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REPORTS

LT. GOVERNOR GLENN M. ANDERSON
President of the Senate

HON. HUGH M. BURNS
President pro Tempore

J. A. BEEK
Secretary of the Senate

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Partial Report of the

SENATE FACT FINDING COMMITTEE ON WATER

March 1960

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CONTRACTS, COST ALLOCATIONS, FINANCING FOR STATE WATER DEVELOPMENT

Published by the
SENATE
OF THE STATE OF CALIFORNIA

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LETTER OF TRANSMITTAL

SENATE CHAMBER, STATE CAPITOL
SACRAMENTO, CALIFORNIA, March 8, 1960

HON. GLENN M. ANDERSON
President of the Senate, and
Gentlemen of the Senate
Senate Chamber, Sacramento

Mr. President and Gentlemen of the Senate:

The Senate Fact Finding Committee on Water Resources, as authorized by Senate Resolution No. 135, and amended by Senate Resolution No. 163 of the 1959 Regular Session, submits herewith a partial report on its interim activities.

Respectfully submitted,

STEPHEN P. TEALE, *Chairman*
CARL L. CHRISTENSEN
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INTRODUCTION

Numerous studies have been made in the past of California's water resources and of their sufficiency to meet foreseeable demands for beneficial uses. Almost without exception, they have resulted in findings that the quantity of water which can be made available is sufficient to meet these projected needs. This committee has not attempted an independent study on this point but from a review of past investigations and from incidental testimony from witnesses on the point accepts these findings. Specifically, the committee assumes that a sufficient quantity of water can be made available for diversion and export from the sources proposed by the works described as the "State Water Resources Development System" including the state water facilities in Chapter 1762 of the 1959 Regular Session of the Legislature.

The committee is aware that there are differences of opinion among technical experts on details of the engineering and financial feasibility of both the "facilities" and of the broader State Water Resources Development System. It assumes, however, that the diversion and export plan is functionally sound and that the units can be built and operated substantially as proposed in reports of the Department of Water Resources.

More precise details and information are needed on the use to which water is to be put in the service area of the facilities and of the marketability of water when offered for the projected uses. More study also is necessary on problems of water quality and quality control. Reasonably detailed plans still are to be completed for some major aqueduct units, such as the South Bay Aqeuduct, and for works proposed to be built in the Delta. These studies and plans should be completed before contracts are made for major construction of units of the proposed aqueduct system.

Two areas remain where continuing controversies may occur in the planning and construction of the facilities and other units of the State Water Resources System. The federal government, the state government, and local agencies established under state law are in conflict in a number of areas in seeking to establish rights to water they propose to conserve and use. The resolution of these conflicts conceivably could affect the functioning of the facilities and system. The State of California would enter a new field of activity with construction of the State Water System which will bring it into competition with other agencies of government already active in the development and distribution of water supplies.

Still to be determined also is the effect on the State's borrowing capacity which may result from the sale of the bond issue proposed in Chapter 1762. It is essential that the strongest guarantees be given that principal and interest will be paid on time and in full on the bonds proposed to be sold for water development. It is emphasized that the State Water Resources Development System is designed to be self-supporting. Use of General Fund money to meet debt service, which would occur automatically under the chapter if other fund sources are insufficient, would amount to a breach of faith with the general taxpayer. Use of General Fund money must be avoided by sound project planning and equitable division of costs among project beneficiaries under carefully drafted contracts.

Thus, the committee selected as a subject of intensive study the possible necessity of legislation to supplement Chapter 1762 in the field of contract terms. Section 12937 of the Water Code, proposed by the chapter, states in part:

> "The department, subject to such terms and conditions as may be prescribed by the Legislature, shall enter into contracts for the sale, delivery or use of water or power, or for other services and facilities, made available by the State Water Resources Development System with public or private corporations, entities, or individuals."

The committee concluded that "terms and conditions" of contracts embraced a wide area of possible state policy in the field of financing, construction and operation of the proposed State Water Resources Development System.

Such questions are involved as methods of allocating costs among purposes of the proposed system; methods of determining repayment of costs by beneficiaries of the system; and requirements for general contract provisions including term, renewability, security for payment, possible limitation on benefit received, etc. Conclusions on these points follow.

CONCLUSIONS AND RECOMMENDATIONS

1. Some allocation is necessary of the costs of multiple-purpose works of the State Water Resources Development System to the separate purposes of the facilities—such as flood control, water supply, power production, etc.—if contract terms with beneficiaries are to be set so as to pay the approximate cost of rendering the vendible services of the facilities.

With use of any standard cost allocation method, the revenues attributable to power produced at storage works above the Sacramento-San Joaquin Delta—when the power is valued at market rates—would be in excess of the amounts necessary to meet debt service on the allocated costs of the power facilities and the amounts necessary for operation, maintenance and replacement for the power facilities. The commitee points out that overall power use for pumping in the state system ultimately would be about twice the amount of power produced in system plants. It also emphasizes that the most economical use of Feather River power plants would be for peaking purposes, while offpeak power is most economical for pumping.

RECOMMENDATION

Power produced from plants in the system above the Delta should be valued—for system use or for sale or exchange—at its worth in the market, and net revenues from such power should be applied so as to reduce the price assigned to water in and above the Delta.

Power produced from offstream storage below the Delta or in connection with operation of the California aqueduct system should be used or marketed so as to reduce the cost of transporting water to users beyond Wheeler Ridge.

2. Future rises in construction costs almost surely will increase the total expenditures from bond funds on the State Water Facilities from $1,618,000,000 as estimated by the department on the basis of prices prevailing in the spring of 1959. (Heavy construction costs have increased on an average of about 5 percent annually during the last decade.) Some financing for the State Water Facilities in addition to bond funds would be available because money from the California Water Fund still could be used after possible exhaustion of the $1,620,000,000 proposed to be expended from bond funds. (See Legislative Counsel opinion dated December 23, 1959.) It is pointed out that $130,000,000 of the proposed bond issue is to be used solely for grants and loans to local projects.

Repayment of Costs

1. Under present law, the department is required to fix rates for services from the facilities sufficient only to meet interest and principal on such bonds as may have been issued for construction of the facilities. (See Appendix IV, Legislative Counsel opinion dated October 2, 1959.) However, Chapter 1762 provides that expenditures for the state water facilities be taken from the California Water Fund so far as money is available in that fund, before expenditures are made from bond proceeds.

RECOMMENDATION

Legislation should require that rates for services from the facilities be set so as to return with interest the reimbursable expenditures on the facilities, whether made from bond funds or the California Water Fund. The interest rate computed for water fund expenditures should be as nearly as possible the rate paid on money obtained from bond sales.

2. From testimony received by the committee, it appears that water at times may be available from the state water facilities in amounts beyond the demand for it at prices set to return allocated costs of delivering such water. In drafting contracts, provisions should be made for disposal of so-called "Class II" water available in wet years and of other interim water surpluses.

3. The committee endorses a "Delta pool" concept in the establishment of rate structures for delivery of water from the system. Under the concept, continuing "collection" charges should be made for capital costs and operation and maintenance of works necessary to bring water into the Delta and to make it available for export from the Delta. For users of "exported" water, a delivery charge should be made to return capital and operation and maintenance costs of necessary pumping plants and aqueducts. As capital costs of the delivery system are amortized, the delivery charge should be reduced appropriately.

RECOMMENDATION

Legislation is recommended to require that rates set for delivery of water from the system include as separate charges to user agencies the costs of making water available in the Delta and of delivering it beyond the Delta. The delivery rate should be reduced as costs of constructing delivery structures are amortized.

4. The state water facilities were intended, under terms of Chapter 1762, to be the first unit of a more comprehensive water conservation and distribution system of the California water system. Future water demands, or reductions in yields from completed reservoirs resulting from operation of watershed protection and county of origin statutes, will make necessary the construction of additional storage units to augment water supplies in the Delta. These additional

works almost surely will be more expensive—in terms of dollars per acre-foot made available—than works comprising the state water facilities. The committee concludes that a proper share of these additional costs, as construction of the system progresses, should be paid by contractors for water deliveries from the aqueduct system.

RECOMMENDATION

Legislation is recommended requiring the contracts for water deliveries from the State Water Facilities contain provision for price increases to cover a proper proportion of costs of future works to deliver water to the Delta.

Further, legislation is recommended providing that water contracts entered into by the Department of Water Resources shall not confer a right to water from any particular conservation works or from any particular, original water source.

5. The Department of Water Resources proposes to prorate capital costs of the aqueduct system on a proportionate use method within aqueduct reaches. This appears to be suitable if the term aqueduct reaches is properly defined. It would appear that an aqueduct reach should end at the point where it is necessary to pump water to a higher level for further conveyance through the general aqueduct system. In this concept, no price differential would appear to be appropriate between water destined for agricultural use and that destined for domestic or industrial use.

RECOMMENDATION

The committee recommends that capital costs of aqueduct systems be recovered from contractors for water on a basis of proportionate use of facilities necessary to accomplish delivery, calculated within aqueduct reaches. The purpose for which water is to be used should not be a factor in calculating repayment obligations of the agencies contracting for delivery.

6. The committee concludes that contract terms should provide for recovery of capital costs of the facilities within 50 years while having provision for adjustment for changes in "collection" costs and final determination of "delivery" costs. Security for payments would be strengthened if deliveries were made only to public agencies which do not have the limited liability that corporations or individuals do. Also, contracts with public agencies should require them to levy taxes to insure payment of capital costs in event water tolls or other charges made by them are insufficient. If delivery contracts are written with corporations or individuals, it would appear security for payment could only be obtained by the posting of bond.

RECOMMENDATION

Legislation is recommended requiring that water delivery contracts be made only with public agencies with taxing powers.

Reimbursement of Costs

1. The committee finds that no clear policy has been laid down by the Legislature for assignment of costs of preserving and enhancing fish and wildlife resources or for facilities for public recreation in connection with the State Water Development System. Legislative intent that expenditures for these purposes should be nonreimbursable from system revenues can be inferred from Section 233 of the Water Code enacted at the last session. The section, however, calls for designation of such costs as nonreimbursable only in project reports of the Department of Water Resources. Apparently envisioned was a unit-by-unit authorization of the system in contrast with the blanket authorization as would be accomplished by Chapter 1762.

RECOMMENDATION

Legislation is recommended to require that the costs of measures and facilities to prevent or mitigate damage to fish and wildlife resulting from construction of the system be made a charge against vendible services of the project.

Legislation is recommended to require the financing of construction and operation of facilities for the enhancement of fish and wildlife resources and for public recreational activities in connection with the State Water Resources Development System. These facilities and expenses should include but not be limited to maintenance of minimum reservoir levels, the acquisition of land and access roads.

Revenue should be obtained from recreational facilities through user charges, leases, etc., at rates comparable with those for similar recreational developments in the areas involved. Such revenue should be devoted first, to costs of operating and maintaining the state recreational facilities, and second, to financing costs of constructing further recreational facilities in connection with the state's system.

2. Full development of the recreational potential of reservoirs and other suitable facilities of the system is essential to realization of all statewide benefits of the program, and intensive study and careful planning will be necessary to realize this potential. Also, the committee notes that unreasonable restrictions on body contact sports in some reservoirs where no public health problem is involved have hampered recreational uses of those reservoirs.

RECOMMENDATION

Legislation is recommended to make it mandatory that the Department of Water Resources submit to the Legislature reports on recreational development planned in connection with the system, and that these reports shall include comments and recommendations as appropriate from the Department of Fish and Game and Natural Resources.

Legislation is recommended requiring that reservoirs of the state's system be open to body contact sport

in every case where it is compatible with public health requirements.

3. The committee heard extensive discussion of the possibility that in some cases, the local subdivision of government within which a reservoir of the California Water Development System would be located, may suffer a net loss in tax revenues and community values as a result of construction of the reservoir. Tax losses for agricultural lands inundated by the reservoir, and increases in police, fire and other services required to be furnished during the construction period would be significant factors. The principle of reimbursement of local governments where "impact" of activity by another unit of government causes increased costs has been recognized by the federal government particularly.

RECOMMENDATION

The committee recommends an independent study of the impact of construction upon local communities in areas where facilities of the State Water Resources Development System are to be constructed, including net benefits or losses to the local governments involved.

Value Enhancement

The committee finds that the availability of water to arid land otherwise suitable for agricultural or residential use can and usually does increase the value of the land. Value increases which may differ in magnitude but not in kind result from many other governmental activities. Government, in fact, exists to provide benefits for its citizens.

The committee finds that an acreage limitation on water deliveries such as contianed in federal reclamation law neither prevents nor recaptures increased land values, although a limitation would divide the value increase among a larger number of persons.

No recommendation for legislation is made on this subject. However, if recovery of land value increases, in whole or in part, is sought, a surcharge on water deliveries to large landholdings appears to be the most effective method administratively in the case of agricultural lands. A special tax on capital gains from the sale of lands made suitable for subdivision by the availability of water from the state system appears to be possible in those circumstances.

COST ALLOCATIONS

In any project or undertaking having several functions and purposes, it is necessary to allocate costs among the various functions in order to arrive at equitable prices to those who receive benefits from the project. This is particularly true with multiple-purpose water projects. A reservoir may have a half-dozen different functions or more. Typical ones are storage or release of water for domestic use, for agriculture, or industrial use, for the production of power, to improve navigation, to provide flood control, to enhance fish and wildlife resources and to enhance recreational opportunities. An aqueduct system may have several functions in conveying water for domestic, industrial and agricultural uses, as well as for fish and wildlife or recreational enhancement. Power production may be involved.

For the State Water Facilities, the Department of Water Resources has cited purposes of irrigation, municipal and industrial water, power, flood control and recreation. In its studies, the Department has used a method of allocating costs of water conservation works known as the separable costs-remaining benefits method. This method also is used by the Federal Bureau of Reclamation and the Army Corps of Engineers. A department representative stated to the committee that problems of co-ordination of state operations with the federal agencies would be lessened if a common method were used.

An excerpt from testimony of William R. Gianelli, then Principal Hydraulic Engineer, Department of Water Resources, follows:

> "As you are aware, the subject of cost allocations and the details of making such allocations are complex technical matters. Generally speaking, there is no uniform agreement that any one method of cost allocation is superior in all respects and for all purposes. In addition, depending upon the type of cost allocation used, the results will vary over a considerable range. Based upon a comprehensive study of the various types of cost allocation and upon consultation with federal and other agencies, the Department of Water Resources has adopted the following general principles regarding allocation of project costs:
>
> "A. **Allocation of Costs for Water Production Facilities.** Costs, including all aspects thereof, will be allocated between the functions in accordance with the separable costs-remaining benefits method. Included in the functions receiving portions of the allocated costs will be irrigation, municipal and industrial water, power, flood control, recreation, and others if justified. This method is now recommended for use by the federal agencies with which we must co-ordinate our activities and will thus constitute a basis for some uniformity. Furthermore, this method, while complex, is believed to be the most generally acceptable of all methods thus far involved."

