basis, in meeting Federal and State water requirements out of the Sacramento-San Joaquin Delta. At the present time the Federal Central Valley project diverts large quantities of water out of the delta for its Delta-Mendota Canal requirements. Additional large amounts will be required to be diverted from the delta to meet the demands of the Federal San Luis project currently under construction and to meet the State's demands for its San Joaquin Valley-southern California aqueduct system. The State has also contracted with the United States for an interim supply out of the delta to meet the requirements of its south bay aqueduct which will be serving the east and south San Francisco Bay area. In addition, any release of this water down the American River will provide benefits for navigation and salinity control in the Sacramento-San Joaquin Delta.

Auburn Reservoir is of vital importance to the Metropolitan Sacramento area as a recreation facility. One of the advantages of the enlarged capacity of Auburn Reservoir is that it would provide an average water surface area of about 8,700 acres during the recreation season of April through September. A further benefit would result in that Folsom Reservoir could be held at higher operating levels which would provide an additional surface area at Folsom during the recreation season.

The Auburn Dam Committee strongly supports the recreation provisions which have been included in the enlarged Auburn Reservoir currently under consideration because of the growing importance of recreation in our northern California area. The project before you includes a nonreimbursable cost allocation to recreation and fish and wildlife enhancement of approximately \$30 million. Our committee believes such an allocation to be highly justified and we urge the acceptance of the principle of allocation of a portion of the recreation and fish and wildlife costs as nonreimbursable. However, if the Congress determines that the suggested amount of nonreimbursable allocation for these purposes should be changed we would not question such a change. We do desire to point out, however, that with the exceedingly favorable benefit-cost ratio of 3.71 to 1, the Auburn Folsom south unit is highly feasible either with or without the \$30 million nonreimbursable allocated for recreation and fish and wildlife enhancement. We do not wish this vitally needed project to be delayed as a result of any question as to the amount of nonreimbursability of costs allocated for these purposes. Additional presentations will be made to you with respect to the recreation benefits which would be derived as a result of the construction of Auburn Reservoir.

The Auburn unit will be operated with full coordination of both water releases and power output with other units of the Central Valley project. Reregulation of water in Auburn Reservoir and Folsom Reservoir will permit considerable flexibility in the operation of Folsom powerplant and justify the installation of 240,000 kilowatts of initial capacity in the Auburn powerhouse. The powerplant should be provided with capacity for future enlargement by installing capacity of the penstocks, providing turbine foundations, and other modifications to allow for

an increase to 400,000 kilowatts of capacity when future demands of the northern California power market require extra generating capacity. As hydroelectric power in California is used more and more for peaking purposes, providing for an enlargement of the powerplant will more than repay the small incremental cost which might be required at this time to provide for future expansion. To illustrate this point, it is interesting to note that prior to 1940 in northern California about 65 percent of the total installed capacity was in hydroelectric plants which were being used to supply base power loads. By the mid-1950's the ratio had changed to predominantly steam electric powerplants, with hydroelectric plants being used to meet peaking demands. With the limited hydroelectric powerplant potential available, it is expected that hydroelectric power will be in great demand to meet the peak load requirements in the future. Further, it is expected that as nuclear power becomes available it will place ever-increasing demands on the limited hydroelectric power development.

In summary, the Auburn Dam Committee and the agencies which it represents will be benefited by all of the multipurpose uses of the Auburn Dam-Folsom south canal project. We urge your committee to recommend the early authorization of this vitally needed project as set forth in the reports before you.

It has been a pleasure to appear before your committee today and should you have any questions with respect to our organization or our views on the Auburn Dam-Folsom south canal project we will be pleased to answer them to the best of our ability, or to secure answers at an early date for you.

RESOLUTION OF CENTRAL LABOR COUNCIL OF SANTA CLARA COUNTY

Whereas this council has for many years approved and supported the efforts of local public agencies of the counties of Santa Clara, San Benito, Santa Cruz, and Monterey to secure a feasibility study by the U.S. Bureau of Reclamation of a method of water importation into the water-needy area of said counties by means of a tunnel under Pacheco Pass; and

Whereas said study has now been completed by the Bureau and officially released by the Secretary of the Interior and said study indicates that the proposed improvement, titled "San Felipe Division of the Central Valley Project" is a feasible and appropriate means of insuring an adequate supply of supplemental water for beneficial use in the said four-county area; and

Whereas the well-being of our members is directly dependent upon the continued growth and prosperity of the Santa Clara Valley in which we live and such continued growth and prosperity are in turn directly dependent upon water for homes, industry, and agriculture and to halt the damaging subsidence of the valley floor from the present overdraft: Now, therefore, be it

Resolved by the Central Labor Council of Santa Clara County, That the proposed San Felipe Division of the Central Valley project is supported and its early authorization for Federal construction upon terms providing for repayment under reclamation law is urged.

Mr. GIANELLI. Just one or two minor points I think should be mentioned. One is that the service area of this project for irrigation is primarily in the yellow area shown on this map. That is essentially served by ground water supplies which have been dwindling very fast. This is essentially a rescue project to help that area which has had a very fast dropping ground water table.

The other point which I think might be of interest, the landownership pattern there is generally very small ownerships. For example, 80 percent of the lands in this yellow area here are ownerships of less than 40 acres, 95 percent of the lands are less than 160 acres and 98 percent are in ownerships of less than 320 acres.

I thought that might be of interest to this committee. Thank you.

Senator ANDERSON. You won't have the acre limitation problem?

Mr. GIANELLI. I don't think it will give a problem in this area.

Mr. BRODY. By way of conclusion I would like to emphasize that we hope our lack of detailed testimony here or lack of a great number of witnesses will be construed as lack of interest on the part of the people.

This is not the case. We just did not wish to burden the committee. We are ready to answer any questions the committee might have.

Senator ANDERSON. You don't have to worry about that factor, Mr. Brody, because we have gone through the details a good many times. I was a member of the ad hoc committee in the 81st Congress when we considered this project, and it has been before us ever since.

Mr. CASSIDY. I have a few graphic illustrations of the flood in 1964, recently completed, of the damage in the middle fork of the American River where this project will be constructed which may be of interest to the committee.

Senator ANDERSON. Senator Kuchel?

Senator KUCHEL. I have no questions. Once again I quite agree with the statements all these gentlemen have made that the record which has been built on this project in the past sessions, since it is incorporated by the order of the chairman in this record, will abundantly display the widespread approval of the project by the public and private agencies of California from the State government on down.

Senator ANDERSON. Most of this land is now in cultivation?

Mr. BRODY. It is, sir.

Senator ANDERSON. What sort of crops will the 100,000 acres put in cultivation bear?

Mr. GIANELLI. Very largely, Mr. Chairman, I think there will be additional acreage of vineyards and probably crops such as alfalfa and irrigated pasture. These are the crops which are grown in the area.

I think any increases, although they may be small, will be in the general crop area.

Senator ANDERSON. Senator Moss?

Senator MOSS. I am glad to have these gentlemen before the subcommittee again. We had a full exposition on this last time. I am sure that the statements in the record will again make a good record for us to work on.

Senator ANDERSON. Thank you. Let me again assure you that we recognize your interest in this and the interest of the Californians. I am sure it will be as favorably received as it has been in the past by this committee.

Mr. BRODY. Thank you, Mr. Chairman. We certainly appreciate your courtesy and the consideration shown us in this request as well as other past requests.

Senator ANDERSON. Mr. Sprague?

Senator KUCHEL. Mr. Sprague has not been able to arrive from a previous meeting. It was his intention to present to the committee a statement from our Governor. I ask that the Governor's statement be placed at an appropriate place in the record.

Senator ANDERSON. That will be done. Do you have further witnesses?

Senator KUCHEL. No, Mr. Chairman.

In addition I have several statements and telegrams I submit for the record at this point. Also a report on the 1964 Christmas week floods in northern California entitled "One Day From Disaster" prepared by the Bureau of Reclamation which I think will be very informative.

Senator ANDERSON. Without objection they will be included.
(The data referred to follows:)

STATEMENT OF THE NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT, LODI,
CALIF.

North San Joaquin Water Conservation District, with a total area approximately 52,000 acres of urban and agricultural lands, is located in northern San Joaquin County, Calif. The district, formed in 1948 to secure supplemental water supplies, serves a rich agricultural area including the rapidly expanding city of Lodi.

The Bureau of Reclamation feasibility report shows that most of the district is class I land (plate 2) and crop surveys show that the district lands are nearly 100 percent fully developed as they have been for many years.

This area produces all of the Tokay grapes grown in the United States and is famous for its top quality grapes, wines, fruits, nuts and other permanent crops.

Water levels in the district have dropped seriously due to overdrafts. Efforts have been made to develop local Mokelumne River supplies, but the only water is committed elsewhere for ultimate municipal and industrial use and is available to North San Joaquin on an interim basis only. One pipeline and pump station using these temporary supplies pending Folsom South Canal construction, was built and put into service in 1958 at a cost of about \$80,000. Right now, another unit of 5 miles of 48 inch down to 21 inch pipelines and enlarged pumps is under construction at a cost exceeding \$200,000.

The district has entered into a contract for the storage of temporarily available Mokelumne River water, but this supply is on an interruptible basis. In spite of this limitation, the district, in an effort to alleviate the water shortages, is undertaking construction of distribution facilities where it is possible to use the present supplies and also be usable when Folsom South water is available.

As an illustration of overdraft conditions, reference is made to parts of larger ground water maps prepared by the California Department of Water Resources and others. Probably the most important fact indicated on sheet A is the extensive area in which the ground water table is below sea level. Being located near the Sacramento-San Joaquin Delta, ground water is in danger of becoming unusable due to the encroachment of poor quality waters occurring when these ground water levels drop below sea level. Irreparable damage to the ground water reservoir can result if saline or poor quality waters penetrate the aquifers.

On sheet B, the ground water level changes from 1958 to 1963 show the areas where the worst shortages have developed ranging up to 20 feet in the 1958-63 period.

It should be noted that this 1958-63 period includes water years which have varied from very high runoff to years of very low run-off.

The fact that the ground water tables have continued to drop over this period indicate that the supplies are overdrawn and that it cannot be expected that local supplies can meet the deficiency.

To bring about a stabilized water condition, the district must acquire additional permanent water supplies and the Folsom South Canal has been demonstrated to be a feasible facility to make deliveries of American River water. Conjunctive use of Folsom South Canal surface supplies, with the limited local surface and ground water supplies, will permit landowners in the district to maintain their long-existing economy in a healthy condition.

Many small acreage farmers are finding it impossible to finance the deeper wells and larger pumps which are necessary to provide adequate water. The water costs are getting too great for economical use. The result has been that many farmers have been forced to turn to other sources of income to exist. Continued worsening of water conditions will lead to abandonment of these operations, bringing about serious declines of valuation and usefulness.

In this area of water deficiency where we might otherwise expect a declining economy, population pressures have stimulated the demand and desire for small and home properties with the result that the situation gets worse.

Little change in cropping pattern is to be expected as a result of the availability of Folsom South Canal water.

North San Joaquin Water Conservation District strongly supports immediate authorization and construction of the Auburn-Folsom South unit of the Central Valley project.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA,
Los Angeles, Calif., March 30, 1965.

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

DEAR SENATOR ANDERSON: The Metropolitan Water District of Southern California would like to record its support of S. 599 authorizing the Auburn-Folsom South unit of the Central Valley project.

This unit, which will provide extensive benefits to domestic, municipal, industrial, and agricultural users in the San Joaquin and Sacramento areas is another important step in the efforts to bring about the most desirable development of California's most critical resource—water. While Auburn-Folsom will not supply water to the service area of the Metropolitan water district, new water developments of this magnitude produce advantages which are shared by every region within the State.

California's Department of Water Resources is already on record with your committee in support of Auburn-Folsom as a project which is fully compatible with the California water plan, a long-range projection for orderly statewide water development. And the project appears as a logical next step in continuing to meet the increasing demands of the Central Valley project service area, a job being ably carried forward by the Bureau of Reclamation.

The time is past when California can afford to have its water run to the sea when the possibility of its development for beneficial use is feasible. We in California have never hesitated to undertake projects necessary to keep ahead of our tremendous growth. Our State water project is one of the most ambitious ever undertaken anywhere. Metropolitan is the major contractor for water from this proposed system and it will eventually cost us in excess of \$5 billion. Yet the project's feasibility has been amply demonstrated and constructed is underway. In addition, there are a large number of local water projects in process. Waste-water reclamation is being carefully studied and tested. The possibility of getting large quantities of fresh water from the ocean is under examination.

All of this we must do as many areas throughout the State continue to suffer depletion of their surface-water sources, declining ground-water levels, and deterioration in water quality. These problems all exist within the area to be served by Auburn-Folsom. We recognize that only the coordinated efforts of the Federal Government, the State, and local agencies can bring about the solution of these problems. There can be no doubt that Auburn-Folsom is an integral and necessary part of the continuing development of water in California.

Our board of directors respectfully urges favorable action by your committee upon S. 599 at the earliest possible time.

Sincerely,

ROBERT P. WILL,
Legislative Representative.

STATEMENT OF AMERICAN PUBLIC POWER ASSOCIATION

American Public Power Association is a national trade organization representing more than 1,200 local publicly owned electric utilities, mainly municipal systems, in 45 States and Puerto Rico. The association's offices are at 919 18th Street, N.W., Washington, D.C.

Approximately 30 percent of California's populace is served by consumer-owned electric systems, including the largest local publicly owned utility in the United States—the Department of Water and Power in Los Angeles. These systems in California derive their power from numerous sources, including the Bureau of Reclamation's Central Valley project, Hoover Dam, their own generation, and interconnection with privately owned utilities.

Existence of California's publicly owned electric utilities has served as a yardstick in keeping private utility rates equitable, and has contributed greatly to the economic and population growth of that State.

Not only do these publicly owned systems serve urban and industrial loads, but also a number of them serve primarily agricultural loads. In fact, several were organized initially and primarily to provide water and power for irrigation.

Therefore, the interest of American Public Power Association in the Auburn-Folsom south project is not merely the power that would be generated at that project, but includes also the irrigation potential and the other conservation and public purposes served.

AUBURN-FOLSOM SOUTH REPRESENTS FULL DEVELOPMENT

The plan for Auburn-Folsom south represents truly comprehensive development of a river resource. The water which will be impounded by this immense project will irrigate land, generate electricity, provide greater recreational facilities, and serve the domestic water needs of the people in its area. And control of the river, from which the above benefits would be derived, will mean less loss from the rampaging waters which flow annually into the Central Valley.

Recent floods in the Central Valley of California point up the vital need for early authorization and construction of Auburn-Folsom south. According to information provided by the Bureau of Reclamation, had Auburn been constructed prior to the damaging flood which hit northern California in December 1964 its flood control facilities would have greatly eased the tremendous strain placed on the lower Folsom Dam. In addition, the Bureau stated "it is probable that Auburn Dam, operated in conjunction with Folsom Dam, would have made it possible for the Bureau to have stored for later beneficial use 400,000 acre-feet of the 1.5 million acre-feet of water which passed through Folsom Lake during and immediately after the storm."

The 1964 flood, which caused millions of dollars in property damage, emphasizes the need for Auburn as a bulwark against future floods in the Central Valley. And, though Folsom Dam was sufficient to meet the demands placed on it in 1964, water vitally needed to irrigate crops, serve cities, and generate power, was instead wasted to the sea.

WATER SUPPLY, RECREATION, POWER BENEFITS PROVIDED

Auburn is primarily an irrigation project. The water that fills Auburn's huge reservoir will make available 365,000 acre-feet of water per year for irrigation. This irrigation will not expand production of surplus commodities, but rather will increase the production of those many crops indigenous to the California climate, primarily unsupported and unsubsidized food and fiber.

As an addition to California's fast-growing recreational demands, Auburn will maintain the Folsom Reservoir at a desirable level during the tourist season, and thus greatly enhance its value. Auburn itself, if the necessary investments in access are made, will ultimately provide a great deal of recreational value to the people of northern California.

The need for water is an ever-present problem in the arid Southwest; California has embarked on a billion-dollar program to carry water to the population centers below the Tehachapi Mountains. It is also a pressing problem in the area which will be served by Auburn. Municipal and industrial demands are spiraling, and Auburn is designed to offset a share of these demands.

The paying partner to the project—power—will yield 613 million kilowatt-hours a year. Revenues from sale of these kilowatt-hours will provide \$148,855,000 to the Federal Treasury as power's share of the project's cost. These kilowatt-hours will pay \$12,012,000 back into the Treasury to cover power's interest during construction. And these kilowatt-hours will pay \$56,069,000 into the Federal Treasury to help keep the price of water at a level the family farmer in California can afford to pay. Power then will pay back to the Federal Government, over a 50-year period, nearly 50 percent, or \$204,924,000, of the total project costs—50 percent of a project which provide 365,000 acre-feet of water per year to California farmers, an estimated \$375,000 a year saving from floods, millions of dollars in recreation value, and a valuable supply of water for cities and industries.¹

And beyond this, long after the Auburn Dam has been fully amortized, power will continue to provide revenues to the Federal Government, and other benefits to the Nation.