Separable costs-remaining benefits is only one of a number of methods used in allocating costs to project beneficiaries. A discussion of differing methods is contained in Appendix I to this report.

In general, these methods result in assigning the larger share of the joint costs of a reservoir to the most profitable function. This function usually is power in western multiple-purpose systems.

Alternate Proposals

The committee heard proposals that no separate costs assignments be made to the various functions of the State Water Facilities. Rather it was proposed that only a total cost be calculated for the facilities as a means of determining the total revenues to be sought. Another proposal, to approach the problem from the other side, was made by one witness. Involved would be calculation of what could be obtained from sales of commodities or service from the facilities when sold at "full market value." The cost of providing these services and commodities then would be calculated to determine if cost was equal to or less than revenue. The method could result in a net profit from construction and operation of the system. The witness, Dwight Cochran, President of Kern County Land Company, defined market value for this method in the following statement:

> "The market value—when a man is willing and can afford to pay, should be determined by careful analysis of the worth of water to buyers in each service area throughout the project. Among elements to be considered in determining what water is worth are:
>
> (a) The cost of producing an alternative water supply from some one source, such as pumping from the underground.
>
> (b) The incremental price a customer would be willing to pay for establishing and maintaining the permanent water supply.
>
> (c) The price he would be willing to pay for enhancement in the value of land for agricultural or subdivision purposes resulting from a new water supply."

Necessity for Allocation

However, for several reasons it would appear that some method of allocating costs among project func-

tions is necessary. A multiple-purpose project may confer general benefits of areawide or statewide nature, and it may be difficult or impossible to assign or collect costs for them from identifiable individuals. In federal practice, flood control, navigation, preservation or enhancement of fish and wildlife resources and provision for recreational facilities have been put in this category, and no effort is made to recover their cost as part of project revenues.

Some costs would have to be assigned to power production where it appears that net revenues will be available from power sales so that these net revenues can be assigned to some other repayment purpose, such as reducing the price of water. An alternative policy decision might be to grant some type of power user a price preference.

Tables appear at the end of this part which show costs of various works comprising the State Water Facilities as estimated by the Department of Water Resources on the basis of construction costs prevailing in the spring of 1959. A breakdown showing the costs assigned to various purposes of Oroville Dam resulting from application of the separable costs-remaining benefits method also is shown, as well as the computation which resulted in this assignment of costs.

As pointed out earlier, the separable costs-remaining benefits method tends to assign to the most profitable function of a multiple-purpose project an added share of the joint costs of the project. Still, with $292,000,000 allocated to capital costs of power facilities at Oroville, revenues from the power produced would amount to some $8,000,000 annually more than needed to amortize these capital costs and for maintenance, operation and replacement.

Power Revenues Estimated

The figures submitted by the department show annual power costs of about $14,000,000 compared with $22,000,000 in estimated annual revenue from the Oroville power if the power sold at market value. It is noted that present state law contemplates sale of power at market rates although preference is given to public agencies in the case of "equal or equivalent offers." (Section 11626 of the Water Code.)

A policy decision is necessary as to whether net power revenues would be used to reduce the price of the power to those who consume it, or to reduce the price of water made available by the facilities, or whether they would be used in some other manner.

The valid point has been made that the facilities would use about twice as much power as they would produce. Thus the effect of applying net power revenues to reduce water prices would be obtained by assigning the power to pumping use at actual cost. Apparently the most economical way to do this would be to exchange the power at the point produced for power delivered at pumping sites. This would take advantage of the higher market worth of the "peaking" power that would be available from the Oroville plants. Cheaper—offpeak power—largely would be used for pumping.

It is noted that a statement of principles issued by the Department of Water Resources on January 21, 1960 (Appendix I), proposes the use of Oroville power in this manner with the exception that the net power revenue advantage in water pricing would be granted only to single land ownerships of 160 acres or less.

Some power generation would be possible in the aqueduct system itself, at so-called power recovery plants. This generation would only occur as a result of water being pumped to a higher level in order to accomplish delivery. It would be only fair that the water users who have to pay the pumping cost involved should get the benefit of the value of power that results from this pumping.

Aqueduct Cost Recovery

For recovery of the capital costs of the proposed California aqueduct system the department would use a proportionate use method of cost allocation. The last information given the committee was that proportionate use might be measured either by discharge capacity of aqueduct turnouts or by annual use of water by contracting agencies. A distance factor would be included in pricing formulas by making separate calculations of proportionate use for each "aqueduct reach." More distant aqueduct reaches would bear a proportion of the cost of the main aqueduct from the Delta. The department gave no precise definition of an aqueduct reach. For pricing purposes, it would appear that an aqueduct reach certainly should not extend beyond a major pumping plant or a reservoir.

Discharge capacities appear to be the most equitable method in determining cost of service for agricultural use where the bulk of the water is delivered during a few months of the year. For municipal and industrial water, where demand is more constant, annual use may be a more accurate measurement of cost of service.

Shift in Water Use

Testimony before the committee pointed up the obvious fact that there will be a continuing shift in the use of water delivered from the state system from agricultural to municipal and industrial supplies, particularly in Southern California. Witnesses gave these estimates of present and future water users in their areas:

San Bernardino Valley—presently 60 percent agriculture, declining to 40 percent in 1989 and to nothing by 2020.

Mojave area—90 percent presently agriculture, declining to 16 percent in 1979 to 4.3 percent in 1999.

Orange County—67 percent for agriculture in 1957, declining to 16 percent in 1979 to 4.3 percent in 1999.

For the Metropolitan Water District's service area, Bulletin 78 of the State Department of Water Resources gives estimates of agricultural use in acre-feet but does not give total use for the area so that percentages can be derived. Agricultural use for the service area is estimated at 416,500 acre-feet in 1960, at 276,900 in 1980 and 184,100 in 2020.

A table showing allocation of capital costs of the aqueduct system by the proportionate use method is included in the following material. The department's statement of contract principles is included in the appendix to this report.

ESTIMATED COST OF STATE WATER FACILITIES FUNDED UNDER PROVISIONS OF S.B. 1106

Based on prices prevailing in Spring of 1959. Values do not include interest during construction.

Oroville features		$390,000,000 *
Five Upper Feather River projects		6,000,000
North Bay Aqueduct		28,000,000
South Bay Aqueduct		35,000,000
San Luis Reservoir		190,000,000 *
Pacheco Pass Tunnel		15,000,000
San Joaquin Valley-Southern California Aqueduct System		
Delta to San Luis Reservoir		118,000,000
San Luis Reservoir to Avenal Gap		56,000,000 *
Avenal Gap to Buena Vista Lake		53,000,000
Buena Vista Lake through Tehachapi Mountains		240,000,000
Tehachapi Mountains to Balboa Reservoir		225,000,000
Tehachapi Mountains to Perris Reservoir		303,000,000
Coastal Aqueduct		81,000,000
Delta Unit		53,000,000 *
San Joaquin Valley drainage system (initial phase)		24,000,000
Local projects		130,000,000
Total		$1,947,000,000
Less:		
Funds expended 1957-59	$27,000,000	
Transfer from Investment Fund	172,000,000	
		199,000,000
Estimated bonding requirement		$1,748,000,000

* Does not include federal contributions.

ALLOCATIONS OF PROJECT COST

Oroville Dam and Reservoir

Method: Separable costs—remaining benefits

Date of allocation: July 1959

(Costs include interest during construction)

Allocation to flood control	$70,000,000 *
Allocation to municipal and industrial use	74,590,000
Allocation to irrigation	79,445,000
Allocation to power	292,942,000
Total	$516,977,000

* Tentative estimate only—exact amount has not been approved finally by concerned federal agencies.

COST ALLOCATION, OROVILLE DAM AND RESERVOIR WITHOUT THERMALITO-OROVILLE PUMPED STORAGE BY SEPARABLE COSTS-REMAINING BENEFITS METHOD (in thousands)

Item	*F. C.*	*M. & I.*	*Irrig.*	*Power*	*Total*
1. Annual benefits	*	$28,000	$5,211	$22,437	$55,648
2. Alternative annual cost	*	4,950	5,750	22,437	33,137
3. Justifiable annual expenditure	*	4,950	5,211	22,437	32,598
4. Separable annual costs	*	---	---	16,753	16,753
5. Remaining benefits	*	4,950	5,211	5,684	15,845
6. Allocated joint costs	*	3,311	3,525	3,846	10,682
7. Total allocation, annual economic costs	*	3,311	3,525	20,599	27,435
8. Taxes foregone	*	---	---	4,057	4,057
9. Total allocation, annual project costs	*	3,311	3,525	16,542	23,378
10. Allocated annual operation, maintenance and replacement costs	*	131	138	4,053	4,322
11. Allocated annual capital recovery costs	*	3,180	3,387	12,489	19,056
12. Allocated capital investment	$70,000	74,590	79,445	292,942	516,977

* A final decision as to the exact cost allocation at Oroville Dam and Reservoir awaits completion of studies by the Corps of Engineers which will establish the Federal flood control contribution. There is assurance that this contribution will be at least $70,000,000. Once fixed by the Corps, it then will be treated as a preallocated amount in a manner similar to that shown above with the remaining costs being allocated to the other functions.

ALLOCATIONS OF PROJECT COST

SAN JOAQUIN VALLEY—SOUTHERN CALIFORNIA AQUEDUCT SYSTEM

Method: Proportionate Use of Facilities by Maximum Discharge Capacities by Aqueduct Reaches.

Date of Allocation: July, 1959.

Aqueduct reaches	*Allocation to agricultural use*	*Allocation to municipal and industrial use*	*Total*
Delta to Discharge of P.P. I	$14,956,000	$23,304,000	$38,260,000
P.P. I to San Luis Forebay	31,879,000	47,382,000	79,261,000
San Luis Forebay to Avenal Gap	148,492,000	97,030,000	245,522,000
Avenal Gap to P.P. III	20,680,000	32,340,000	53,020,000
P.P. III to P.P. IV-V	5,850,000	32,740,000	38,590,000
P.P. IV-V to P.P. VI	1,830,000	40,430,000	42,260,000
P.P. VI to South Portal Tehachapi Tunnel	11,830,000	147,110,000	158,940,000
South Portal Tehachapi Tunnel to Balboa Reservoir	15,770,000	209,560,000	225,330,000
South Portal Tehachapi Tunnel to P.P. VII	8,340,000	100,590,000	108,930,000
P.P. VII to Perris Reservoir	15,650,000	178,250,000	193,900,000
Avenal Gap to P.P. Coastal IV	13,701,000	2,492,000	16,193,000
P.P. Coastal IV to P.P. Coastal V	4,073,000	1,813,000	5,891,000
P.P. Coastal V to Santa Maria River	15,074,000	43,876,000	58,950,000
Total	$308,130,000	$956,917,000	$1,265,047,000

Alternate methods of setting an actual price on water delivered from a multiple-purpose public system still remain after gross allocations of capital costs are made to purposes or functions.

In the testimony given to the committee, it was emphasized and re-emphasized that any pricing system should take into account two factors:

1. The ability of users to pay.
2. The return of costs properly attributable to the services rendered.

A point should be made that ability to pay is not necessarily an amount somewhat less than the highest unit price the user is paying for water he presently is acquiring. There may be over-riding considerations which would induce him to pay a higher price. One would be imminent exhaustion of an available underground supply. Another would be the opportunity to shift to a crop giving higher returns when additional water is available.

It was testified by the officials of the Department of Water Resources that some potential users may *not* be able to pay a price representing a fair share of costs of production and distribution.

In some section of the State to which service will be available, particularly sections not now irrigated, land owners will need financial ability to construct distribution systems as well as to pay charges for water from the state facilities.

A relatively new approach to ability to pay was described in testimony by Bureau of Reclamation officials—one that takes the time factor into account.

Involved is a variable rate contract which is keyed to formulas attempting to measure irrigators' income and outgo for necessities other than water service. It should be pointed out that this might involve some complicated bookkeeping if carried to the point of measuring returns and expenses which result from differing crops in differing areas. Also, it was emphasized that over the long haul the same amount of revenue must be provided.

There was discussion of contracts with escalator clauses which allow, for instance, the reflection in increased revenues of increased construction costs or of increased ability to pay. An alternative is the writing of short-term contracts, shorter compared with the bureau's 40- to 50-year contracts.

Price Differentials

The department in the past has considered separate cost allocations, and therefore pricing, for irrigation water and for municipal and industrial water. This consideration apparently resulted from an estimate of greater ability to pay by municipal and industrial users. However, in its January 21 statement of "principles" the department proposed to make no differentiation based on ultimate use in water rates to contracting agencies.

This proposed single price for water for all uses in effect leaves up to the contracting agencies the question of whether a price advantage should be allowed for agricultural water. The committee heard testimony representing viewpoints in major service areas of the facilities. The concensus was that "master" contracts should be sought in most aqueduct "reaches" and that agricultural water probably would be priced locally below municipal and industrial water to the ultimate consumers. County water agencies in the service area of the South Bay Aqueduct, the first of the aqueduct reaches scheduled for completion, have proceeded on this basis, at least in preliminary discussions. A draft of points to be covered by a "master contract" for South Bay Aqueduct deliveries is reproduced as Appendix V. The draft would allow use differentials in water rates.

Super Districts

This flexibility would not be possible where the contracting agency covers a predominantly rural area. It may be that "super districts" should be encouraged which could in effect subsidize agricultural at the expense of municipal and industrial water users in the trade center of the area. Practically, there is a difficulty in forming such districts.

It is noted that the Metropolitan Water District of Southern California fits the definition of a super district. The Metropolitan does make a smaller charge per unit of water used for agriculture than it does for municipal and industrial water. But Metropolitan officials pointed out that the agricultural water is offered on an interruptable basis while the demand for municipal and industrial water builds up.

The Metropolitan's super district status gives rise to another problem in the field of contracts for deliveries from the state facilities. The question is whether the State should contract only with the Metropolitan for any deliveries in the Metropolitan's service area, or should contracts be offered agencies now receiving supplies from the Metropolitan.

Department officials indicated they believe this question should be left to local decisions. However, the department could well be confronted separately by a "master" agency, and by one of its constituent agencies, each seeking contracts for competing or overlapping plans for water deliveries.

Contracts With Private Agencies

A subsidiary question is whether the State should contract with a private agency, or whether it should contract only with public agencies who in turn contract with private persons or groups.

A person or a corporation has limited liability. Thus, long-term contracts, if the department proposes to write them, might be abrogated by dissolution of the corporation or bankruptcy of the person. It would seem that a contract for delivery of water from the state facilities with a corporation or individual could be justified only if a bond were posted. Full security would only be accomplished by a bond amounting to total amounts called for in the contract.

Part of the advantage in contracting with public agencies is the security given by the agency's taxing powers. Contracts for delivery of water should include a requirement that the agency levy taxes to make up deficiencies in revenues from other sources to meet contract amounts.