POWER POTENTIAL NEEDED IN CALIFORNIA

The supplemental evaluation of the Auburn-Folsom south project provides for considerably more comprehensive development of the American River. Not only is the storage capacity of the project more than doubled—1 million to 2.5 million acre-feet—but also the potential power development is nearly tripled. Whereas original plans called for a total power installation of 155,000 kilowatts, the

¹ These figures are based on the supplemental report released by the Bureau of Reclamation and are considered by APPA to be extremely conservative, as they are based on the present contract with P.G. & E. and do not consider future modifications of the contract to credit increasing value of the hydropower.

project now provides for an initial installation of 240,000 kilowatts with an ultimate capacity of 400,000 kilowatts.

California, the Nation's fastest growing State, has an ever-increasing demand for electricity. Not only is this demand going up because of the population explosion, but also higher per customer usage is promoting greater overall consumption. The experience of the municipal electric utilities in northern California has more than adequately proved that unit costs decrease with an increase in consumption, thus resulting in an even greater demand. If future demands are to be met, projects like Auburn must be built.

The initial installation of 240,000 kilowatts of capacity would be well suited to the market for Auburn power. The municipal electric systems and irrigation districts need an increasing supply of power. At the same time, the "energy bank" arrangement with the Pacific Gas & Electric Co. makes it possible for the nongenerating public agencies to purchase firm power from the Bureau of Reclamation while P.G. & E. uses the low-cost hydro to replace more expensive power to meet its ever increasing peaking demands. In this way preference customers, private power, and the Government profit.

OPTIMUM DESIGN OF ELECTRIC PLANT REQUIRED

With the increasing size of individual thermal electric units, it becomes uneconomic to handle peaking loads with these units. The large sized steam units can only be operated most efficiently when they are kept at almost constant load close to their maximum capability. In view of this trend in generating unit design, it becomes increasingly important to have units available that are able to carry peaks—i.e., able to pick up load quickly and operate efficiently over a wide range of varying loads. This has always been a typical characteristic of hydroelectric units. Hydro is becoming increasingly valuable as a means of carrying the peakloads, while the large steam generators operate efficiently on baseload. Although it is possible to design steam units for peaking, it is extremely costly to do so. On the other hand, changing a hydro unit from baseload to peakload design is only a matter of placing additional penstocks in the dam to permit the installation of additional generating capacity as it is required.

Because of the peaking power problem, and because of the growth of the California market for power, the Bureau of Reclamation has wisely made provision for eventual expansion of the Auburn plant to 400,000 kilowatts. Although this will require an initial extra investment of \$13.5 million, substantially greater costs will be averted when the additional energy is needed later. The proposed additional \$13.5 million is for construction of the necessary appurtenances for future generator installation. When the demand for peaking power reaches the point that installation of an additional 160,000 kilowatts is warranted, the substantially higher costs of facilities installed as an "afterthought" will be averted. Only the generators will have to be purchased and installed.

BUREAU SHOULD BUILD PROJECT TRANSMISSION

As provided for in authorization bills before the committee, "necessary electric transmission system for interconnection with the Central Valley project power system" should be authorized for Bureau construction. This policy has been applied at other Central Valley project dams to insure proper integration of generating plants with the Bureau's overall electrical system, and last year the Congress approved Bureau construction of an extra high voltage transmission line to provide a federally owned and operated interconnection between the Bonneville Power Administration and the Central Valley project, thus giving the Department of the Interior maximum opportunity to pool power from these two Federal systems for optimum advantage to the Government.

In considering recreation and fish and wildlife cost allocations in connection with the project, it would seem desirable to take into account the provisions of the legislation currently before the committee to establish uniform standards for treatment of these project purposes. The present proposals, embodied in H.R. 5269 and S. 1229, represent a revision of the standards applied to the Auburn-Folsom South project last year.

Interest in this project on the part of the American Public Power Association was reaffirmed at its most recent convention, where the attached resolution was passed unanimously.

RESOLUTION ADOPTED BY 22D ANNUAL CONVENTION, AMERICAN PUBLIC POWER ASSOCIATION, JACKSONVILLE, FLA.

AUBURN DAM

Whereas the Auburn Dam unit of the Central Valley project in California is now proposed for authorization and such unit will provide much needed power, irrigation, water, and flood control; and

Whereas congressional hearings held in 1964 show that the project is fully feasible and would have an ultimate capacity of 400,000 kilowatts to create a new block of low-cost energy and to provide power revenues as a "paying partner" for reclamation; Now, therefore, be it

Resolved, That the American Public Power Association urges the Congress to authorize the Federal Government to construct and operate Auburn Dam as an integral unit of the Central Valley project of the U.S. Bureau of Reclamation.

STATEMENT OF TIMOTHY V. A. DILLON, FOR THE SACRAMENTO MUNICIPAL UTILITY DISTRICT

The Sacramento Municipal Utility District, established pursuant to California's Municipal Utility District Act, commenced operations in 1947. That year there were some 245,000 people living within its 656-square mile area and the peak demand on the system was 76,857 kilowatts. Today the population is over 625,000 or more than 2½ times greater than it was in 1947, and the peak demand has increased sevenfold to 545,590 kilowatts. Projections place the district's population in the mid-1970's in excess of 1 million people, and a peak demand on the district's system of about 1,500,000 kilowatts.

To meet these responsibilities the district must plan for power supplies years in advance of actual needs.

At the present time, the district has a long-term contract for delivery of 290,000 kilowatts, plus an allocation of an additional 70,000 kilowatts from the Federal Central Valley project. In addition, the district is constructing its own Upper American River hydroelectric project on the South Fork of the American River which, when the second phase is completed in 1968, will produce 600,000 kilowatts. The total capital cost of the project is expected to be \$212 million. Last year 788 million kilowatt-hours were delivered by the project.

To supplement its future needs the district is currently investigating other sources of power including the feasibility of a nuclear-powered steamplant. Since the Auburn-Folsom Dam and powerplant would be located only 30 miles north of Sacramento, that project could play an important part in providing additional sources of power in northern California, and will firm up the Central Valley project power supply for a long period of time.

Considering the proposed Auburn project from a broader point of view the district feels the development would not only make available power needed by the district and others in northern California but would provide irrigation and municipal and industrial water in the Sacramento and San Joaquin County areas and beyond which are required to sustain the economy in this part of the State. Moreover, the recreation potential of the project is enormous. Based on the extensive use of Folsom Reservoir, located at Sacramento's back door, which we have observed, and the growing use of the lakes created by our own hydro project on the American River, we have no doubt that the Auburn Reservoir area will be used and enjoyed annually by thousands of persons.

The district is pleased that the proposed project has been planned so as to maximize utilization of this excellent water resource. It has been our observation that rarely are developments of this kind built large enough. As time goes on and the remaining sites for large multipurpose projects grow scarce, it becomes even more vital that they not be undersized. Certainly the water and power to be developed by Auburn can be fully utilized. And, the Interior Department's report shows the project to be highly feasible with an impressive benefit-cost ratio of nearly 4 to 1.

In its recently issued National Power Survey report, the Federal Commission commented on the benefits of hydroelectric power as follows:

"Conventional hydroelectric projects have many favorable characteristics which provide strong incentives for developing our remaining potential waterpower sites. They utilize a renewable resource, they do not contribute to thermal and air pollution, and they are very reliable in operation. Because of their ability

to start quickly and make rapid changes in power output, they are particularly well adapted for serving peakloads and for assisting in the supply of spinning reserve. In many cases the development of hydroelectric power provides such associated benefits as recreation, water supply, fish and wildlife enhancement, and flood control. The increasing demands of these purposes provide impetus for the preparation of long-range basin plans harmonizing the water requirements for all uses."

According to the Federal Power Commission, in 1950, 60 percent of the total generation in California was hydro. By 1960 this had dropped to 27 percent. The Commission's report goes on to predict that by 1975 hydro will constitute only 16 percent of the total energy produced in the State. This is important to your evaluation of Auburn-Folsom because it indicates that smaller and smaller amounts of energy need to be associated with hydro capacity to make it usable in serving the loads of California. This then justifies the installation of plants with larger and larger capacity for peaking purposes. An example of this tendency is demonstrated by our own hydro project.

As conceived only a few short years ago, we planned a total capacity of 230,000 kilowatts. We now plan to install 600,000 kilowatts. Although our storage has been increased somewhat, the basic reason for the enlargement is the change in the ration between steam and hydro caused by the diminishing number of hydro sites and the tremendous load growth in the area. The district knows of no other hydro sites it can develop and so must make the most of the ones it has. We suggest the same policy for Federal installations.

The Sacramento Municipal Utility District heartily endorses the Auburn-Folsom south unit of the Central Valley project as proposed by the Department of the Interior and urges its approval.

STATEMENT OF CLARENCE A. REEVES, COUNCILMAN, CITY OF AUBURN, CALIF.

I appeared on behalf of the City Council of the City of Auburn relative to this matter on May 4 and 5, 1964, and do hereby submit the following statement:

Portions of the proposed reservoir will be situated in the city limits of Auburn. So, with a personal knowledge of the project, I hereby indicate our very strong support of S. 599, to authorize the Auburn-Folsom South unit of the Central Valley project, and urge your approval of the bill.

As the county seat of a diversified county which is growing with heavy urban and industrial development in the southwest, with increased agriculture in the northwestern portion, and heavy recreation in the mountainous eastern portions of the county, the city has a broad interest in all of the benefits which will be derived from construction of the project.

Many of the facets of the project will be covered by other witnesses, so to avoid duplication and in the interest of saving time for the committee, I have condensed my statement here today to place emphasis on the tremendous recreational benefits which will accrue not only to our immediate area, but to the surrounding counties, the State, and the Nation.

At the present time the American River Basin is rapidly being developed into a recreation corridor ranging from Discovery Park at the confluence of the American and Sacramento Rivers to the crest of the Sierra Nevadas, including the world renowned Squaw Valley and Lake Tahoe. This area now serves a varied and growing metropolitan region. The facilities that can be provided at Auburn will make a significant contribution to this recreation complex with a statewide impact.

Folsom Reservoir facilities attracted 2,861,264 visitor-days of recreation use in 1963—an annual increase of nearly 30 percent over 1962, according to figures from the California Division of Beaches and Parks, which operate the largest of the public facilities on the lake. The proposed Auburn Reservoir will enhance the existing facilities at Folsom and the use of both reservoirs will be required to help meet the ultimate demands for water-oriented recreationists in northern California. According to the recently released Placer County outdoor recreation plan there will be a deficit of water surface areas in Placer County by 1985 for recreational use—even with Auburn Reservoir.

Over 6 million people reside within 150 miles of the Auburn-Folsom Reservoir complex. The pressure of future demands upon Folsom Reservoir will create overuse conditions harmful to the operation of the Folsom project and the surrounding community.

Due to the gently sloping shoreline in many places in the Folsom area, unsightly mudflats are visible during a large portion of the recreation season, and pose difficulty in launching boats and in otherwise obtaining safe access to the water.

However, the National Park Service, investigating this aspect of the project for the Bureau of Reclamation, points out that with Auburn Reservoir in operation, the present circumstances will be improved by reducing the average drawdown of Folsom Reservoir to a mere 27 feet during peak recreation use.

In view of the proposed method of operation of the two reservoirs, the resultant recreational services possible will serve both the visitor and the permanent resident of the region in several ways—not the least of which is esthetic satisfaction.

The Park Service further states that under the favorable operating conditions predicated on construction of Auburn Reservoir the visitor-day use at Folsom will reach its maximum potential of about 10 million annually within the next 20 years.

The primary uses at Folsom are pleasure boating, water skiing, fishing, swimming, picnicking, sightseeing, and sunbathing. Camping presently is not allowed in the Folsom Lake area, although the operating agency plans to install such facilities in the near future.

The reservoir to be formed by Auburn Dam would be greatly different in character and appeal for the recreational user.

Rather than a large, broad body of water as is Folsom Lake, it would consist of long narrow arms of water extending far into an area of steep, forest-covered, scenic canyons. This characteristic further enhances comparison and value. The Park Service estimates a future visitor-day use of Auburn Reservoir of 5 million annually, provided proper access is made available.

Certainly, camping, picnicking, hiking, will be major attractions, as well as boat trips far up the scenic canyon arms of the reservoir into areas hitherto inaccessible.

I believe, as does the Park Service, that visitor-day forecasts are conservative in view of increasing availability of leisure time, the growth of the surrounding metropolitan areas, and the unprecedented popularity of boating.

I am convinced that the day is past when the Nation or the State can afford not to develop the full potential of the few remaining good dam and reservoir sites. The growing need for water supply, for stabilization of energy for hydroelectric power, for flood control, and for recreational opportunities clearly demonstrates this point.

In summary, authorization and construction of the Auburn-Folsom south unit would produce tremendous recreational benefits both to our city and county and most certainly to a vast urban population in the valleys below.

Recreation is a beneficial use of water along with irrigation, domestic power, and flood control. In fact our recreation formulations may be one of our most significant contributions to the future.

The city of Auburn strongly supports the Auburn-Folsom south unit and urges that your committee approve S. 599 to authorize the unit.

I thank you for the opportunity of appearing before you.

CLARENCE A. REEVES,
Councilman, Chairman, Public Works Committee,
City of Auburn, Calif.

AEROJET-GENERAL CORP.,
Sacramento, Calif., March 25, 1965.

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

DEAR SENATOR MOSS: It is our desire to make a statement in behalf of S. 599.

Aerojet-General Corp., as early as July 1959, has gone on record in strongly urging an early authorization and construction of the Auburn-Folsom south unit of Central Valley project, California. With the experiences suffered by many communities in northern California during the past season's floods, it would seem all the more important that immediate efforts be taken to divert unharnessed sources of water into controlled and beneficial uses such as is proposed by the Auburn Dam and related units.

Being industrially oriented, Aerojet has been ever conscious of the huge industrial potential of eastern Sacramento County and the importance of water for

industrial uses. Our company's experience is used only as an example of what can happen in a semiarid region when ample water is made available. In 1954 Aerojet-General had 600 employees at its Sacramento plant. Today it employs over 14,500. Aerojet's current annual payroll is approximately \$120 million. Investment in Aerojet Sacramento plant facilities is in the order of \$20 million. Other industries like this can develop in the area if conditions are favorable. New industries mean new jobs and a better economic future for all of California. It is evident that planning for future water supplies is vital to the future of Sacramento County.

Certainly it behooves us, through these projects, to reap the most reasonable and beneficial uses of our water in industrial, agricultural, and flood-control applications.

Sacramento County has a magnificent opportunity to prepare for unprecedented growth in the next 50 years as an industrial area that is second to none in California. It would be extremely unfortunate if this opportunity were stifled by lack of planning and legislation to provide the water necessary for such a growth.

We sincerely urge full support of these programs.

Very truly yours,

R. B. YOUNG,
*Vice President and General Manager,
Sacramento Plant.*

STATEMENT OF J. E. LITTLE, MEMBER, AUBURN DAM COMMITTEE

Mr. Chairman and members of the committee, my name is J. E. Little, consulting civil engineer from Foresthill, Calif. I am a member of the Auburn Dam Committee and represent the people of the Foresthill Divide; therefore, the remarks in my testimony will be confined to the Foresthill Divide project of the Auburn-Folsom south unit of the Central Valley project. I am presenting with this statement, resolutions from the Foresthill Divide Chamber of Commerce and the Foresthill Public Utility District, with the request that these Resolutions be made a part of the record.

FORESTHILL DIVIDE AREA

The Foresthill Divide area has been well described in the Report of the Bureau of Reclamation on the Auburn-Folsom South unit Central Valley project, California. This statement concerns that part of the Divide lying within the limits of the proposed Foresthill Divide unit of the project. This area includes the town of Foresthill with a population presently estimated at 1,000, and a total population on the divide estimated at 1,400.

Climate, and the soil which is suitable for irrigated crops, are ideal for the propagation of orchards and many other crops, none of which are under Government support or in excess supply. These include walnuts, chestnuts, filberts, berries, and irrigated pasture. Reclamation Bureau reports state that within the area of the proposed project lie 1,340 acres of land suitable for irrigated crops. Irrigable lands westerly and below the proposed project have been variously estimated to be from 5,000 to 15,000 acres. It would seem that the latter figure is more realistic and while this latter area is not presently under consideration in the project, it is well to remember that the potential for future expansion exists.

AREA RESOURCES

Gold mining, which at one time was the principal industry of the area, is no longer of major importance. The economy of the district today is principally supported by the lumber industry. Tributary to Foresthill is one of the finest remaining stands of pine timber in the West. The estimated sustained yield production from this area is 45 million board feet of lumber per year.

Cattle raising is practiced on a limited scale and while no irrigated crops are commercially produced, the agricultural land within the area is an important resource.

If water were made available for irrigation, the agricultural land would become a far more important resource and its development would serve to round out the economy of the area.

The recreational potential of the area is an important resource. This has been well covered by the report of the National Park Service to the Bureau of Reclamation so I will make no further comment thereon.

PRESENT DEVELOPMENT

There are two lumber operations close to the town of Foresthill which are the backbone of the present economy of the divide. These mills employ approximately 350 men and have an annual payroll estimated at \$2 million.