Delta Pool Concept

Special circumstances affect the assignment of repayment responsibility to groups of water users in the service areas of the facilities and the broader State Water Resources Development System. A major one is the physical fact that an economic way for export of water from areas of origin to areas of deficiency is through the Sacramento-San Joaquin Delta.

This method was proposed in the State Central Valley Project Plan of 1933 which called for a major dam on the Sacramento with pickup of water from the Delta for export southward. The principle was taken over by the Federal Bureau of Reclamation in initial features of the present Central Valley project and extended with construction of American and Trinity Reservoirs which at least partially are intended to augment Delta water supplies.

A striking feature is that for deliveries being made so far to points outside the Sacramento watershed the federal aqueduct system does not begin at the storage facilities. Instead it begins at the Delta where releases from storage facilities, minus depletions, eventually arrive. This same physical arrangement will be used for the facilities and for further storage works of the C. W. R. D. S. which are planned to contribute to the amounts of water to be exported.

Parenthetically it is pointed out here that withdrawals from the Delta for export by aqueducts of the facilities far exceed the contributions to the Delta by facilities storage. Withdrawals are planned to amount to between 4 and 4½ million acre-feet annually, while Oroville Dam releases would augment Delta supplies by about 800,000 acre-feet. In fact, the department and the Bureau of Reclamation have a tentative agreement not to oppose each other on diversions of water in the Sacramento watershed and the Delta of 5,260,000 and 8,300,000 acre-feet annually, respectively.

Future Reservoirs

Thus, the Delta Pool concept has been used as an engineering method and is proposed as one basis for allocation of costs. It is taken for granted in the planning for construction by the State of a water system that Oroville Dam is only the first of a number of storage reservoirs to be built to augment water supplies in the Delta.

But it is also conceded that additional storage works will be more expensive than Oroville for amounts of water developed. This will occur both because of natural conditions and because of expected continuing rises in construction costs.

So a question arises of who gets the benefit of the earlier, cheaper construction; or conversely, who pays for the more expensive later works? Should areas whose need for water or their ability to pay for it occurs later in time pay a penalty? Or should all agencies which eventually receive water from an overall system share in both the advantages and disadvantages of a step by step construction program?

In testimony before the committee, one viewpoint was expressed by officials of the Metropolitan Water District of Southern California.

Mr. Joseph Jensen, Chairman of the Metropolitan Board of Directors, said it was that agency's policy to seek through contracts a right to water from the state system from particular sources and a right to have the water made available from particular conservation and delivery works. Such a policy would, of course, give to any agency getting any such contract in the initial development of the state system a price advantage virtually in perpetuity. Mr. Jensen made it clear that the Metropolitan, after buying what he called a "first helping" of water from the initial facilities, would be willing to buy a second helping at a higher price—if a second helping were needed.

Los Angeles View

Other Southern California agency representatives indicated a willingness to pay a water price including a component for increases in the cost of making the water available in the Delta. For instance, Mr. William S. Peterson, General Manager and Chief Engineer of the Los Angeles City Department of Water and Power, advocated a two-part rate structure with one part consisting of proportionate shares of state bond interest and redemption costs. He testified as follows:

> "The second part of this rate structure should be agreement to pay to the State on an acre-foot basis the *average net cost of water at the Delta, after proper credits for flood control, power or*

other contributions or revenues, plus the operating maintenance and replacement cost of the aqueduct and pumping plants to the point or points of delivery to the local agencies, also on a cost per acre-foot basis.''

Financing

A combination of fund sources for financing the ''facilities'' and ''system'' is proposed by Chapter 1762 of the 1959 Statutes. These sources, and the specific purpose for which funds can be used, have a complex interrelationship. The sources include the $1,750,000,000 in general obligation bonds proposed to be authorized the California Water Fund, and under some circumstances, the General Fund and revenues from the ''system.''

The ''facilities'' have been represented as being fully financed from bond sale proceeds and use of California Water Fund money. The ''faeilities'' under the chapter include Oroville Dam and five small projects on the Upper Feather River previously authorized, the North and South Bay Aqueducts, levees and other structures in the Delta, a main aqueduct system to Southern California, a subsidiary aqueduct through Paeheco Pass to the San Luis Obispo-Santa Barbara area and drainage works in the San Joaquin Valley.

Actually not all the $1,750,000,000 bond issue will be available for these facilities. Bond sale proceeds totaling $130,000,000 would be reserved for loans and grants for local projects under the Davis-Grunsky Act, and the availability of bonds for the facilities is deereased by the amount of Water Fund money spent on them.

The point is made that the estimated amount of funds required for the facilities was $1,748,000,000 of the $1,750,000,000 which would be made available by Chapter 1762. This estimate was based on priees prevailing in the spring of 1959. Heavy eonstruction eosts have inereased by about 3 pereent a year during the last decade. Cost indices used by the Bureau of Reclamation and the Corps of Engineers of the U. S. Army follow:

CONTRACT UNIT PRICES

Heavy Construction and Underground Utilities in Western United States (West of Denver)

Compiled by: Estimate Section
San Francisco District, U.S. Army

7-1-50	111
7-1-51	139
7-1-52	144
7-1-53	143
7-1-54	143
7-1-55	141
7-1-56	157
7-1-57	171
7-1-58	163

United States
Department of the Interior
Bureau of Reclamation

Commissioner's Office—Denver, Colorado

COST INDEXES FOR CONSTRUCTION WORK
(1948-1951 = 100)

COMPOSITE INDEX BASED ON A PROJECT CONSISTING OF A CONCRETE DAM, HYDRO-POWER PLANT, POWER TRANSMISSION SYSTEM, EARTH DAM, CANALS, LATERALS, AND DRAINS

1-1-50	96
1-1-51	106
1-1-52	114
1-1-53	116
1-1-54	112
1-1-55	113
1-1-56	119
1-1-57	129
1-1-58	125
1-1-59	126
7-1-59	127

Water Fund Reimbursement

Revenue from the facilities is dedicated first to maintenance, operation and replacement of these works; second, to payment of principal and interest on bonds sold and third for reimbursement of Water Fund expenditures.

Since the bonds proposed to be issued would be general obligations of the State, any insufficiency of revenues to meet debt requirement automatically would be made up from the General Fund.

Officials of the Department of Water Resources testified they believe that, under present law, money spent from the Water Fund on reimbursable items of the facilities would have to be returned to the Water Fund from facilities' revenue. Director Harvey O. Banks also stated in a letter to the committee (Appendix I) the department's intention to obtain revenue from contracts for facilities' services sufficient for reimbursement of the Water Fund with interest, as well as to meet debt serviee and operation and maintenanee costs. And, the department's January 21, 1960, ''Principles'' statement reiterates this intention.

However, the committee obtained an opinion from the Legislative Counsel holding that under present law the department is required only to obtain revenue sufficient to meet debt service and operation and maintenance. It is pointed out that a change in departmental policy to forego collection of the ''Water Fund'' component is possible in the future and could result in inequities as between contracting agencies.

If reimbursement of Water Fund expenditures were not provided for, some contractors for services from the facilities would gain a very considerable advantage. Department officials testified that expenditure of $199,000,000 from the Water Fund already is authorized. It has been estimated that income to the fund will be $15,000,000 to $20,000,000 a year. Taking the lower estimate and assuming that the facilities will be completed by 1982, it appears that well over a half-billion dollars of the expenditures on the facilities will be financed from the Water Fund. This does not take into account any spending of money which may eome into the Water Fund as a result of facil-

ities' revenue in excess of amounts needed for debt service.

It is emphasized that Water Fund moneys will not be available for spending on features of the "system" other than the "facilities" at least until the facilities are completed. Instead, bonds are sequestered and earmarked for these other features in an amount equal to the expenditures from the Water Fund for the facilities. These bonds, of course, will bear interest.

It is concluded that future units of the system will bear a cost penalty as against the facilities unless interest is in fact charged for Water Fund expenditures for the facilities.

It is pointed out also that the bond "set aside" requirement becomes operative only on the effective date of Chapter 1762. Transfers from the Water Fund before that date have been estimated at $199,000,000 by the department, as noted above.

REIMBURSEMENT

In the Cost Allocation Section of this report, there was a discussion of methods of determining the amounts to be charged to various functions of the facilities in order to arrive at equitable charges to contractors for "vendible" services. In water development in the past, some functions have received special consideration in calculating charges.

For instance, in federal water development, expenditures for flood control, navigation, fish and wildlife protection or development and recreation development particularly have been considered "nonreimbursable"; that is, they have been considered a charge against general funds and it has not been sought to amortize them through direct charges on those who benefit from the functions.

California Statutes, including Chapter 1762, give no clear direction on this point, however, in determining charges and fund sources or similar functions of the "facilities." A Legislative Counsel opinion cited above (Appendix IV) would indicate that the department is not necessarily required to seek project revenues to cover all costs of the "facilities" since the opinion holds that revenue sufficient only to cover debt service must be collected.

This view apparently was concurred in by James F. Wright, Deputy Director of Water Resources, in a statement he presented to the committee. Mr. Wright's statement is reproduced as Appendix III. It gives details of fish and wildlife and recreational developments planned in connection with various reservoirs of the "facilities." These developments were described as "initial" and included expenditures for picnicking, swimming and boating (including ramps); camping facilities; roads and parking areas, and general land purchases. Costs of these developments at 4 of the 11 reservoirs including in the "facilities" were estimated to be a minimum of some $1,750,000.

Mr. Wright had been asked to comment on the following question:

> If the department has or receives authority to spend funds made available by the act for recreation and fish and wildlife, would it still need legislative authorization in order to declare these expenditures partially or wholly nonreimbursable from project revenues?

His reply was:

> "In Section 233 of the Water Code, added by Chapter 2047, Statutes of 1959, the Legislature has implied that facilities necessary for public recreation and the preservation and enhancement of fish and wildlife resources of statewide significance should be nonreimbursable.
>
> "Excluding annual project operation and maintenance charges, and replacement costs, bond interest and principal is the only project cost required to be reimbursed under present statutes. Section 11455 of the Water Code provides:
>
> "Section 11455. *The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue* which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and *which will provide at all time ssufficient funds for redemption of all bonds and payment of interest* thereon, as and when such costs and charges become due and payable. (Emphasis supplied.)"

Section 233 of the Water Code does indicate a definite legislative intent to make cost of facilities for public recreation and preservation and enhancement of fish and wildlife nonreimbursable from project revenues. However, it does not give clear direction on the point.

The section reads:

> "No plans or proposal for authorization of a project for construction or operation by the State shall be submitted to the Legislature by the Department of Water Resources unless the plans or proposal includes (1) the comments and recommendations, if any, of the Department of Fish and Game and (2) provision for any water or facilities necessary for public recreation and preservation and enhancement of fish and wildlife resources that the Department of Water Resources determines to be justifiable in terms of statewide interest, and feasible, as a nonreimbursable cost of the project."

It is pointed out that the section calls on the department only to propose recreational and fish and wildlife developments as nonreimbursable items in recommendations to the Legislature for authorization of projects.

The section envisions separate authorizations with the Legislature considering proposals for nonreimbursable expenditures in connection with each project as it is brought up for approval. But, Chapter 1762 not only would authorize every project in the state water plan, but also empower the department to add new projects to the authorized list without further legislative action.

Thus, although reports by the department undoubtedly will be submitted, they will be for the informa-

tion of the Legislature and not in the form of requests for authorization of works and will not in themselves necessarily allocate funds for recreation-fish and wildlife purposes.

A further indication of legislative intent on the general subject of nonreimbursability of some project costs is contained in the Davis-Grunsky Act as amended in the last legislative session. In combination with Chapter 1762, the act authorizes outright grants of money obtained from bond funds for fish and wildlife and recreation development. Section 12880 of the Water Code, included in the act, states in part:

> "(C) Grants in furtherance of a project may be made for the following purposes:
>
> "(1) For the part of the construction cost properly allocated to the preservation and enhancement of fish and wildlife incidental to the primary functions of the project.
>
> "(2) For the part of the construction cost properly allocated to recreational benefits of *statewide* interest that are incidental to the primary functions of the project.
>
> "(3) In special circumstances, grants may be made for other parts of the construction cost in which there is determined to be a *statewide* interest."

It was pointed out to the committee by the then Director of Fish and Game, Mr. William E. Warne, that some fairly precise definitions of terms are necessary to any discussion of allocation of recreation-fish and wildlife costs. His definitions, and recommendations on sources of expenditures, are reproduced here:

Recreation

"Water associated recreation is comprised of all those outdoor enjoyments obtained by people as a direct or indirect result of the presence of water including such things as water skiing, swimming, boating, sport fishing, hunting, esthetic enjoyment, as through camping and picnicking, etc.

Recreation Measures or Facilities

"Those measures or facilities taken or constructed and operated for the purpose of making water associated recreation available and usable by the public.

Maintenance (or protection) of Fish and Wildlife Resources

"This refers to the measures necessary to protect the existing fish and wildlife resource, and to maintain natural productivity in connection with a water development project.

Mitigation (or compensation) of Fish and Wildlife Losses

"Those measures taken or facilities constructed and operated for increased production of fish or wildlife as compensation for an unavoidable loss to the resource as a result of water development. Provisions for a fish hatchery to compensate for lost spawning areas; provision of a larger minimum pool in a reservoir to compensate for reduced flows in the project stream, such can be considered as mitigation measures.

Enhancement of Fish and Wildlife

"This means the improvement of conditions for fish and wildlife; making the habitat better than it was under natural or preproject conditions resulting in increased postproject populations of fish or game. Improved streamflow maintenance below a project dam would be a typical enhancement feature.

Fish and Wildlife Maintenance Costs

"The maintenance of fish and wildlife in the process of developing water resources has long been recognized as the responsibility of the sponsor of the project in question. Very old sections of the Fish and Game Code relate to this. The maintenance of the State's fish and wildlife resources will be incorporated into the planning and will be one of the accepted features of the state water program.

"The constructing agency, whether public or private, must provide downstream water release or take other measures or provide suitable facilities to prevent reduction in fisheries and wildlife values from the construction of any project. This policy is equitable and has application to state projects.

"The costs of maintaining existing resources are considered an integral part of the cost of the project and appropriately should be included in the costs allocated to each major project purpose, for example, municipal water supply or irrigation. Thus such costs would become repayable by the recipients of project vendible services just as would the cost of the concrete that goes into the dam. I (Director Warne) believe there is question that state funds can be expended for such purposes. If any such questions exist anywhere they should be specifically dispelled by action of the Legislature.

Cost of Mitigating Losses to Fish and Wildlife

"Mitigation of unavoidable or accepted losses to fish and wildlife will also be a standard feature of state water development as is maintenance. Similarly, mitigation costs should also be considered part of the basic project costs repayable by the recipients of project vendible services.

"To our knowledge no legislation has ever been enacted which authorizes any water development agency, either public or private to destroy fish and game resources without compensation or mitigation. The principle seems well established. There are examples of failure to apply it, however. There should be no such failures in the execution of the State Water Plan.