Commercial agriculture within the proposed project area has begun on a non-irrigated basis. In 1956, Prof. E. F. Seer, nationally known pomologist and expert on walnut culture of the Agricultural Extension Service at the University of California at Davis, was commissioned by a Mr. Murphy to make a detailed study of the soil and climate of the Foresthill area. This study indicated ideal conditions for the culture of walnuts. Following this study, Mr. Murphy, Prof. Serr, Dr. Sam Talley, retired research chemist of Shell Oil Co.; Prof. Ralph Parks, of the University of California at Davis; and others acquired property within the project area and started clearing land and planting of walnuts. Water for starting the young trees was supplied by tank truck. About 100 acres have been planted to date. All are doing well and some are now coming into bearing. Some interplanting of apples was done. There are definite plans to progressively increase the orchard plantings by 500 acres. These men figure that unirrigated walnut orchards will, when mature, produce a gross annual yield of \$300 per acre, and that American chestnuts, of which they propose to plant an acreage, would produce a gross annual yield of \$500 to \$800 per acre.

There is one 20-acre apple orchard now in production within the project area.

WATER DEVELOPMENT

In the old days several ditches brought water from the high country to the Foresthill area for gold mining. No storage was provided and the use of water was limited to the months of the year when runoff waters were available. These ditches are completely inoperative today.

The Foresthill Public Utility District bonded itself to the limit and completed a water system in the town of Foresthill. This system cost \$215,000 and began water service in 1954 with an initial 140 connections. In October 1963 there were 247 connections.

The water supply of the public utility district depends on springs during the dry season. The Foresthill Public Utility District reservoir of approximately 750,000 gallons capacity provides the only storage in the system. In the 1962-63 fiscal year, the public utility district served to its customers a total of 121 acre-feet of water, of which 17.6 acre-feet went to industrial use. During the dry months of the year there was, as usual, a water shortage and it was necessary to curtail service to industrial users. No water was available for irrigation. This shortage during summer months is chronic, and in dry years such as 1959-60, it is necessary to curtail service to domestic users as well.

The sawmills have each developed a limited supply from springs which are estimated to produce about 90 acre-feet per year. Definite figures are not available.

Spring sources produce an estimated 34 acre-feet of water per year in the area west of Foresthill outside of the present public utility district boundaries, but within the project area. Definite figures are not available.

There is an additional source of water utilized at Baker Ranch about 3 miles above the Foresthill Public Utility District reservoir. This supply is fully utilized in that area, therefore, can be of no benefit to the area within the project boundaries. It is probable that the total of all of these sources may, in an average year, produce some 300 acre-feet of usable water.

WATER SUMMARY

Water service in Foresthill is at a starvation level. At present rate of supply of available water, the public utility district cannot take on additional customers and must, through cooperation with domestic users, curtail their supply in order to supply supplemental water to the lumber mills which are the backbone of the local economy.

The lumber mills, even with supplemental water as above, are restricted in their operations and cannot enlarge their production, or plan to make greater utilization of the wood they haul in from the forest, for lack of water.

Each mill is today air drying many millions of feet of lumber which might better be kiln dried. This because water is not available with which to operate the increased dry kiln capacity needed to correct and stabilize the operation.

There is no water for irrigation so irrigated farming cannot be considered.

The water rates of the Foresthill Public Utility District are necessarily high due to the small amount of water served. Their income is from two sources—taxes and direct water sales. In the fiscal year 1962-63, this income per acre-foot of water sold was as follows:

	<i>Per acre-foot</i>
Income from water sales.....	\$201. 78
Income from tax receipts.....	114. 33
Total.....	316. 11

FUTURE DEVELOPMENT

The future development of Foresthill and the surrounding area depends almost entirely upon the development and availability of adequate supplies of water. The Foresthill Divide unit of the Auburn-Folsom south unit, Central Valley project, would accomplish this.

The Foresthill Public Utility District would then be in position to serve all customers requesting service, and the urban area would grow to accommodate the increase in population which is sure to come with the population explosion which is now evident in the State of California.

The lumber mills in Foresthill would be able to increase their production, produce better dry lumber, and expand their facilities for increased utilization and diversification of their products as is being done in other lumber production centers.

The horticulturists who are planting orchards are of the opinion that under irrigation they could expect to harvest a yield two to four times greater than could be obtained under nonirrigated methods. It would seem that with water available, the area which the Bureau engineers have estimated to be suitable for irrigated agriculture would soon be utilized.

Some increase in the number of cattle sent to market can be expected if it is practical, considering the water costs involved, to raise irrigated pasture. All of these things will contribute to a well-rounded community development which will increase the production and economy of the county of Placer and add to its assessed valuation. It seems more than likely that if this project were already started, it would not be long before the water production of the proposed project would be fully utilized and studies would be necessary for future enlargement of the system.

The people of the Foresthill area passed their public utility district bond issue with a very heavy majority. They passed the \$140 million bond issue for construction of the upper American River project of the Placer County Water Agency with more than a 99-percent affirmative vote. They are water conscious.

These water-conscious people of Foresthill thank you for your consideration and for the time you have allowed for this presentation.

STATEMENT OF DR. THOMAS J. ROSSITTO, PRESIDENT, AUBURN AREA CHAMBER OF COMMERCE

We respectfully submit to you, Mr. Chairman and members of the committee, the resolution adopted by the Auburn Area Chamber of Commerce favoring the Auburn-Folsom South Canal unit of the Central Valley project.

This Auburn-Folsom south unit truly represents comprehensive development of a natural resource. The water which will be impounded by this immense project will irrigate land, generate electricity, provide greater recreational facilities, and serve the domestic water needs of the people in the area as well as control the waters of the river and prevent flood conditions in the Central Valley areas.

The Auburn Reservoir itself when developed will provide a great deal of recreational opportunities to the people of northern California. As an addition

to California's fast growing recreational demands, the Auburn unit will maintain the Folsom Reservoir at a desirable level during the tourist season and thus greatly enhance its value.

The history of California shows it is constantly in need of water and in more recent years in need of new waterways for healthy recreation. The people's demand for domestic water, power, flood control, and recreation simply cannot go unheeded.

The Auburn Area Chamber of Commerce sincerely hopes that your committee will fully support the proposed project and favorably approve the legislation.

RESOLUTION

Whereas the Congress of the United States has before it the revised report recommending the early authorization of the Auburn Dam-Folsom South Canal unit of the Federal Central Valley project; and

Whereas this project has been before the Congress of the United States under a previous report for a number of years; and

Whereas the facilities to be constructed under this project are vitally needed to supply water to areas within Placer, Sacramento, El Dorado, and San Joaquin Counties; and

Whereas these facilities are necessary for the full development of the American River as part of the Federal Central Valley project and they will also provide additional much needed flood control, as was evidenced this past year, along the lower reaches of the American River, the Sacramento River, and within the Sacramento-San Joaquin Delta; and

Whereas recreation is an important and beneficial use of water along with irrigation, domestic power, and flood control; and

Whereas the Auburn Area Chamber of Commerce has in the past urged early authorization of this project which is vitally needed to areas in northern and central California for the purposes of providing flood control, recreation, fish and wildlife, power, irrigation, and municipal water supplies: Now, therefore, be it

Resolved, That the Auburn Area Chamber of Commerce urges the appropriate committees of the House of Representatives and the U.S. Senate to authorize said project and urge the early construction of this facility; and be it further

Resolved, That copies of this resolution be forwarded to those public officials concerned.

THOMAS J. ROSSITTO, M.D.,

President, Auburn Area Chamber of Commerce, Auburn, Calif.

Dated March 25, 1965.

STATEMENT OF JOHN W. MCFARLAND, GENERAL MANAGER, EAST BAY MUNICIPAL UTILITY DISTRICT

Mr. Chairman and members of the committee, the East Bay Municipal Utility District of Oakland, Calif., is the publicly owned municipal and industrial water supply agency for the metropolitan area on the east side of San Francisco Bay, and serves a population of more than 1 million people in 13 cities and adjacent unincorporated areas. The district has consistently advocated the Auburn-Folsom South unit of the Central Valley project since its inception and again wishes to recommend its authorization.

The district has submitted statements at previous hearings setting forth in detail the estimate of its future water requirements and the extent to which these requirements could be met by means of the Auburn-Folsom South unit. The details are a matter of record and will not be repeated here. In brief, the district has an estimated future requirement for supplemental water supplies amounting to 225,000 acre-feet per year, of which as much as about one-third, or 74,000 acre-feet per year, is capable of being supplied by the Auburn-Folsom South unit, according to the supplemental report now under consideration. We are obviously concerned that only about one-third of our supplemental requirement might be met through this project, and we are continuing our negotiations with the Bureau of Reclamation and other agencies concerned in the hope that by this project and others now in the planning stage, our full supplemental needs can be fulfilled.

We also recognize the pressing need for additional water in San Joaquin County to offset the diminishing ground water supplies there. Our studies of

conditions in northern San Joaquin County, where our Camanche Dam is located, have shown that imported supplies are urgently needed to supplement those locally available. The Auburn-Folsom South unit will alleviate this situation materially. For this and the foregoing reasons, the East Bay Municipal Utility District recommends your favorable action.

STATEMENT OF HARRY J. DUNLOP, SECRETARY, EL DORADO COUNTY WATER COMMITTEE

Mr. Chairman and members of the committee, my name is Harry Dunlop. I am secretary of the El Dorado County Water Committee and secretary-manager of the El Dorado Irrigation District. We appreciate the opportunity of presenting this statement regarding the Auburn-Folsom South unit of the Central Valley project in California. While El Dorado County is not in the area of major use of water from this project, a substantial portion of the water for the project originates as rain and snow in our county, and therefore we have more than a passing interest in this development.

Central El Dorado County is presently the beneficiary of a reclamation development—the Sly Park unit of Central Valley project. We are familiar with the change that takes place in a community when a water supply is made available. Growth results—we are presently living in the midst of this growth. But we have not always had this blessing. A short time ago we lived under entirely different conditions. The water shortage in our area was so severe that it was necessary for the district to deny requests for water service. It is most difficult to describe the anguish associated with telling a person who is full of hope with the prospects of developing his lands that he cannot do so because there is no water available for his use. With completion of Sly Park unit, this condition does not now prevail in central El Dorado County; but it does prevail in western El Dorado County—a short 15 miles west of the city of Placerville. In the dry summer months there is no water in any quantity in this area. The proposed works to serve the Folsom-Malby area will provide water service to a gross area of some 6,000 acres in western El Dorado County.

But why is it important that this feature be included in the Auburn-Folsom South unit? May I cite an existing development as one example. There is a veneer plant located along the railroad through this area. This particular location for the plant was chosen, among other considerations, because of its strategic position with respect to raw materials, labor market, and transportation. The plant employs about 100 people who live in Sacramento, Amador, and El Dorado Counties and represents a capital investment of some three quarters of a million dollars. However, the search for water has been most discouraging. Two wells were drilled—two holes in the ground—one 115 feet deep and the other 154 feet deep developing a total supply of some 20 gallons per hour. Only by the most conservative use of water, by enforcing the strictest of conservation measures does the water supply permit operation of the plant in the dry summer months. This area is not blessed with an underground water supply as are other areas in the great Central Valley of California. If this plant is to survive, it must have an adequate water supply.

An industrial complex has developed in eastern Sacramento County which has played an important part in the Nation's defense and space programs. Aerojet General Corp. and Douglas Aircraft Co. have substantial facilities in this area. Western El Dorado County is within 5 miles of this complex but has had no development partly because of the complete absence of an adequate water supply.

However, this is not the only need involved. People are coming into El Dorado County in great numbers. Much as some old timers might like to put a stop to this virtual invasion, we cannot do so. The population of El Dorado County has almost doubled in 10 years (16,207—1950 census to 29,390—1960 census; current population is estimated as 40,000). While much of this increase has been concentrated in the Lake Tahoe area, western El Dorado County is just now beginning to feel the impact of population growth resulting from development in the Greater Sacramento area. Some studies and projects show El Dorado County population doubling again between 1960 and 1970 with a major portion of this growth occurring in western El Dorado County. To serve these people there must be water. It will take several years, perhaps 5 to 10 years, to build this project and place it in operation. If construction were to start immediately it would not be too soon.

Local special districts as well as the county have been active over the years in attempting to solve our water problems. The El Dorado Irrigation District for some 35 years exhausted every avenue of self-help and at the point of despair turned to the Bureau of Reclamation for assistance. Studies were conducted and with the very capable and able assistance of the late Senator Claire Engle, then Congressman representing our area, the Sly Park unit of Central Valley project was authorized and built. With authorization of this project there was pioneered a new concept in water development which has since been applied to other more recently authorized projects. This new concept suggested that benefits should accrue to areas located upstream from a multipurpose project as well as to areas downstream. We believe this concept is both reasonable and equitable. It appears to us that nature has decreed the interdependence of these two areas for there would be no water for downstream users if it did not initially fall in upstream areas.

I would be remiss in discharging my responsibilities if I failed to mention the continuing efforts being made by the Georgetown Divide Public Utility District, Southside County Water District, Pollock Pines-Fresh Pond Public Utility District, El Dorado Hills County Water District as well as the private water companies, each in their attempt to solve water problems in their respective areas in El Dorado County. Knowing the difficulties associated with a water development project in our county, they join me in urging that you give favorable consideration to early authorization of construction by the U.S. Bureau of Reclamation of the Auburn-Folsom south unit, including the Forest Hill Divide and Folsom-Malby area features as part of the Central Valley project in California. Thank you.

STATEMENT OF RAYMOND G. CHISM, CHAIRMAN, BOARD OF SUPERVISORS,
EL DORADO COUNTY, CALIF.

Mr. Chairman and members of the committee, my name is Raymond G. Chism. As chairman of the Board of Supervisors of El Dorado County, Calif., it is my pleasure to present this statement regarding the Auburn-Folsom south unit of the Central Valley project. Water development in and for El Dorado County has been a subject of great concern to me.

Some 114 years ago the discovery of gold focused nationwide attention on that area which is now our county in the State of California. It is an historical fact that the exploitation of our resources in the form of gold mining played an important part in the success of the north and the preservation of this great American Union. As a very necessary part of mining operations there initially developed crude means of obtaining a water supply. More intricate and complicated canal systems were later built which form the backbone of our present water supply systems. These old canals have served us nobly and well but they have severe limitations and they do not serve the western areas of El Dorado County.

As development has occurred on the floor of the Central Valley of California, there has been increasing need for multipurpose water development on the major streams of the valley, one such stream being the American River. Folsom Dam was constructed in 1955 to conserve waters of the American River. At the time of construction we had very little expectation of utilizing directly any of this water within our county. Nevertheless, we were favorably disposed toward this development and strongly supported its construction. In the comparatively short time since its construction, conditions in western El Dorado County have changed so drastically that we are witnessing development of a substantial area with water from Folsom Reservoir.

While the major agricultural service area for water to be developed by the Auburn-Folsom south unit of the Central Valley project is located west and south of El Dorado County on the floor of the valley, development of this additional water will result in direct benefits to our county and will materially assist in providing a solution to our present and growing water problems. A major contributing factor to the present lack of development in the western portion of the county is the nonexistence of a water supply. We cannot overdraw our underground water supplies because we have none. The availability of a water supply to this area, as in the case of Folsom Reservoir, will result in major and substantial development.

If for no other reason, the basic benefits to El Dorado County from water conservation features of Auburn Dam would be ample reason for our enthusi-

astic support for this project. Increasingly, however, benefits from recreation potentials are significant. We have been through the experience of attempting to assist in bringing order to recreational uses in the Folsom Lake area after construction of this project. The three affected counties—Placer, Sacramento, and El Dorado—have worked together in a Tri-County Planning Commission and with State and Federal entities. Our experience in this case and in the case of furnishing recreation facilities at Sly Park is such that we heartily endorse and support the changes now in effect in recreational planning on this proposed project at Auburn, Sugar Pine, and County Line Reservoirs. Upon completion of construction at Folsom and Sly Park, people came to use and enjoy the area. However, no preparations had been made for these people and there was a period of confusion while local, State, and Federal entities worked to resolve this problem. We are much encouraged by the advanced planning for recreation on features of this unit of the Central Valley project. With the proposed minimum expenditures for recreation in which we concur, it will be possible to have basic preparations made on completion of construction to take care of the hundreds, and yes, even thousands of people who are sure to visit and enjoy these projects. We trust that this will go a long way to eliminate the confusion which we witnessed on completion of construction at Folsom and Sly Park. El Dorado County is increasing its ability to administer a recreation program. The county now has a recreation commission which administers an annual budget of about \$100,000 which to a "mountain county" such as ours is an appreciable amount.

I should like to dwell for a few moments on one other point and that is the extent of water development activity in El Dorado County. As I mentioned earlier, construction at Folsom and Sly Park Dams of the American River division of the Central Valley project was completed in 1955. This provided a substantial amount of supplemental water supply to the county and has been a major factor in the tremendous growth which we have experienced over the past 10 years. But this has not been the only water development program in the county. The Sacramento Municipal Utility District has its upper American River project—a hydroelectric development with costs of over \$100 million—under construction. The Georgetown Divide Public Utility District has completed construction of the Stumpy Meadow Reservoir under the Public Law 984 (Small Reclamations Act of 1956) loan program. The Legislature of the State of California created the El Dorado County Water Agency in 1959, which agency is specifically charged with the responsibility of the water development at the county level. The agency has contracted with the Bureau of Reclamation for a supply of water from Folsom Reservoir to potentially serve a gross area of some 50,000 acres in western El Dorado County adjacent to this reservoir. The agency has also engaged in intensive studies on a matching fund basis to determine the remaining feasible project to service El Dorado County. In undertaking this study program the agency has spent or obligated sums in excess of \$160,000. El Dorado County has demonstrated by contracts and further studies its intent to not just talk about water problems but to do something about them. We trust that our actions speak louder than our words.