Cost of Enhancement of Fish and Wildlife

"Unlike maintenance or mitigation, enhancement of fish and game should not be repayable by the recipients of vendible project services. Enhancement of the publicly owned fish and game resources should be financed by the State on a nonreimbursable basis. Where enhancement is desirable and justified, it should be included as a project purpose to be paid for by the people from General Fund appropriations and not repayable by the water users. Enhancement of fish and game should be considered as a wise investment in the improvement of a state resource or property."

It appears there would be little argument but that "maintenance" of and "mitigation" of losses to fish and game resources resulting from water development should not be a charge against those taking fish and wildlife for pleasure or profit. Where enhancement of fish and wildlife resources for a public recreational opportunity is involved, revenue should be sought through appropriate user fees, leases to concessionaires and other incidental charges. Some problems involved are:

1. Earning capacity of a recreational area comprising a reservoir and surrounding land will vary from location to location. Proximity of the recreational area to a population center will be a major factor.

2. Costs of recreational facilities will vary from reservoir to reservoir and will not necessarily be related to the number of persons attracted to the reservoir. Cost of land and difficulty of road and other construction are among significant factors.

3. Recreation areas developed in connection with the state water facilities will "compete" with other existing areas where similar recreational opportunities are available. Fees higher than those common in the region almost surely will mean less patronage and so would be self-defeating.

4. A basic difference exists between delivering water and making recreation available. Water is delivered to a particular place to be used eventually by a particular individual. The recreational opportunity stays in the same place and is available to any who want to travel to it. Undeniably, many travel long distances to use a recreational facility and statewide interest becomes involved.

Two main factors would emerge from an analysis of arguments for an acreage limitation on lands receiving water from a public delivery system. One involves concern that private citizens may receive "unearned increment" as a result of use of public funds or public credit. The other holds that large farming operations are undesirable at least if they are fostered or maintained as a result of government action. The latter premise involves questions of philosophy, sociology and political judgment. No conclusions are reached in this report on this aspect of the committee study.

Value Increase Does Occur

It seems clear that a land value increase does occur when water is made available to land in an arid area, and that the increase can be measured. The measurement, however, would be difficult, expensive, and time-consuming. The per-acre value increase could vary from area to area and even from farm to farm. A major factor would be whether the water from the new public system is for supplemental use or constitutes the total supply for the lands receiving it. Where supplemental supply is involved, cost and sufficiency of the water available from other sources would affect the amount of economic gain resulting from availability of new water. Crop shifts that could be made with additional water would affect value increases, as well as market conditions for crops that might be involved. Projections for these factors would have to be made into the future.

Subsidy Questions

It has been and will be argued that "unearned increment" occurs only when a "subsidy" is involved in the price of water to be delivered from a public project. There appears to be no doubt but that some subsidy will occur under present financing plans for the state water facilities, because:

1. Public financing would come from bonds sold by the state. Interest payments to bondholders would be exempt from federal income tax and consequently the bonds would be more attractive to most investors than private obligations. Interest rates currently paid on state general obligation bonds are 1 to 1½ percent lower than rates on bonds issued by privately owned utilities. However, this same financing advantage is available to irrigation districts and other local units set up to deliver water.

Another point is that over the years a good many millions in state money has been spent on surveys, investigations and studies for the state system, which will not be reimbursed. If the planning had been done privately a charge, including a profit, would have been made.

2. If a cost allocation method such as "separable costs-remaining benefits" is used, and if power produced in the facilities is priced at market value, there will be a subsidy from power revenues involved in water pricing. This would occur whether excess power revenues are "spread across the board," are applied to storage facilities, are applied to pumping costs, or are applied in some other fashion.

On the other hand, if power is sold at less than market value, users of the power are subsidized in the sense that they are getting it for less than a privately-owned utility could charge. The "subsidized" power users could well include large corporations.

Indirect benefits certainly would accrue also to persons other than large farm landowners as a result of construction of the state water facilities. Business and commercial activity would increase in towns within or near farm areas receiving water from the facilities.

There is the point also that increases in land value as a result of government activities occur in many other instances—from construction of a highway, formation of a park, etc. In these cases no attempt is made to limit or recapture the gain.

It is at least possible that the greatest "unearned increment" from the state water facilities would be received by landowners whose land became susceptible to residential subdivision as a result of the availability of water from the state system.

Further, an acreage limitation on lands receiving water from a public system does not prevent "unjust enrichment." It does spread the gain among a larger number of people.

Administrative Difficulties

The imposition of an acreage limitation presents administrative difficulties if it is to accomplish its desired purpose. It is difficult to separate out the land value attributable to water availability, whether the valuation is made before or after the water becomes available. Each excess holding must be assessed.

Other Methods

If recapture of part or all land value increase is sought, two methods appear most feasible—taxation or price differentials for water delivery. Taxes could include those based on property or income, or so-called standby taxes. Each raises problems, particularly of assessment in the case of property or income taxes.

The standby tax as used in a few districts in the State is a property tax against all land in the district and is based on general benefits from a water project.

It has been cited as a means of obtaining revenue for payments by contracting districts in advance of water deliveries, or in advance of ultimate quantities to be delivered. It may be used to obtain revenue from landowners who do not actually receive water.

It could also be used to recapture "unearned increment," when applied in connection with an acreage standard.

The added charge on water deliveries destined for landholdings in excess of any given size probably would be the easiest means, administratively, of recapturing enhanced values. The extra charge could be set by the contract and the purchasing district or agency could be required to submit periodic reports on landholdings within its boundaries. There would be an incentive for the district to keep this information up to date, since the splitting up of large landholdings would mean a smaller water bill. A difficulty with this approach is in finding a rational basis for determining how large this extra charge should be. Here again, measurement of "unearned increment" again is involved. Also some method would have to be found to insure that the contracting district passes on the extra charge to the large landowner, if this is the desired effect.

An argument that the federal 160-acre limitation would apply to most of the State's service area because of joint use of federal facilities was advanced in the California Labor Federation statement. Joint facilities involved would be the Delta-Mendota Canal and the San Luis Reservoir. The argument is based on a section of reclamation law which states that water delivered through any "canal or ditch" built with reclamation funds must be sold in accordance with reclamation law, including the 160-acre limitation.

An exemption for state facilities was contained in the San Luis Project authorization bill as approved by the House Interior Committee. The Senate Interior Committee approved a similar clause but it was deleted on the floor. The exemption clause states:

> SECTION 7. The provisions of the Federal Reclamation Laws shall not be applicable to water deliveries or to the use of drainage facilities serving lands under contract with the State to receive a water supply, outside of the Federal San Luis unit service area described in the report of the Department of the Interior, entitled "San Luis Unit, Central Valley Project," dated December 17, 1956.

House sponsors of the bill maintained that the service area of the state project would be exempt from the acreage limitation even without Section 7. The report of the House Interior Committee on the bill stated:

> "In accepting Section 7, a majority of the committee points out that there is nothing in the reclamation laws which, in the absence of a provision in the bill affirmatively making the land-limitation provisions applicable in the State-served area, would forbid the State from serving whatever lands it chooses on whatever terms it chooses."

MINORITY REPORT

TO PARTIAL REPORT OF THE FACT FINDING COMMITTEE ON WATER RESOURCES OF THE CALIFORNIA STATE SENATE

LETTER OF TRANSMITTAL

California Legislature
Senate Fact Finding Commitee on Water
Sacramento, March 14, 1960

Hon. Glenn M. Anderson
President of the Senate, and
Gentlemen of the Senate
Senate Chamber, Sacramento, California

Mr. President and Gentlemen of the Senate: There is submitted herewith a minority report to the partial report of the Senate Fact Finding Committee on Water, which partial report was submitted to the Senate on March 8, 1960.

Respectfully submitted,

James A. Cobey
J. Howard Williams

Stanford C. Shaw
(with reservations)
Hugh P. Donnelly
(with reservations)

March 11, 1960

Preliminary Observations

I agree with much of the Majority Report. Nevertheless, I submit this Minority Report primarily because I believe the recommendation of the Majority Report for uniform zone pricing, regardless of use, will price most of California agriculture out of the State Water Program and because the Majority Report makes no attempt even to look into the matter of California recreation bearing its fair share of the capital cost of the State Water Program attributable to recreation—at least to the extent of its ability to pay. Thus, in short, the Majority Report discriminates in favor of recreation and against agriculture.

This seems strange when one recalls that California is the leading agricultural state in the union, that the agricultural use of water in California has always been a legally preferred and prior use to its recreational use and that an industry which provides food and fibre to the people of the State, nation and world should certainly stand ahead of one that takes care of only their leisure time. Which is the more important in our scheme of things—work or play—the provision of life's basic necessities or its pleasures?

I recognize that the State Water Program is a far broader program than that of the Federal Government's Bureau of Reclamation. The latter is designed to provide primarily agricultural water and only incidentally municipal, industrial and recreational water. The former is designed to provide water for all four of these uses.

I also agree that, in so far as possible, the State Water Program should be a self-sustaining program and should not be to any significant degree a General Fund program. This means that the many and varied beneficiaries of the State Water Program, generally speaking, must pay together its entire cost—capital (including interest) operation, and maintenance.

Fundamentally, the State Water Program is very largely a supplemental water program. Its purpose ordinarily is not to provide water for new areas which are today completely without water but to firm up the water supply of areas completely developed or being developed. For the great multitude of its customers the State Water Program will not be their sole source of water. They will be provided water by local or federal sources as well as by the State Water Program. The price of state-developed water to them must, therefore, correspond in some substantial degree, that is be at least somewhat competitive, with the prices of their existing water supplies. Accordingly, the prices of state-developed water cannot be set in a theoretical vacuum, but must be fixed in precisely the same manner as an intelligent businessman would set his price in such a situation.

Thus, in order for a wide market to exist for state-developed water its prices must be competitive to some degree with existing water prices paid by its cus-

tomers. This is not to say that, generally, state-developed water will not be the most expensive water the customer uses. It may very well be, and the customer may, therefore, be able to use it only on a blend basis as a comparatively small part of his total supply. But its price must be within his ability to pay or you have no customer.

In other words the price of state-developed water must be set on a marketing basis. Demand can be accurately ascertained only in terms of specific prices. State-developed water must be so priced that a demand for it will exist not merely in the metropolitan and mountain areas of the State but also in its great agricultural valleys as well.

Why Uniform Zone Pricing Is Bad

The State Water Program should not be made a tool of social reform. Likewise, in its pricing policies, it should not disrupt or dislocate the existing water price structure within the State. I refer both to the differential that very generally exists throughout the State between the prices of municipal and industrial water on the one hand and the price of agricultural water on the other. To use an admittedly somewhat extreme example, the farmers of Merced County generally pay between $2 and $3 an acre-foot for their water. The San Francisco householder, however, pays well over $100 an acre-foot for his water. The Federal Bureau of Reclamation normally charges two to three times as much for its M. & I. water as it does for its agricultural water. Similarly, the differences now existing among the various agricultural areas in the State in their water prices should not be disturbed by the State Water Program. These differences in the cost of water are important competitive factors among the various agricultural areas.

This realistic, fair and nonsubversive approach to state water pricing has been ignored by the Majority Report in favor of uniform zone pricing regardless of use. Uniform zone pricing ignores and destroys the historic and existing very substantial differential in prices between M. & I. water on the one hand and agricultural water on the other, throughout most, if not all, of the State. It also does violence to the existing water price differences among the various agricultural areas of the State and might well dislocate seriously their respective competitive positions.

Most significantly, however, the uniform zone pricing of water, when coupled with a full repayment of all costs of getting the water to the point of delivery, will price most of California agriculture out of the State Water Program. This seems odd in a statewide water program and in a state where the farmer uses probably in excess of 75 percent of all of the water used and is, without a doubt, the largest per capita user of water.

I happen to have the quaint notion that the great agricultural areas of the State are still a part of the State and should be afforded a reasonable and equitable opportunity to participate in the State Water Program. How strange that the State should propose to build, in effect, a pipeline from the Delta for Northern California surplus water and run this pipeline through the San Joaquin Valley to the Tehachapis on its way to Southern California and, yet, price the water in the pipeline in such fashion that most of the San Joaquin Valley will be denied the use of the water passing through the valley.

However, those supporting the majority view generally claim that this result can be avoided if the policy of local subsidization of agricultural water is adopted. Under this policy the State prices water equally to all users within the delivery zone but the local distribution agency or agencies then subsidize their own agricultural users by charging them less than they charge municipal and industrial water users. This, I am advised, is the generally prevailing practice in Southern California and in most, if not all, of the great metropolitan areas of the State.

I submit that this practice of local subsidization of agricultural water is both improper for state-developed water and grossly unfair to the Central Valley of California and other nonmetropolitan agricultural areas. It is improper because he who develops the water rather than the one who merely delivers it should control its use and its prices. *Subsidization is properly the function of the developer, who creates the water supply, and not of the distributor, who merely delivers it.*

Local subsidization of agricultural water is grossly unfair to those in nonmetropolitan agricultural areas of the State because it reverses their competitive water price position with respect to the agricultural fringe metropolitan areas. Generally speaking, the Central Valley of California, for example, has cheap agricultural water compared to the metropolitan areas of the State. Yet, under this policy of local subsidization of agricultural water, the major and predominant demand of the metropolitan areas for M. & I. water (in places such as Contra Costa County) has tremendous capacity to subsidize the locally minor demand for agricultural water. But in the Central Valley the reverse is the case where the minor demand for M. & I. water would have to subsidize the locally major demand for agricultural water. Thus, the fringe metropolitan agricultural areas have tremendous capacity to subsidize local agricultural water while the Central Valley, for example, has practically no capacity for such local subsidization of agricultural water. Under such a policy the farmer far removed from the local market is discriminated against insofar as the cost of the water is concerned in favor of the farmer who is close to the

local market. I repeat, the State Water Program should not be made a vehicle to remake the water price structure of California agriculture.

Subsidization, although long and widely established in government, is regarded by some to be, per se, undesirable. I agree that subsidization is bad if hidden or if unjustified. But with respect to agricultural water, subsidization is the prevailing practice both at the local level and at the federal level. Many irrigation districts use their power revenues to subsidize their agricultural water charges and taxes. As just discussed, many other local agencies subsidize their agricultural water users at the expense of their municipal and industrial water users. The Federal Bureau of Reclamation makes agricultural water available to agricultural users interest-free and it also uses the project's excess power revenues to reduce the prices of agricultural water. The majority report would end this prevailing practice of subsidization of agricultural water—at least on the state level. In fact it would spread initial excess power revenues across the board to M. & I. water users as well as to agricultural water users. The former does not need such assistance, the latter does.

Most significantly the majority report would place unsubsidized state-developed agricultural water in competition with subsidized local and federal-developed water. *This does not make marketing or business sense.* Obviously, the customer is going to go where he can buy the cheapest. This means that many California farmers, particularly in the San Joaquin Valley, will not pay for unsubsidized water if other subsidized water is available and, if such water is not available, will just be priced out of the State Water Program completely.