We have had a realistic and most heartening relationship between local, State, and Federal governmental entities in our county as exemplified by Folsom, Sly Park, and Stumpy Meadows developments. We think this is a proper area for cooperative effort and we strongly endorse the program. There is tremendous local support in our county for this proposed project. For the record may I present you with copies of resolutions from local groups supporting early authorization of construction. The people of El Dorado County trust that you will give favorable consideration to early authorization of construction by the U.S. Bureau of Reclamation of the Auburn-Folsom south unit including the Forest Hill Divide and Folsom-Malby features as part of the Central Valley project in California. Thank you.

RESOLUTION OF THE EL DORADO COUNTY CHAMBER OF COMMERCE

Whereas a great amount of water originating in El Dorado County is now wasted and flows to the Pacific Ocean; and

Whereas the construction of the Auburn Dam is important to the development of water resources in El Dorado County; and

Whereas the Malby unit which would pump water from Folsom Dam at an elevation of 500 feet for storage in the Deer Creek area in El Dorado County would

provide municipal and industrial water for the west end of El Dorado County; and

Whereas the extension of this water to western El Dorado County appears to be the only factor which would bring about the development of that area; and

Whereas although the major areas to derive benefit would be eastern Sacramento County, this development would benefit all of this section of the State and therefore what benefits one benefits all: Now, therefore, be it

Resolved, That the Directors of the El Dorado County Chamber of Commerce have unanimously gone on record urging authorization of the construction of Auburn Dam and the South Folsom Canal including the Malby area as units of the Central Valley project.

ROBERT O. WEST, *President*.

Attest:

WALTER G. DRYSDALE, *Secretary-Manager*.

MARCH 9, 1965.

[Telegram]

HANFORD, CALIF.

Senator THOMAS KUCHEL,
Senate Office Building,
Washington, D.C.:

Urge support in Interior Committee hearing on S. 599. Kings County Board of Supervisors believes this to be an important step in the development of additional water resources for interior California.

MEL BOYD, *Chairman*.

[Telegram]

LINDSAY, CALIF., *March 30, 1965.*

THOMAS H. KUCHEL,
Senate Office Building,
Washington, D.C.:

The board of directors of the Lindsay Chamber of Commerce adopted a resolution at their March meeting held on March 29 at which they urge you, our representative, to push such legislation that will hasten the authorization and construction of the Auburn Dam-south canal unit with provisions for enlargements for east side use. The Lindsay Chamber sees an urgent need for supplemental water to meet future requirements.

Sincerely,

PAUL SPRAETZ, *Manager*.

ONE DAY FROM DISASTER

"Intermittent rain today, tonight, and Saturday. Southerly winds increasing to 10 to 20 miles per hour tonight and Saturday with occasional gusts to 25 miles per hour. High both days near 48°, low tonight near 42°."

That was the official Weather Bureau forecast for the Sacramento area on Friday, December 18, 1964.

Nothing to get alarmed about. But, on the other hand, nothing that could be ignored by the operations staff in the Bureau of Reclamation's Central Valley project office in Sacramento.

During the rainy season, from November through March, the men in charge of the Bureau's flood control operations must assume that any new storm, no matter how minor it may appear to be in the beginning, is capable of building up and lasting long enough to bring floods, death, and destruction to northern California.

A routine review of the storage space in Bureau reservoirs and the rates of flow in streams below Bureau dams showed that Folsom Lake held 571,300 acre-feet of water, well below its capacity of 1,010,000 acre-feet.

Releases from Folsom Dam through Lake Natoma into the American River were averaging 925 cubic feet per second.

To the north, releases from Shasta Dam were slightly under 2,000 cubic feet per second and the Sacramento River was carrying 4,250 cubic feet per second past Red Bluff and 11,800 cubic feet per second through Sacramento.

Storage in Lake Shasta was exceptionally low—only 2,490,000 acre-feet out of a capacity of 4,500,000. Operators of lodges and marinas on the lake had been complaining because the lake was half a million acre-feet lower than on the same date in 1963.

But before the week was over the hundreds of thousands of Californians living in communities along the Sacramento River and south into the delta area would have reason to rejoice in the fact that ample storage space was available in Shasta Lake, Folsom Lake, and other Bureau of Reclamation reservoirs in northern California. In fact, at times they would fervently wish that more space were available, particularly when the American River threatened to burst out of control and flow wildly through the city of Sacramento.

On the night of December 18, the rains began, just as the Weather Bureau had predicted. But the character of the storm changed swiftly and the intermittent showers soon gave way to an almost steady downpour that lasted, with only one or two slight breaks, for 2 weeks.

Rainfall at Blue Canyon, upstream from Folsom Dam, was typical of the downpour that soaked the entire northern part of the State, from the Pacific coast to the Sierras.

During the 24-hour period ending at 8 a.m. December 19, 0.84 inch of rain was recorded in Blue Canyon. The December 20 report showed 3.47 inches; December 21, 3.05 inches.

By then, the inflow into Folsom Lake had begun to increase, from 1,920 cubic feet per second on December 19 to 10,720 cubic feet per second on December 21.

Folsom Lake still had storage space for more than 400,000 acre-feet of water on the morning of December 21, but the Central Valley Operations Office staff has had 20 years of experience in handling flood prevention problems and to them it was obvious that it was time to increase the releases from Folsom Dam into the American River channel.

The operation of a flood control dam—such as Folsom and Shasta Dams—during a flood emergency is based on many criteria. The basic ones are the amount of storage space left in the reservoir and the capacity of the channel below the dam to hold releases.

The job of the Central Valley Operations Office is to make sure that enough water is released into the channel—without damaging the channel—early enough so that the lake will have enough space in it to store all of the runoff that can reasonably be expected.

Then, after the storm subsides, part of the water must be released again as rapidly as possible to bring the lake down to a precomputed level so that it will be ready to handle the next storm.

On Monday, December 21, faced with a weather forecast of "rain through Tuesday, heavy at times," and rising inflows into the lake, the operations office decided to start increasing its releases into the American River.

The wisdom of that decision soon became evident as on that same day the full force of the storm was felt for the first time. Rainfall at Blue Canyon was 7.07 inches during the 24-hour period ending at 8 a.m. December 22, 3.80 inches on the following day, and 4.29 inches the next day—20 inches of water in 3 days, more than 2 feet of water in 5 days.

Inflow into Folsom Lake increased tremendously. During the 24 hours ending at 8 a.m. December 22, it averaged 32,400 cubic feet per second, the following day, 101,980 cubic feet per second. At midmorning on December 23 it peaked at 220,000 cubic feet per second—and then started to drop off.

The operations staff heaved a collective sigh of relief. Releases into the American River were then being made at the rate of 115,000 cubic feet per second, the maximum designed capacity of the levees downstream, and the lake was filling at the rate of 100,000 acre-feet every 12 hours. At that time there was slightly more than 100,000 acre-feet of storage space left.

For the next few hours the situation looked good. The inflow dropped to about 150,000 cubic feet per second, only slightly higher than the amount of the releases. And the forecast was fairly favorable, calling for only "intermittent light rain through Thursday." Some of the men in the operations office even began to think seriously of taking some time off Christmas Eve after working an around-the-clock operation for 3 days.

Then, shortly after noon, the picture changed abruptly. The rate of inflow leveled off, began climbing, then shot up to an all-time high reading of 280,000 cubic feet per second.

The operations staff knew the probable cause of this tremendous surge of water. Hell Hole Dam, under construction on the Rubicon River by a non-

Federal agency, had been washed out by the flood that morning, and it seemed reasonable to assume that the rapid increase in flow into the lake was caused by the sudden rush into the American River of the 30,000 acre-feet of water that had been stored behind Hell Hole Dam.

But the possibility existed that much of the increased inflow might be due to delayed runoffs from the Blue Canyon area, where 8.8 inches of rain had fallen during the previous day, or from other unreported storm centers.

If it were Hell Hole water, a rapid dropoff in flow, corresponding to the rapid increase, could be expected. If not, and if the flows continued at the increased rate, Folsom Lake would be full and spilling water within 12 hours.

The only way to find out was to wait. The 6 p.m. readings showed a sharp decline in inflow. By 8 p.m. the rate of inflow had dropped below the rate of the releases for the first time in 6 days.

Once again, for the third time in 9 years, Folsom Dam and the men who operate it had saved much of the Sacramento area from devastation.

But if the storm had continued for 1 more day, and the runoff had persisted at its maximum rate, Folsom Dam would not have been able to contain the waters of the American River. The excess flow would have poured down into the American River channel until the runoff subsided and the level of the lake dropped below the maximum storage level.

On December 24, the inflow caused by showers during the previous night climbed over the rate of the releases briefly, then dropped off well below the margin of safety. By the afternoon of Christmas Day, releases from Folsom Dam could be reduced and before New Year's Day enough space had been cleared in Folsom Lake to handle runoff from any new storm as severe as the one which had just passed.

According to the U.S. Army Corps of Engineers, operation of Folsom Dam during this storm period prevented \$45 million in damages in the Sacramento area.

Similar savings in dollars, suffering and life were attributed to other Bureau of Reclamation-operated dams throughout northern California during this Christmas-week storm.

From December 18 to December 27, storage in Shasta Dam on the Sacramento River increased by more than 800,000 acre-feet. During the height of the storm, on December 22, nearly 200,000 cubic feet of water per second was pouring into Shasta Lake. On the same day, low areas in the city of Red Bluff, some 30 miles downstream from Shasta Lake, were being flooded by a stream flow of 170,000 cubic feet per second in the Sacramento.

If the 200,000 cubic feet per second being held back by Shasta had been added to that flow, Red Bluff and most of the cities and towns along the Sacramento would have been severely damaged. But because there was so much storage space available in Shasta Dam when the storms struck, releases could be held to a minimum during the height of the danger period.

The Corps of Engineers estimated that operation of Shasta Dam during this storm prevented \$40 million in damages.

Other significant contributions to the safety of Sacramento Valley residents were made by Bureau of Reclamation, Corps of Engineers, and State of California dams on the Trinity and Feather Rivers and on Stony Creek and Putah Creek.

The Bureau's Lake Berryessa on Putah Creek gained 250,000 acre-feet in storage and during the height of the storm prevented 68,000 cubic feet of water per second from overflowing the leveed channel below it and sweeping down into the delta.

East Park and Stony Gorge, two Bureau reservoirs on Stony Creek, held back a flow of 45,000 cubic feet of water per second at a time when another 45,000 cubic feet per second was pouring into the Corps of Engineers Black Butte Reservoir downstream. At the time, storage in the Black Butte Reservoir was well into the flood protection zone. The combined operation of the three dams prevented serious flooding in the local area and decreased the runoff into the Sacramento River.

On the Feather River, the State's partially completed Oroville Dam held back sufficient water to ease a dangerous situation at Yuba City where for a time heavy flows threatened to duplicate the 1955 floods which devastated the area.

Even with the protection offered by Shasta Dam and the help of Oroville Dam, flows in the Sacramento River below its junction with the American near Sacramento reached approximately 433,000 cubic feet per second on Christmas Day.

Fortunately, the system of dams, levees and bypasses designed and built to

protect the Sacramento Valley was able to handle these tremendous flows and keep damage to a minimum.

In the northern part of the State—along the Eel, Klamath, and lower Trinity Rivers—no such protection is yet available and the storms of similar magnitude which struck the north coast areas brought death and destruction with them.

But even there, the Bureau's Trinity Dam on the upper Trinity River kept the floods from being even more disastrous by holding back 85,000 cubic feet per second which otherwise would have flowed down the Trinity River toward the Klamath. Clair Engle Lake behind Trinity Dam gained 400,000 acre-feet in water storage during the storms.

The contrast between the tremendous damages inflicted upon the north coast region and the relatively small amount of damages sustained in the Sacramento Valley from the same storm system is eloquent testimony to the need for a series of multipurpose storage dams on California's northernmost streams.

The extent of damages in the north coast region is being reckoned in the hundreds of millions of dollars. In addition, many lives were lost.

The Bureau of Reclamation and other agencies have been studying the possibility of building multipurpose dams and related flood control levees and channels on the Eel, Klamath, Trinity and other northern rivers for many years.

One of the factors involved is the cost of the dams involved. Admittedly, they would be high. But there are two answers to this problem.

First, the cost of repairing the damages caused by the floods will be extremely high. Much of it will be borne by the Federal and State Governments since the north coast has been designated a disaster area. In addition, millions of dollars in property and income taxes will be lost, and the State must provide additional funds for welfare and unemployment benefits to those who have lost their homes and their jobs.

How much better would it have been for all concerned if these millions and millions of dollars could have been allocated instead to the construction of multipurpose dams.

Second, there is a tremendous need for exporting water from these northern streams to the central and southern parts of California for irrigation, municipal and industrial use.

Literally millions of acre-feet of water ran wild in the north coast area during the Christmas week storms, all of it going to waste in the ocean after it had completed its path of destruction.

That water could have been put to beneficial use in the many water-deficient areas of the State if dams had been built to hold it and a distribution system had been available to carry it to the south.

Those potential water users in the south and the flooded out residents of the north coast could each get what they so desperately need—protection against flood and drought—at a much more reasonable cost if a comprehensive program of water development in the north coast area could be formulated and carried out.

The Christmas week floods point up the tremendous opportunity for joint development by the Bureau of Reclamation and the California Department of Water Resources of these north coast streams, developments which could meet all of the needs for water control at substantially less cost than if each need were met separately by separate agencies.

Despite the great success of the present system of dams, reservoirs, levees, and bypass channels in protecting the Sacramento Valley during the recent storms, several chinks in the wall of protection were apparent.

First, Folsom Dam came uncomfortably close to spilling an uncontrolled amount of water into the American River channel. An uncontrolled spill could easily have overflowed and destroyed the levees through Sacramento, causing a major metropolitan flood disaster.

Right now Congress has before it a proposal to build another dam—Auburn Dam—on the American River above Folsom Dam.

Had Auburn Dam been built and in operation during Christmas week, its flood control facilities would have greatly eased the strain on Folsom Dam—and on the worried men who controlled the releases from Folsom Dam.

In addition, it is probable that Auburn Dam, operated in conjunction with Folsom Dam, would have made it possible for the Bureau to have stored for later beneficial use 400,000 acre-feet of the 1.5 million acre-feet of water which passed through Folsom Lake during and immediately after the storm.

Its construction, justified by many benefits in addition to flood control, is vital to the long-range protection of Sacramento against future floods.

Second, Yuba City once again came within a few feet of another devastating flood. This pointed up the need for immediate construction of Marysville Dam on the Yuba River because of its potential flood control benefits. The Bureau of Reclamation has already recommended to a special House of Representatives subcommittee that Marysville Dam be built by the Corps of Engineers as soon as possible and, because of its tremendous water conservation and power generation opportunities, that it be physically and financially integrated into the Central Valley project and operated by the Bureau of Reclamation, as is the case with Folsom Dam.

And, finally, there are still many uncontrolled streams feeding into the Sacramento River which contribute their share of flood damages.

An interesting contrast is provided by Stony Creek and Thomas Creek, which run into the Sacramento River a few miles apart, south of Red Bluff.

Watersheds of both of these creeks received approximately the same amount of rainfall during the recent storms. Thomas Creek ran wild, ripping out a 500-foot section of the Bureau's Corning Canal and destroying homes and farms. But Stony Creek, protected by East Park, Stony Gorge, and Black Butte Dams, was held in check.

The storm that struck northern California during Christmas week, 1964, brought death and destruction to the unprotected north coast of California.

The same storm, dropping practically the same amount of water on the Central Valley watersheds, caused only temporary inconvenience to most residents of the parts of the State protected by Bureau of Reclamation dams—and it provided sorely needed water to raise the water storage level in Shasta Lake, Clair Engle Lake, Lake Berryessa, East Park and Stony Gorge Reservoirs.

During the months to come, the million and one-half acre-feet of water captured by those reservoirs during the storm will be used for boating, fishing, and swimming, to irrigate crops from Bakersfield to Redding, to generate power, to help maintain fish and wildlife, for drinking and watering home lawns, to help provide jobs in industry, and to improve navigation on streams that might otherwise run dry.

The next severe storm that strikes northern California can bring with it death and destruction. Or it can bring with it the many benefits made possible by the construction of multiple-purpose dams.

The choice is ours. It will be made known by what we, the people, do—or do not do—between now and the time the next storm strikes.

Senator ANDERSON. If we have finished with the witnesses, that concludes the testimony on the bill.

(Whereupon, at 11:05 a.m., the committee adjourned.)



The first part of the report deals with the general conditions of the country during the year 1902. It is a very interesting and valuable contribution to the knowledge of the country and its people. The report is written in a clear and concise style, and is well illustrated with maps and diagrams.

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