As all familiar with agricultural water development and distribution know, the Federal Bureau of Reclamation makes repayment capacity studies of all potential distribution areas. These studies are then used as the basis for entry upon contract negotiations leading to the establishment of prices. Under this system subsidization is not unlimited; it is related, as it should be, to the farmer's ability to pay. Subsidization makes up the difference between the cost of the water and his ability to pay that cost as studied and negotiated.

Adoption of the subsidization principle to this limited extent does not mean that the State Water Program then becomes a General Fund program, at least in part, and a nonselfsustaining program. I believe that the limited subsidy necessary to *some* of the State's agricultural areas could be provided by increasing by the total amount of the subsidy, the prices payable for municipal and industrial state-developed water. The impact upon their individual users might well be so slight as to be practically unnoticed and so doing would permit California agriculture to participate generally in the State Water Program as I believe it should.

In any event, a study should be made at once of the ability to pay of the various potential agricultural water distribution areas and once these abilities have been established contract negotiations should begin with local agencies in these areas. From such studies and such negotiations, tentative proposed prices could be set and then compared with the actual cost of developing and delivering this agricultural water. The difference between the proposed revenue and the actual cost—a dollar and cents figure—could next be placed before the California Legislature and the people of California, if necessary, to see whether the municipal and industrial water users of this State would be willing to assume this additional burden or any part of it. It is my guess that this additional burden when spread statewide would be so slight as to win ready acceptance from the metropolitan areas for this limited agricultural water subsidy policy.

The benefits of such a policy would be that state-developed agricultural water could then be priced competitively, in line with existing price differences among the various agricultural areas and in line as well with the existing price differentials between M. & I. water on the one hand and agricultural water on the other. The State Water Program would then follow and be in accord with the existing water price structure throughout the State instead of running counter to it. *The result of all of this would be that California agriculture would not be denied its fair share of state-developed water at a price it could afford to pay.*

Actually, on the other hand, under the proposed full cost repayment policy when coupled with a two-price or special tax policy for the larger acreages, the California farmer would not only be required to pay full cost but the larger farmer would be discriminated against, as no other water user would be, in that he would have to pay a fictional additional cost or a special tax. No one has proposed that the larger municipal and industrial users or the larger recreational facilities pay a discriminatory price or tax for state-developed water. Bigness is bad evidently only in agriculture and it is only in agriculture that it is to be penalized. The average California farm is now over 300 acres in size but notwithstanding this fact a California farm of 320 acres (sometimes 160 acres) is to pay more than merely the full cost of the state-developed water. This is adding insult to injury.

Why Recreation Should Not Have A Free Ride

With the decline of mining and the return of lumbering to more normal levels, recreation becomes more and more a principal industry of the mountains of Northern California. The State Water Program

quite properly will aid and stimulate this important industry. It will quite literally create resort areas and facilities where none previously existed. With this I have not the slightest disagreement. The preservation and enhancement of recreational facilities should be a basic and fundamental purpose of the State Water Program in view of the continuation of the explosive growth of our population and the declining area and natural facilities still available for wholesome outdoor recreation such as hunting, fishing, boating, camping, etc.

But if the State Water Program is to create new recreational facilities why shouldn't their capital cost be borne in some significant degree by the beneficiaries of these facilities—at least to the extent of their ability to pay? The water users must pay for the water they use. The power users must pay for the power they use. But the recreational beneficiaries are the untouchables when it comes to the repayment of any part whatsoever of the capital cost of the creation of a body of water used at least partially for recreational purposes. A farmer, the value of whose land is enhanced by the provision of state-developed water, even at full cost, is said by some to be unjustly enriched. But the resort owner whose entire lake front is created for him by the State is not considered by these same people as having been unjustly enriched, although he pays not a farthing for the creation of a man-made lake without which his resort could not exist. What is sauce for the goose should be, likewise, sauce for the gander. Recreation and agriculture should be treated alike and not differently.

The reply that is frequently made is that historically recreational facilities have been provided by the State without charge. But these recreational facilities, which are here involved, are a byproduct of a water development program. Every other significant beneficiary of that program pays in whole or, even if subsidized, in part his fair share of the capital cost of the program. Why then should recreation—the fast-growing industry of the mountains of Northern California—have a free ride?

I do not want to place the use of these recreational facilities beyond the reach of the family of modest means. The hunters and fishermen of the State already pay for their hunting and fishing licenses and stamps. User fees at best do no more ordinarily than pay for the operation and maintenance of these facilities and in some cases do not do this. The repayment of the recreational share of the capital cost must instead come from those directly and commercially benefited. I refer to the businesses and the areas which make their living largely from the users of these recreational facilities.

Some would claim that giving a free ride to recreation is payment to the mountain areas for the value of their water in place. It is a payment to the areas of origin for the right to develop this basic resource which is located there. But the area of origin and watershed protection statutes already are accomplishing the dual objectives of reserving sufficient water to the areas of origin for their ultimate needs and of providing funds for the local development of such water. The cloud these statutes place on the right to develop water by others has led these others, in recent years almost without exception, on several different rivers, to make a settlement with the areas of origin which not only reserves water to these areas but also provides them with the money needed for the local development of the reserved water. Under these circumstances it does not seem just that the mountain areas should receive the additional political favor of a free ride for recreation.

I am not now prepared to say what allocation the recreational beneficiaries should pay of the capital cost of multiple purpose water development projects which include recreation among their purposes. What is needed immediately is a study of what would be a fair allocation and of the fairest and least expensive method of recovering that allocation from these beneficiaries. I and others have suggested such means as local conservancy districts, long-term shore front leases, special taxes, etc.

But so far as the majority report is concerned these suggestions have fallen on deaf ears. They are still following the ostrich policy of hiding their heads in the sand when it comes to recreation. For them it is O.K. to price most of California agriculture out of the State Water Program and at the same time give to recreation a completely free ride.

I say let's have fair play for both agriculture and recreation in the State Water Program. Neither agriculture nor recreation should have to look exclusively to the other two levels of government for the water they need. The State should price the water it develops for them fairly and both agriculture and recreation would then enjoy the benefits of extensive participation in the State Water Program.

STATEMENT OF OBJECTIONS

SENATE, CALIFORNIA LEGISLATURE
March 2, 1960

SENATOR STEPHEN P. TEALE, *Chairman*
Senate Factfinding Committee on Water
State Capitol, Sacramento 14, California

DEAR SENATOR TEALE: In accordance with your suggestion, approved by the committee, I am taking advantage of the invitation to state objections to certain conclusions and recommendations contained in the March 1960 "Partial Report of the Senate Factfinding Committee on Water." In other respects, the report meets with my approval.

My first objection concerns Conclusion and Recommendation No. 1 under "Repayment of Costs." It is submitted that users should not be required to pay interest on expenditures from the California Water Fund. So far as I know, there is no precedent for charging interest on state money where the State has not been required itself to pay interest. It is my view also that water users would be making a sufficient contribution through payment of interest as well as principal on expenditures from bond funds considering the great statewide benefits that will result from the water program. I cite the fact also that the federal government does not charge interest at all on agricultural water. I do not intend that those facilities which are built from the California Water Fund of a local nature should receive special treatment. But in providing for repayment of capital investment, sufficient revenue should be sought to cover principal and interest on expenditures from bond funds and principal but *not* interest on expenditures from the California Water Fund.

Second, I do not concur in Recommendation No. 5, "Repayment of Costs," where it is stated: "No price differential would appear to be appropriate between water destined for agricultural use and that destined for domestic and industrial use." In my view, this is a simple solution and on the face of it, logical—but deceptive. For example, in the Mojave-Antelope desert areas, comprising about one-tenth of the whole State, at the anticipated prices under this arrangement, virtually no water could be sold to agricultural users. If a more realistic pricing schedule were used, there would be sufficient revenue from water sales to help defray some of the costs that other users will have to pay. Moreover, I understand that there may be considerable periods of time when there will be more water available that can be marketed under a single pricing system. Accordingly, I believe that the pricing arrangement should be more flexible and to some extent take into account the worth of water to users and the maximum dollar yield from all sales.

It would seem to me that remission of interest on water fund expenditures, which I advocated above, would be one way of achieving flexibility in rates for agricultural water.

In Recommendation No. 3, under "Reimbursement of Costs," it is stated: "Revenue should be obtained from recreational facilities through user charges, leases, and so forth, at rates comparable with those for similar recreational development in the areas involved." It is submitted that a more realistic approach would be to set charges that would yield maximum revenue but still attract substantial use of the facilities. Under the quoted recommendations the charges would be limited to rates in the area even though the facilities might be greatly more attractive than any of the other facilities in the area and therefore could yield higher revenue.

Also in Recommendation No. 3, under "Reimbursement of Costs," the report states "The committee recommends an independent study of the impact of construction upon local communities in areas where facilities of the State Water Resources Development System are to be constructed, including net benefits or losses to the local government involved." In my view, this study should extend beyond the impact of construction, and include a study of additional revenues that may be received by local government due to increased assessed values, which additional revenues will presumably extend far into the future.

Respectfully submitted,

STANFORD C. SHAW

APPENDIX

APPENDIX I

Representatives of the California Department of Water Resources appeared at hearings of the committee on two occasions. In addition, a number of questions were directed to the department about phases of financing and operating the proposed state water facilities and the State Water Resources Development System.

The statements and replies provide a broad picture of present state policy in water resources development. The first of the following documents is the statement presented to the committee by William R. Gianelli, former Principal Hydraulic Engineer for the department, which covers a number of general questions on project costs, allocations and repayment.

Following is a letter to Chairman Teale answering a number of more specific questions raised by Mr. Gianelli's testimony. Two further letters of reply also are attached.

Particular attention is directed to the concluding section of the department's letter dated September 30, 1959. This section constitutes a tabulation of sections of the California Water Code which in any way would effect the terms of contracts that could be written by the department for services from a state water system.

The concluding document of this Appendix I is the statement of principles for contract terms issued by the department on January 21, 1960.

STATEMENT OF THE CALIFORNIA DEPARTMENT OF WATER RESOURCES BEFORE THE SENATE FACTFINDING COMMITTEE ON WATER

WILLIAM R. GIANELLI, Principal Hydraulic Engineer, Sacramento, California, August 20, 1959

This presentation is made pursuant to notice of meeting by the Senate Factfinding Committee on Water dated August 4, 1959, and to discussions between Department of Water Resources representatives and the committee staff with respect to the subject matter of the meeting.

Our presentation today will be limited to certain background information and studies prepared as of this time. We will, in due course, have specific recommendations to make with respect to matters of pricing and the like which the Legislature may desire to consider. For the purposes of this presentation we have divided the subject matter into the following general groups:

1. Costs of the state water facilities as defined in Senate Bill No. 1106.
2. Cost allocations.
3. Nonreimbursable project costs.
4. Land and soil classifications.
5. Repayment ability studies.
6. Power studies.

Cost of State Water Facilities

The latest estimates of the cost of state water facilities as defined in Senate Bill No. 1106 were presented to the Legislature during the closing days of the 1959 Session in order to determine the approximate amount of the bond issue which would be required to construct the facilities as described. These costs are shown on Attachment 1 and are generally based on prices prevailing during the spring of 1959.

Cost Allocations

As you are aware, the subject of cost allocations and the details of making such allocations are complex technical matters. Generally speaking, there is no uniform agreement that any one method of cost allocation is superior in all respects and for all purposes. In addition, depending upon the type of cost allocation used, the results will vary over a considerable range. Based upon a comprehensive study of the various types of cost allocation and upon consultation with federal and other agencies, the Department of Water Resources has adopted the following general principles regarding allocation of project costs:

A. *Allocation of Costs for Water Production Facilities.* Costs, including all aspects thereof, will be allocated between the functions in accordance with the separable costs remaining benefits method. Included in the functions receiving portions of the allocated costs will be irrigation, municipal and industrial water, power, flood control, recreation, and others if justified. This method is now recommended for use by the federal agencies with which we must co-ordinate our activities and will thus constitute a basis for some uniformity. Furthermore, this method, while complex, is believed to be the most generally acceptable of all methods thus far devised particularly where multipurpose reservoirs are involved.

B. *Allocation of Costs—Major Water Conveyance and Other Water Facilities.* Costs including capital and interest and operation, maintenance and replacement expenses, will be allocated to water users on the basis of proportionate use of facilities. Where recreation benefits are found to result from operation of conveyance facilities, such as en route storage facilities, a portion of the cost of the storage facilities will be assigned to recreation benefits. In connection with a large conveyance system such as the San Joa-

quin Valley-Southern California Aqueduct System, it is not feasible to utilize the separable costs remaining benefits method. Attachment 2 shows the results of tentative cost allocations made for two portions of the state water facilities; namely, Oroville Dam and Reservoir and the San Joaquin Valley-Southern California Aqueduct System.

Your particular attention is invited to the fact that in the Oroville Dam and Reservoir cost allocation there has not as yet been any allocation to recreation. The department is presently carrying on further studies with respect to a possible cost allocation for this purpose, since there will be recreational use of the reservoir and the surrounding lands.

Final decisions as to the exact cost allocation at Oroville Dam and Reservoir will await completion of studies being carried on by the Corps of Engineers and in which the Federal Power Commission, the Bureau of Reclamation and the department are participating, with respect to the allocation to be made to the flood control function. The conclusions finally reached may result in slightly different allocations if the federal contribution for flood control accomplishments is different from the preliminary $70,000,000 estimate.

With regard to the cost allocation for the aqueduct system, you will note that the tentative cost allocation set forth in Attachment 2 was made by the method of proportionate use of facilities based on maximum required *discharge capacities* in the various aqueduct reaches to meet the maximum monthly demand for each purpose. An alternative method would be a cost allocation upon proportionate use of facilities based on *total annual quantities to be delivered* by aqueduct reaches. We are preparing such an analysis and the results of this particular method of cost allocation will be available within the next 10 days or two weeks.

Nonreimbursable Project Costs

Consistent with Section 233 of the Water Code as added by Chapter 2047, Statutes of 1959, and for the purposes of present studies the costs of the state facilities properly allocable to the preservation of fish and wildlife resources and recreation are considered as nonreimbursable.

That section reads as follows:

"SECTION 1. Section 233 is added to the Water Code, to read:

233. No plans or proposal for authorization of a project for construction or operation by the State shall be submitted to the Legislature by the Department of Water Resources unless the plans or proposal includes (1) the comments and recommendations, if any, of the Department of Fish and Game and (2) provision for any water or facilities necessary for public recreation and the preservation and enhancement of fish and wildlife resources that the Department of Water Resources determines to be justifiable in terms of statewide interest, and feasible, as a nonreimbursable cost of the project."

In addition the Upper Feather River features of the Feather River Project have been authorized by the Legislature and include recreational facilities as nonreimbursable.

Likewise, the department follows the principle of nonreimbursability for costs allocated to flood control and navigation with the expectation that present national policy governing the participation of the federal government in assumption of such costs will continue to prevail.

Our cost allocation analyses for all of the individual facilities within the program identified in Senate Bill 1106 are not yet completed. For example, recreational benefit evaluations which are now under way will provide essential data for such analyses in the near future. Three of the five reservoirs in the Upper Feather River Basin are exclusively recreational in purpose; their combined construction cost, estimated to be about $1,380,000 would be considered nonreimbursable. The other two reservoirs involve multipurpose facilities for irrigation purposes as well as for fish and wildlife and recreational uses.

The present studies of the department with respect to the North and South Bay Aqueducts and the San Joaquin Valley-Southern California Aqueduct System have been predicated on the theory that no recreation is involved. It may be, when our recreational studies are completed, that some of the costs from the aqueduct system may be allocated to recreational particularly in such reservoirs as Airpoint, Doolan Canyon and Arroyo del Valle Reservoirs on the South Bay Aqueduct; and San Luis, Castaic, Cedar Springs and Perris Reservoirs on the San Joaquin Valley-Southern California Aqueduct System. The total cost allocated to recreation will involve only a minor part of the total cost involved.

Land and Soil Classifications

The department has made comprehensive studies with respect to soil classifications, land use, irrigable acreages, and water requirements. The results of these studies for the Feather River and Delta Diversion Project Service Areas in Kern County and areas to the south are included in Bulletin 78, entitled "Preliminary Summary Report on Investigation of Alternative Aqueduct Systems to Serve Southern California," dated February, 1959.

Studies have been completed for project service areas south of Merced County, but have not yet been published. Studies in the remainder of the project service area are continuing at the present time and the results of these studies will become available from time to time.

The department is also making studies within the project service areas as to the type of crops that can be economically grown in these areas. Since water requirements and income-earning capacity differ among the various crops, a separate crop pattern is projected for each of the study areas under consideration. These

projections reflect consideration of future market outlook for the various crops suited to the area, prevailing conditions of irrigation development and indicated preference on the part of those farm operators who will be using project water.

Repayment Ability Studies

Shown in Attachment 3 is the average per acre-foot payment capacity at the main canalside for some of the service areas which would receive irrigation water from projects authorized by Senate Bill 1106.

The methods used in determining payment capacity, or ability to pay, for water is essentially the same as that used by the U.S. Bureau of Reclamation. Fundamentally, it consists of computing the gross returns from the sale of crops and subtracting from this sum the costs of production. The difference or residual, if any, then is considered to be the payment capacity or income available for the payment of water costs. The costs include all labor and materials, except water, used in crop production, cash overhead, such as taxes and repairs, interest on the investment and depreciation, and charges for management of the enterprise.

In connection with the determination of payment capacity, net farm income to farm operators also is estimated. This component includes the operator's labor wages, interest return on his investment, and the management charge referred to above. This income is over and above the payment capacity figure. Net farm income varies on a per acre basis as the size of the farm unit varies. Net income determination is important for it serves as a guide in ascertaining the minimum sized farm necessary to support a family and to provide for incentive.

In connection with the preparation of Bulletin 78, extensive studies were made of the ability to pay of the potential water users. It was found that the cost of water as set forth under cost allocations previously described was well within the ability of urban water users to pay and, in many cases, was comparable to costs presently experienced by such users. With respect to irrigated agriculture, these studies disclosed that in some areas the cost of Northern California water would be too expensive to be employed on some types of crops and in some areas. The capacity of Aqueduct System "B," presented in Bulletin No. 78, on which the facilities defined in Senate Bill 1106 are based, was adjusted to the economic demand for water in the areas that would be served thereby. Included in the studies was the recognition given to the cost of conveyance and distribution works that must be locally constructed and financed to bring water from the main aqueduct to the farmer's headgate.

Power Studies

In developing the hydroelectric facilities of multiple-purpose projects, the greatest total benefit results when these power facilities are constructed to the maximum capacity, that is, to the maximum degree of peaking, which is consistent with the other multiple-purposes, and which can be absorbed by the power market. The Oroville-Thermalito power facilities are designed for peaking, and the Federal Power Commission license also covers peaking service.

As has been previously indicated in the cost allocation of the Oroville features, approximately $293,000,000 or 56.7 percent of the total cost of these features has been allocated to power. This allocation includes not only the construction costs of the power facilities such as power plants, etc., but also the allocated share of the cost of facilities used jointly for power and other project facilities. Interest during construction, has been included in the cost allocation in accordance with standard practice.

Studies based on the cost of producing equivalent power in a privately constructed steam-electric power plant near load center indicate a present unit value of power at Oroville of approximately $22.80 per kilowatt of dependable capacity and three mills per kilowatt hour of energy. Based on these unit values, the entire output of the Oroville-Thermalito power facilities, at Oroville, would be worth an average of over $22,000,000 annually. A period of absorption would be required; therefore, this value would not exist immediately upon completion of construction.

The cost to transmit the Oroville-Thermalito power output to a load center in the San Francisco Bay area is estimated at $1,270,000 annually. This cost consists of the estimated annual costs of transmission lines and terminal facilities which have an estimated total construction cost of $22,000,000. The $1,270,000 does not include the value of capacity and energy lost in transmission. The amount of power delivered would, of course, be less than the power available at Oroville by the amount of transmission losses. Thus, the unit value of the power delivered at load center would be approximately $26.30 per kilowatt and 3.15 mills per kilowatt hour instead of the $22.80 and 3 mills at Oroville.

Transmission line, transformer and terminal facilities necessary to transmit Oroville-Thermalito power to Pumping Plants Nos. 1, 2, 3, 4 and 5 are estimated to cost approximately $51,000,000 to construct and would have an annual cost of slightly in excess of $3,000,000. These figures represent the estimated cost to transmit project power from the point of production to the points of project use over facilities constructed and operated by the State.

There are many different arrangements that could be made between the State and various public and private power agencies within the State in order to obtain the maximum benefit from the firm power produced at Oroville and to minimize the cost of the pumping power requirements for the aqueduct system. The department is continuing its studies of the various possibilities of exchange or purchase and sale arrangements which might be effected between the State and these agencies to insure the most advantageous use of the power potential of the project. As has been previously stated, when the state water facilities described in Senate Bill 1106 are completed, the power requirements of the project will be substantially in excess of the power to be made available by the project generating facilities.

With respect to power which might be generated along the aqueduct system as indicated in Bulletin 78, definite decisions as to its use have not been reached at this time, but will be the subject of further study. From a physical standpoint, it would be feasible to either sell the power that could be produced on the seaward slopes of the mountains in Southern California or to use it internally for project purposes by transmitting it back to pumping plants in the San Joaquin Valley. These alternative possibilities are being given intensive study by the department.

Considerable discussion has taken place on the subject of building steam plants to provide power for project pumping, but at this time we can only give generalized answers. One advantage of such a steam plant located at or near the load it serves, is that the investment in transmission lines, switchyards, and power transformers is minimized. Also minimized are the energy losses associated with these features. A disadvantage of early use of this operational scheme is the substantial increase in the State's capital investment and that it does not take advantage of the possibility of using low-cost offpeak power from the existing utility systems during the water demand build-up period when excess canal capacity makes operation with low-cost offpeak power possible. This latter possibility, the use of offpeak power, does, however, have the disadvantage that installed pumping capacity must be roughly double that under a continuous flow operation using steam power. This requirement for larger pumping capacities would also increase the State's early investment but possibly not to the same extent as would steam plant construction. Studies are now under way, also in co-operation with the various power agencies to determine the optimum plan of development. As the water demand approaches the full capacity of the canals, continuous pumping becomes necessary and the relative advantages of steam plants, either conventional or atomic, can be investigated under conditions then prevailing.

FURTHER POLICY STATEMENTS FROM THE DEPARTMENT

HONORABLE STEPHEN P. TEALE, *Chairman*
Senate Fact Finding Committee on Water
Room 4062, State Capitol
Sacramento 14, California

Attention: Mr. Lloyd Lapham, Staff Director

DEAR SENATOR TEALE: This is in reply to your letter of August 25, 1959, in which you asked a number of questions as a result of the department's presentation to your committee on August 21. Our answers to your questions follow.

Question 1: Any reports by the department which may have been rendered to the Legislature, recommending that any project costs for recreational use be nonreimbursable. What is your authority for such recommendation?
the department's proposal that the State assign

Answer: Initial expression to the Legislature of the department's proposal that the State assign nonreimbursability to the recreation function is presented as a "policy assumption" on page 108 of Bulletin No. 59, "Investigation of Upper Feather River Basin Development." The conclusions and recommendations in the report were of necessity at that time based on these policy assumptions.

Reference to the matter of nonreimbursability was made on page 25 of the director's statement to the meetings of the Subcommittee on Financial and Economic Policy for State Water Projects of the Joint Committee on Water Problems on August 26 and 27, 1957. On pages 19 and 20 of this statement, the policy of nonreimbursability adopted by the Legislature in the enactment of Chapter 2052 and the department's belief that such policy should be extended to projects constructed by the State were discussed.

In the department's statement to the May 15-16, 1958, meetings of the subcommittee rendered by Norman D. Sturm, it was recommended that costs allocated to fish and wildlife protection and enhancement and to public recreational developments and facilities associated with state water projects should be nonreimbursable.

Specific authorization is not normally construed as being a necessary requisite to the submission to the Legislature of recommendations by a department of the state government. With regard to such actions by this department, long-standing provisions of the Water Code require submission of recommendations based upon departmental studies. Recent additions to the code have established specific responsibilities of the department with regard to recreation which go beyond the recommendation stage.

Modification of the State Water Code to express the concept of nonreimbursability as related to recreation, based on the element of statewide interest, first appears in Section 12880, which was added by Statutes 1957, Chapter 2052. Specific reference is as follows:

> "(c) Grants in furtherance of a project may be made for the following purposes:
> "(1) For the part of the construction cost properly allocated to the preservation and enhancement of fish and wildlife incidental to the primary functions of the project.
> "(2) For the part of the construction cost properly allocated to recreational benefits of statewide interest that are incidental to the primary functions of the project."

Recently enacted legislation bearing on the subject at hand includes A.B. No. 140 (Chapter 2047) which adds Section 233 to the Water Code and S.B. No. 425 (Chapter 1752) which amends Section 12880 of, and adds additional sections to the Water Code. A.B. No. 140 requires that any plan for a state water project submitted by the Department of Water Resources to the Legislature must provide for any water or facilities necessary for public recreation and preservation and enhancement of fish and wildlife that the department determines to be feasible and justifiable in terms of statewide interest as a nonreimbursable cost of the project. In its amended form Section 12880 declares it is the policy of the State to provide financial assistance to public agencies for the construction of water projects to meet local requirements in which there is a statewide interest by making grants and loans and participating in construction and operation of projects as provided in the act. As was the case in the earlier version of Section 12880, issuance of monetary grants is limited to those construction costs which are properly allocable to the enhancement of fish and wildlife and to the recreational functions of statewide interest, both of which must be incidental to the primary functions of the project.

Question 2: Copy of Wheeler Ridge-Maricopa report prepared by the department in connection with the formation of the districts which the department may have reported on Repayment would be covered by this report (Copy of any material should be presented in 15 copies for committee members).

Answer: In accordance with statutory requirements, the department has participated in the recent formation of three water storage districts in Kern County, namely, Semitropic Water Storage District, Wheeler Ridge-Maricopa Water Storage District and Rosedale-Rio Bravo Water Storage District. In carrying out its responsibilities in this regard, the department has prepared a report for

each district. In these reports consideration was given to the matter of payment capacity for irrigation water. The initial printing of the report dealing with the Semitropic Water Storage District has been exhausted and it is temporarily unavailable. However, copies of the other two reports are transmitted herewith in the quantity requested.

Question 3: The results of studies by the department which show the repayment capacity for areas south of the Tehachapis which will receive water service from the facilities described in the Burns-Porter Act.

Answer: It is not clear whether the request refers to unit repayment capacity of individual crops or the repayment capacity of the service area as a whole. In connection with the preparation of Bulletin No. 78, studies were made of unit repayment capacity of various crops in the area south of the Tehachapi Mountains and of the overall ability of urban water users to pay the actual cost of Northern California water in order to determine economic demand for such water. You will note from Chapters II and VII of Bulletin No. 78, copies of which were previously supplied you, reference to the interplay among benefits, cost of water, and farm income in the determination of demand for agricultural water and between benefit and water cost in the determination of demand for urban water. Analysis of the part played by farm income from individual crops, through the medium of repayment capacity, in establishing demand for agricultural water is presented in appendices to Bulletin No. 78 being readied for release. Quantitative analyses of the financial capacity of individual potential contracting agencies for Northern California water with respect to their abilities to repay financial obligations of the aqueduct system have not yet been completed.

With respect to the repayment capacity of crops, you are aware that a value designated "residual income" which is defined as the amount remaining available for payment of water charges and to provide incentive to farm, was developed. This component of income is the net value after all farm production costs have been accounted for with the exception of those irrigation water costs associated with capital amortization and annual operation, maintenance and replacement expenses. Other costs involved in irrigation water use such as labor and amortization of investment in onfarm distribution systems are accounted for as a part of farm production costs.

Since farmers are essentially businessmen, they have reason to expect their enterprises to return a profit over and above the value of their labor earnings and return on investment. This element of profit is construed as necessary incentive to undertake the business of farming. It is to be expected that the required degree of motivation stemming from monetary considerations will vary among individuals in accordance with such factors as present economic status, size and type of enterprise, individual ability and initiative. Nevertheless, it does exist and must be recognized.

After the necessary requirements for profit or incentive have been met, the element of income still otherwise uncommitted is available, in its entirety, to pay for irrigation water. As such, it represents payment capacity which in the final analysis must be weighed against cost in establishing future economic demand for irrigation water.

It is recognized in Bulletin No. 78 that certain areas apparently would have adequate capacity for full repayment of financial obligations to the State, other areas would probably be marginal in this respect, and certain areas such as the Antelope Plain in Kern County would require special consideration, such as prolonged development period. The definitive program set forth in Senate Bill No. 1106 is now being evaluated with respect to the financial implications of water service contracts for the various potential service areas and for the various potential contracting agencies in Southern California. This department has taken steps to procure information necessary for such analyses, but as yet has not completed the studies. As soon as these data are available, we will be pleased to furnish them to you.

Question 4: With respect to the sale of bonds for project purposes, what studies has the department made with respect to the amount of interest which might be required if the entire authorized issue was to be sold at one time. If studies have been made for more than one interest rate, please include studies for the various rates.

Answer: The department has made no studies which contemplate sale *at one time* of the entire $1,750,000,000 general obligation bonds authorized under Senate Bill No. 1106, as there is not even a remote possibility that such a sale would be necessary.

Aside from the fact that the market could not accommodate a single offering of this magnitude, or even anything approaching it, there are many reasons why our studies have always been based on the firm assumption that sales of bonds for project construction would be spread over a number of years.

1. Under S.B. No. 1106, no bond funds may be used for construction of "state water facilities" so long as money in the California Water Fund is available therefor. Over time, the amount of bond money that will be required to complete construction of the "facilities" will depend upon the amount of capital available through the California Water Fund. While present estimates naturally are subject to a considerable margin of error, it is possible that increments to the California Water Fund between now and 1985, may be in the range of $300,000,000 to $500,000,000. Since the amount of the bond issue authorized was predicated on the amount needed to complete the "facilities" *if no funds were available from any other source* except the amount *now* in the California Water Fund, it follows that the total bonding requirement for such completion may be substantially less than $1,750,000,000.

It is true, of course, that to the extent California Water Fund money is used for construction of "facilities," an equivalent amount of bonds is reserved for later financing of construction of other units of the California Water Resources Development System. However, the prospect that the proceeds of all bonds now authorized may be needed ultimately for system development would hardly seem to justify anticipating the need by several decades and selling all the bonds at once.

The same general reasoning would apply even should events require that the entire $1,750,000,000 bond authorization be dedicated to completion of the "facilities." Construction of these works will progress over many years and it would be difficult indeed to make a rational case for selling all of the bonds at or near the outset of construction even if it were possible to do so.

2. A most important reason for scheduling bond sales as closely as possible to the anticipated need for funds is the interest factor. The time gap between capital expenditures for construction and the availability of substantial project revenues is considerable, as your committee knows. Sound financial management dictates that interest costs during this period be controlled as closely as possible and this necessitates a very well conceived bond marketing program.

3. Another persuasive reason for staggering bond sales is that of "averaging out" on interest cost. An historical review clearly demonstrates a considerable amplitude in the movement of interest rates even though the major underlying trend may be perceptibly in one direction.

In respect to that part of your question wherein you inquire if we have made studies for more than one interest rate, we have not, as yet, completed such studies for the program envisioned under S.B. No. 1106. However, the analysis of interest as a variable is included in a series of studies relative to S.B. No. 1106 which are scheduled and as soon as they have been completed, we shall be pleased to supply the information to your committee.

Question 5: A summary of reports available on various methods of cost allocation.

Answer: Numerous methods of cost allocation are susceptible of use. A few of these are in the "preferred" category; however, there is no one method which can be considered to be superior in *all* respects. Considerably different results accrue through use of the different methods as will be illustrated in a succeeding part of this presentation. Federal agencies such as the Bureau of Reclamation and Corps of Engineers have been engaged in cost allocation analyses for a number of years. The most complete treatises dealing with the underlying philosophy and variable methodology of cost allocation occur in the form of federal agency manuals and other governmental documents. Foremost among these are:

Reclamation Series 110, Project Planning, Part 116, Economic Investigations, Chapter 5, Cost Allocation, July 1959.

Proposed Practices for Economic Analysis of River Basin Projects, Prepared by the Subcommittee on Evaluation Standards, Report to the Interagency Committee on Water Resources, May 1958.

Manual, Corps of Engineers, United States Army, E.M. 1160-2-101, Cost Allocations for Multiple-purpose Projects.

Bureau of the Budget Circular No. A-47, 31 December 1952.

As yet, the Department of Water Resources has not completed any comparable publications to provide information to lay persons. To date we have only one publication (Bulletin 59 previously mentioned) which gives detailed treatment to the matter of cost allocation. This publication presents the method which the department considers most suitable for the allocation of storage facility costs and which is termed the separable costs-remaining benefits method.

In the case of the cost allocation of conveyance facilities, the proportionate use of facilities method may be preferable since such facilities are essentially single purpose and the primary problem is to distribute the costs among the various service areas and to the several types of use. The latter method was utilized in the investigation of alternative aqueduct systems to serve the San Joaquin Valley, the central coastal counties, and southern California, which is reported on by Bulletin No. 78. While the bulletin does not present a detailed discussion of the methodology involved, it is planned that this will be accomplished in one of the appendixes now nearing completion.

Question 6: A step-by-step analysis of the various methods of cost allocation and an analysis of one project by each of the various methods to indicate any difference in results which might accrue by reason of the various methods used.

Answer: Due to the complexity of presentation and the voluminous nature of a step-by-step analysis of all the various methods of cost allocation, we suggest for your consideration a somewhat more condensed treatment of this topic, which follows. We will first discuss the salient aspects of various methods on a relatively comparable and simplified basis and then present a detailed "step" analysis for four selected methods. The order of presentation which follows does not reflect relative significance or acceptability among the several methods.

The Proportionate Use of Facilities Method. This method has been recommended by the Engineers Joint Council, an organization of engineering and technical groups and societies. The allocation is determined by the proportion of the capacity of an

installation that is needed for each purpose, based on the concept that the cost of joint facilities should be allocated among the various purposes in proportion to their respective "use" of those facilities. "Use" is measured either in terms of the storage capacity provided for that purpose, or in terms of the quantity of water flow, or both. Power capacity depends not only upon storage space but also on head.

The Priority of Use Method. The Bureau of Reclamation has used the method of priority of use, but has now abandoned it. Under this method, one purpose is assigned highest priority, second priority to another purpose, and so on. The first priority purpose bears all the joint costs and the other purposes only bear their incremental costs. If the first priority use is a nonreimbursable item, the taxpayers bear the bulk of the costs.

Benefit Method. This method has had a great deal of appeal to students of the problem, but has not been used in its pure form. Joint costs are allocated in proportion to benefits. Direct costs for each purpose are subtracted from the respective benefit, and the remaining benefits form the allocation base.

The Separate Projects Method. In this method the costs are allocated in proportion to the costs of obtaining equivalent benefits by separate single purpose projects for each purpose. In one variation, all costs are considered as joint costs and allocated in that manner. In a second variation, direct costs are identified and the costs of joint facilities are distributed in proportion to the difference between the estimated cost of the alternative single purpose project for each purpose and the direct cost of that purpose. The third variation is similar to the second one, with the exception that separate (incremental costs) are used instead of direct costs.

The Alternative Justifiable Expenditure Method. The costs of joint facilities are allocated in direct proportion to the "remaining alternative justified investment" for each purpose of the project. The investment amount is the smaller of either (a) the cost of the most economical alternative single purpose project which will produce equivalent benefits less any direct costs or (b) the total value of benefits estimated from that purpose less any direct costs.

The Vendibility Method. Under this method, costs are allocated in proportion to the market prices of the project services. Where market prices are equivalent to per-unit benefits, the method is similar to the benefits method.

The Incremental Method. All joint costs are allocated to the primary function of the project. Separable costs are allocated to their respective purposes.

The Direct Cost Method. This method assigns direct costs to their respective purposes and the costs of joint facilities are allocated to the primary project purpose.

The Equal Apportionment Method. Two variations of this method are used. In one, separable costs, and in the other, direct costs, are assigned to their respective purpose. The remainder, which is joint costs or the costs of joint facilities, depending on the variation used, is allocated equally among the principal purposes of the project.

None of the methods described above is entirely satisfactory in meeting all the following principles of cost allocation:

1. Costs assigned to any project purpose will be not less than the separable costs of that project.

2. The total costs allocated to all project purposes will equal the total project cost.

3. Total costs assigned to a particular purpose (for repayment purposes) will not exceed the value of the benefits obtained from that purpose.

Separable Costs-Remaining Benefits Method. This method is a modification of the alternative justifiable expenditure method, assigning separable instead of direct costs to each purpose. The purpose is to assign to each objective as a minimum its separable costs, and as a maximum not to exceed either the benefits of the purpose or the costs of providing the same benefits by the most economical alternative. Within these minimum and maximum limits a proportional sharing of the benefits from multipurpose projects will occur.

The four methods of cost allocation which in general are considered most acceptable are the Separable Costs-Remaining Benefits Method, the Alternative Justifiable Expenditure Method, the Proportionate Use of Facilities Method, and the Priority of Use Method. A comparison of the procedural steps involved in these methods is presented hereinafter.

For purposes of illustrating the variance in results which different methods of cost allocation may be expected to yield, also presented herewith are comparisons of the results achieved by application of four of the above listed methods to one of the multipurpose reservoirs in the Upper Feather River Basin. It is to be expected that allocation by the remaining methods would give results falling within the extremes in variation established by the four methods.

For your convenience the results of these methods are summarized below:

Method	*Total cost*	*Irrigation allocation*	*Recreation allocation*
Use of facilities	$1,900,000	$1,407,900	$492,100
Priority of use (First priority to irrigation)	1,900,000	1,645,000	255,000
(First priority to recreation)	1,900,000	977,100	922,900
Alternative justifiable expenditure	1,900,000	1,283,500	616,500
Separable costs—remaining benefits	1,900,000	1,311,050	588,950

GRIZZLY VALLEY PROJECT

Allocation Table 1—Separable Cost-Remaining Benefits Method

Item	*Irrigation*	*Recreation*	*Total*
1. Annual benefits	$134,100	$59,400	$193,500
2. Single-purpose alternative	(1,645,000)	(922,900)	
Annual costs	82,800	57,000	
3. Justified annual investment	82,800	57,000	
4. Separable costs	977,100	255,000	1,232,100
Annual costs	50,000	24,200	
5. Remaining benefits	32,800	32,800	65,600
Percent distribution	50.0	50.0	100.0
6. Remaining costs to be allocated	333,950	333,950	667,900
Annual costs	16,400	16,400	32,800
7. Allocated annual costs	66,400	40,600	107,000
8. Allocated capital costs	1,311,050	588,950	1,900,000

Allocation Table 2—Alternative Justifiable Expenditure Method

Item	*Irrigation*	*Recreation*	*Total*
1. Annual benefits	$134,100	$59,400	$193,500
2. Single-purpose alternative	(1,645,000)	(922,900)	
Annual costs	82,800	57,000	
3. Justified annual investment	82,800	57,000	
4. Specific costs	756,900	255,000	1,011,900
Annual costs	35,100	24,200	59,300
5. Remaining alternative	47,700	32,800	
6. Percent distribution	59.3	40.7	100.0
7. Total joint costs to be allocated	526,600	361,500	888,100
Annual costs	28,300	19,400	47,700
8. Allocated annual costs	63,400	43,600	107,000
9. Allocated capital costs	1,283,500	616,500	1,900,000

Allocation Table 3—Proportionate Use of Facilities Method

Item	*Irrigation*	*Recreation*	*Total*
1. Annual benefits	$134,100	$59,400	$193,500
2. Single-purpose alternative	(1,645,000)	(922,900)	
Annual costs	82,800	57,000	
3. Justified annual investment	82,800	57,000	
4. Separable costs	977,100	255,000	1,232,100
Annual costs	50,000	24,200	74,200
5. Percentage distribution—residual costs [a]	64.5	35.5	100.0
6. Allocation of residual costs	430,800	237,100	667,900
Annual costs	21,200	11,600	32,800
7. Allocated annual costs	71,200	35,800	107,000
8. Allocated capital costs	1,407,900	492,100	1,900,000

[a] Distribution is based on the ratio of storage required for each purpose with irrigation requiring capacity of 80,000 acre-feet and recreation requiring capacity of 41,000 acre-feet—derived ratio; irrigation = 64.5 percent; recreation = 35.5 percent.

Allocation Table 4a—Priority of Use Method (first priority to irrigation)

Item	*Irrigation*	*Recreation*	*Total*
1. Single-purpose alternative	$1,645,000	$922,900	
2. Allocation of joint costs	888,100		$888,100
3. Specific costs	756,900	255,000	1,011,900
4. Final allocation	1,645,000	255,000	1,900,000

Allocation Table 4b—Priority of Use Method (first priority to recreation)

Item	*Irrigation*	*Recreation*	*Total*
1. Single-purpose alternative	$1,645,000	$922,900	
2. Allocation of joint costs		667,900 [a]	$667,900 [a]
3. Specific costs	977,100	255,000	1,232,100
4. Final allocation	977,100	922,900	1,900,000

[a] The final allocation to recreation cannot exceed its single-purpose alternative costs and since the recreation benefits could be derived from a reservoir costing $221,000 less than the required irrigation reservoir, joint costs assigned to recreation reflect the smaller reservoir cost.

Question 7: Are there areas in the Antelope-Mojave Valley which will be served irrigation water?

What does the department's study show with respect to the possibility of serving agricultural water to the Antelope-Mojave area?

Answer: As you know, during the period 1956 to 1959, this department made extensive studies throughout the Southern California area in connection with the preparation of Bulletin No. 78, "Preliminary Summary Report on Investigation of Alternative Aqueduct Systems to Serve Southern California," which studies included projections of the economic demand for water in this area. With respect to the Antelope Valley-Mojave River area, an independent analysis was made of the probable future economic development therein by the firm of Booz, Allen and Hamilton, Management Consultants, the results of which analysis have been published as Appendix A of Bulletin No. 78 entitled "Long Range Economic Potential of the Antelope Valley-Mojave River Basin."

The findings of Booz, Allen and Hamilton together with independent evaluations made by this department resulted in the conclusion that crops climatically adapted to the Antelope Valley-Mojave River area could not afford to pay the full cost of importing Northern California water to this area. Further, it was concluded that with the passage of time the better agricultural lands in the vicinity of the main aqueduct would be developed to urban and suburban purposes. Since the estimates of economic demand for water from the San Joaquin Valley-Southern California Aqueduct System and the sizing of this system were based upon the assumption that the cost of water would be repaid by the water users and since no assumption was made as to local subsidy within the Antelope Valley-Mojave River Service area, deliveries of agricultural water were not postulated for this area.

You will recognize that the State has not as yet adopted a pricing policy with respect to water

COMPARISON OF PROCEDURAL STEPS INVOLVED IN SEVERAL METHODS OF COST ALLOCATION

Separable Costs-Remaining Benefits Method	*Alternative Justifiable Expenditure Method*
(1) The benefits of each purpose are estimated.	(1) The benefits of each purpose are estimated.
(2) The alternative costs of single-purpose projects to obtain the same benefits are estimated.	(2) The alternative costs of single-purpose projects to obtain the same benefits are estimated.
(3) The separable cost of each purpose is determined. (Separable cost for a single purpose is the difference between the total cost of the multiple-purpose project and the cost of the project with the purpose omitted.)	(3) The specific cost of each purpose within the multiple-purpose project is determined. (Specific costs are those components within the total cost of the multiple purpose project which are specifically and solely assignable to one particular purpose.)
(4) The separable cost of each purpose in the multiple-purpose project is deducted from the lesser of each purpose's benefits or alternative cost. (The residual amount is termed the "remaining benefit" of each purpose and is next considered in Step 6.) The lesser figure is used since alternative cost is used in this method only if it represents a justifiable expenditure, that is, if it does not exceed the benefits.	(4) The specific cost of each purpose in the multiple-purpose project is deducted from the lesser of that purpose's benefits or alternative cost. (The residual amount is termed the "remainder" for each purpose and is next considered in Step 6.) The lesser figure is used since alternative cost is used in this method only if it represents a justifiable expenditure, that is, if it does not exceed the benefits.
(5) From total cost of project deduct the sum of all separable costs to determine residual costs.	(5) From total cost of project deduct the total of all specific costs to determine total joint costs.
(6) Residual costs are distributed among purposes in the same proportion as prevails among the remaining benefits found in Step 4.	(6) Joint costs of the multiple-purpose project are distributed among purposes in the same proportion as prevails among the remainders found in Step 4.
(7) To determine the cost allocated to each purpose, add the separable and distributed costs for each purpose and, in the case of power, subtract from that sum the amount of taxes foregone which was used in computing power costs under Steps 2 and 3 above.	(7) Allocation of project cost is determined in the same manner as under the separable costs-remaining benefits method.

COMPARISON OF PROCEDURAL STEPS INVOLVED IN SEVERAL METHODS OF COST ALLOCATION

Proportionate Use of Facilities Method	*Priority of Use Method*
(1) Estimate the use which will be made by each purpose of joint project facilities on a basis which is comparable and appropriate for the purposes concerned, such as capacity requirement or energy consumption.	(1) The benefits of each purpose are estimated.
(2) Determine the separable cost of each purpose in terms of the difference between total cost with and without the purpose.	(2) List the functions to be served by the joint project facilities on the basis of a descending order of priority reflecting the relative weight of benefits.
(3) From the total cost of the facility, deduct total separable costs to determine residual costs.	(3) Estimate the specific cost of each purpose in terms of the components of total cost of the multiple-purpose facilities assignable solely to one purpose.
(4) Distribute the residual costs among purposes in proportion to the degrees of use of the joint facilities estimated in Step 1.	(4) Estimate the cost of the most economic alternative.
(5) Determine the total cost allocated to each purpose by adding the separable and distributed residual costs.	(5) Determine the portion of joint costs assignable to the top priority purpose by using the lesser of two amounts: (a) the benefits less specific costs assigned to that purpose, or (b) the cost of the most economic alternative, less specific costs assigned to that purpose.
	(6) Successively apportion the remaining joint costs among purposes in order of established priority until all joint costs are accounted for, using the procedure outlined in Step 5.
	(7) Determine the total cost allocated to each purpose by adding the specific and distributed joint costs. (While each purpose will bear not less than its specific cost, one or more purposes of least priority may bear no share of joint cost.)

which will be delivered from the San Joaquin Valley-Southern California Aqueduct System. Nor has the cost recovery practice that will be utilized within the Antelope Valley-Mojave River area with respect to meeting financial obligations to the State been finally determined. For example, were the local contracting agencies themselves to set a price differential between agricultural service and municipal and industrial service which would bring the net price to agriculture within the ability to pay, then this of course would change the estimates presented in Bulletin No. 78.

Further, depending on the method of sewage disposal adopted by urban and suburban entities in the Antelope Valley-Mojave River area, it is possible that return flow entering ground water bodies in the area would be available for capture and reuse by agricultural water users. It is believed, however, that this occurrence in itself would not to any great degree stimulate agricultural development.

Question 8: Studies which the department may have made which show the comparisons between the amount of power thereby produced and thereby required for project purposes.

Answer: The tabulation below shows the power capacity and annual energy required for project purposes and the power capacity and annual energy that will be produced by the project for each fifth year through 1985. Figures of capacity and energy are all at the points of generation or the points of use before adjustment for losses in transmission and transformation between those points.

Project power generation includes that produced by the main Oroville Power Plant and the Thermalito Afterbay Power Plant on the Feather River, both of which will begin operation in 1968. Included also is the power output of five aqueduct power recovery plants which, beginning in 1971, will produce power from the descending water after it has been lifted over intervening mountains. All project power generation facilities will be operated principally during the hours that the California power load generally is at its maximum. These are called the "on peak" hours during which power capacity has its greatest benefit since during periods of lesser power load, or "off peak" hours, there is usually more steam power generating capacity available than the area power load requires. Not included in the tabulation is a small amount of "nondependable" capacity which is power capacity that is not always available and consequently has relatively low value.

It is planned that Oroville and Thermalito Power Plants will be operated partly as "pumped storage" plants which means that some of the water released to produce valuable "onpeak" power will later be pumped back into the reservoir with low-cost "offpeak" power for release later to produce more "onpeak" power. The capacity and energy output of Oroville and Thermalito increases as the demand for power develops. The output of the power recovery plants increases in proportion to the increase in water deliveries to the south and will be used to supply the "onpeak" power requirements of the associated pumping plants under the plan of operation on which the figures in the tabulation are based.

The project power use figures show all the pumping energy requirements at the pumping plants and for the Oroville-Thermalito pumped storage operation. The "onpeak" pumping capacity requirements are shown but "offpeak" pumping capacity required in addition to the "onpeak" capacity is not shown in the tabulation.

	Project Power Generation		*Project Power Use*	
Year	*Capacity k.w.*	*Energy k.w.h.*	*Capacity k.w.*	*Energy k.w.h.*
1965	0	0	8,000	82,000,000
1970	463,000	1,962,000,000	39,000	232,000,000
1975	894,000	3,567,000,000	472,000	2,995,000,000
1980	1,058,000	4,052,000,000	726,000	5,427,000,000
1985	1,137,000	4,636,000,000	967,000	7,788,000,000

Since Questions 9 and 11 are closely related, and since items in fact overlap in certain instances, they are considered together in providing the information requested.

Question 9: Any citations in the California Water Code or any other provisions of state law which set forth state policy with regard to reimbursability or pricing with respect to state water projects. The citations should indicate whether or not the cost for specific uses must be reimbursable by those receiving the specific benefit furnished or whether or not the requirement applies only to the total project cost without regard to individual uses.

Question 11: Indicate any provisions of the Water Code or any other provisions of the state law which would be required to be included in or would govern, any contracts which the state might enter into for the sale of water or power or other services from state projects. It is suggested that the Department collaborate with the Legislative Counsel before submitting this answer to the committee.

Answer: As suggested by the committee, this question was reviewed with a representative of the Legislative Counsel's office prior to formulation of the answer thereto, and it is believed that the following answer is in accord with the views of the Legislative Counsel's office.

It should be noted at the outset that the major water projects now authorized for state construction or participation are authorized as units of the state Central Valley Project. These are the Feather River Project, including the Delta diversion facilities, the San Joaquin Valley-Southern California Aqueduct and the South Bay Aqueduct (Water Code, Section 11260), the North Bay Aqueduct (Water Code, Section 11270), Black Butte Dam and Reservoir (Water Code, Section 11276), and New Hogan Dam and Reservoir (Water Code, Section 11252). All such projects are governed by the provisions of the State's Central Valley Project Act, as codified in Part 3 of Division 6 of the Water Code.

In addition, Senate Bill No. 1106 (Chapter 1762, Statutes of 1959), if approved by the people at the general election in November 1960, also will require that projects financed thereunder shall be acquired, constructed, operated, and maintained pursuant to the provisions of the Water Code governing the Central Valley Project. Therefore the provisions of Part 3 of Division 6 of the Water Code will be applicable to the projects to be financed under Senate Bill No. 1106, insofar as they are not inconsistent with other specific provisions of Senate Bill No. 1106.

Accordingly, the following sections of the Water Code are deemed applicable with respect to contracts which the State may execute for furnishing water or hydroelectric power or other services from water projects to be constructed and operated by this department:

"11102. 'State agency' includes any irrigation district, reclamation district, municipal utility district, public utility district, water district, water storage district and any public or municipal corporation, political subdivision, district, State agency or authority now or hereafter organized under and by virtue of the laws of the State now in effect or hereafter enacted.

"11135. Any State agency may advance or contribute money, rights of way, labor, materials, and any other property for the contruction, operation, or maintenance of the project or any unit thereof.

"11139. The department may enter into an agreement with any state agency to repay any money or the value of any rights of way, labor, materials, or other property advanced or contributed; but no repayment therefor shall be made until all obligations issued by the department for the construction of the project have been fully redeemed and paid, and then only out of the revenues received from the operation of the project.

"11140. After all bonds issued have been fully redeemed and paid, the department may continue to collect revenues from the use and operation of the project for the purpose of reimbursing any state agency for any expenditures made by it and for the purpose of repayment of any amount the department shall have agreed to repay for money, rights of way, labor, materials, or other property advanced or contributed for the construction of the project or unit thereof.

"11451. The department shall have full charge and control of the construction, operation, and maintenance of the project and the collection of all rates, charges and revenues from it.

"11453. The collection of rates, charges, and revenues shall be continued as provided in this part until all bonds issued are fully redeemed and paid.

"11454. Under such regulations and upon such terms, limitations, and conditions as it prescribes, the department may do any of the following:

"(a) Fix and establish the prices, rates, and charges at which the resources and facilities made available by the project shall be sold and disposed of.

"(b) Enter into contracts and agreements and do any and all things which in its judgment are necessary, convenient, or expedient for the accomplishment of the purposes and objects of this part.

"11455. The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and which will provide at all times sufficient funds for redemption of all bonds and payment of interest thereon, as and when such costs and charges become due and payable.

"11460. In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein.

"11461. In no other way than by purchase or otherwise as provided in this part shall water rights of a watershed, area, or the inhabitants be impaired or curtailed by the department, but the provisions of this article shall be strictly limited to the acts and proceedings of the department, as such, and shall not apply to any persons or state agencies.

"11462. The provisions of this article shall not be so construed as to create any new property rights other than against the department as provided in this part or to require the department to furnish to any person without adequate compensation therefor any water made available by the construction of any works by the department.

"11463. In the construction and operation by the department of any project under the provisions of this part, no exchange of the water of any watershed or area for the water of any other watershed or area may be made by the department unless the water requirements of the watershed or area in which the exchange is made are first and at all times met and satisfied to the extent that the requirements would have been met were the exchange not made, and no right to the use of water shall be gained or lost by reason of any such exchange.

"11464. No water right, reservoir, conduit, or facility for the generation, production, transmission, or distribution of electric power, acquired by the department shall ever be sold, granted, or

conveyed by the department so that the department thereby is divested of the title to and ownership of it.

"11465. The department shall not make any change, alteration, or revision of any rates, prices, or charges established by any contract entered into pursuant to this part except as provided by the contract.

"11560. The department shall construct the project when, in its judgment, appropriations, contributions, and revenues from all sources which are available or which will be made or become available upon, during, after, or before construction of the project, including contracts which the department may negotiate and enter into with responsible persons, public or private agencies, the United States, and state agencies for the sale or disposal of water, water flow, the use of water, water storage, electric power, or other resources and facilities to be made available by the project, are or will be available from such sources in such amounts and at such times as will afford funds sufficient to pay and discharge as and when the same become due and payable all cost and expense incurred prior to construction, and all cost and expense of construction, operation, and maintenance of the project, together with necessary repairs and replacements thereto, including funds sufficient to meet and pay, as and when they become due and payable, all bonds, with interest accruing thereon, within a period of not to exceed 70 years after the beginning of the construction of the project.

"11625. Any state agency, mutual water company, political subdivision, or other entity or organization may enter into contracts with the department for the purchase or for the use of water, waterflow, water storage, electric power, or other resources and facilities made available by the project.

"11626. In entering into and awarding contracts, in case of equal or equivalent offers, including consideration of the cost of construction, operation, and maintenance of the necessary lines, plants, and other works to deliver the commodity or service which is to be delivered under the contracts, the department shall grant preference to state agencies or other organizations not organized or doing business for profit but primarily for the purpose of supplying water or electric power to their own citizens or members.

"11627. Every contract made by the department for the sale of water, use of water, water storage, electric power, or other service shall provide that, in the event of any default in the payment of any money specified in the contract to be paid to the department, the department may, upon such notice as it determines, cease to furnish or deliver water, use of water, water storage, electric power, or other service under the contract.

"11628. The act of the department in ceasing on any default to furnish or deliver water, use of water, water storage, electric power, or other service under a contract shall not deprive the department of or limit any remedy provided by the contract or by law for the recovery of money due or which may become due under the contract.

"11650. In case of the award by the department of any contract or lease to any state agency for the furnishing of water, the use of water, water storage, electric power, or other service, upon demand made therefor by such state agency, the department shall construct, acquire, or otherwise provide the necessary works and facilities for transmitting the water, electric power, or other service to a central point from which the water, electric power, or other service may be most conveniently distributed within the territory to be served under the contract or lease.

"11651. The governing body charged with the levying of taxes or assessment in any state agency which contracts to purchase from the department any water, use of water, water storage, electric power, or other service shall provide for the punctual payment to the department of all amounts which become due under the contract.

"11652. The governing body shall, whenever necessary, levy upon all property in the state agency not exempt from taxation, a tax or assessment sufficient to provide for all payments under the contract then due or to become due within the then current fiscal year.

"11653. All officers of any state agency charged with the collection of the taxes or assessments levied by the state agency shall enforce and collect all taxes or assessments levied or assessed for the purpose of providing payment of the money due or to become due under a contract as provided in this article.

"11654. All money collected for taxes or assessments under this article shall be kept in a separate fund by the treasurer or other officer of the state agency charged with the safekeeping and disbursement of funds of the state agency, and, upon the written demand of the department, the treasurer or other officer shall pay over to the department all such money in his possession or control and the money shall be applied by the department to the satisfaction of the amount due under the contract.

"11655. In the event of failure, neglect, or refusal of any officer of any state agency to levy any tax or assessment necessary to provide payment by the state agency under any contract with the department, to enforce or to collect the tax or assessment, or to pay over to the department any money collected on the tax or assessment the department may take such action in a court of competent jurisdiction as it deems necessary to compel the performance in their proper sequence of all duties relating to the levying and collection of the taxes or assessments and the payment of

the money collected therefrom to the department.

"11656. The use by the department of any remedy specified in this article for the enforcement of any contract made with it is not exclusive and shall not deprive the department of, or limit the application of, any other remedy provided by law.

"11661. In addition to the powers conferred by law, and not in derogation or in limitation thereof, any state agency may enter into and execute appropriate contracts with the department for any and all the purposes and objects of this part.

"11662. Any State agency may comply with the terms, provisions, and conditions of any contract entered into by it pursuant to this article.

"11663. Any State agency may, in or pursuant to a contract with the department, do any or all of the following:

"(a) Provide in the contract for the segregation and allocation of any or all revenues received by the state agency from the sale, use or distribution of any water, use of water, electric power, or other facilities to be received, used, or distributed by the state agency under the contract.

"(b) Pursuant to the contract, segregate, allocate, and devote such revenues solely for the purpose of making payments to the department for water, use of water, electric power, or other facilities to be received, used, or distributed under the contract.

"(c) Provide in the contract for the pledge of any or all such revenues for the purpose of securing to the department any payments which may become due under the contract.

"(d) Pursuant to the contract, pledge such revenues for the purpose of securing to the department any payments which may become due under the contract.

"(e) Promise and agree to establish and maintain a special account to be created in and from its general fund or other appropriate fund.

"(f) Pursuant to subdivision (e) create, establish, and maintain such special account.

"11664. All funds accruing to a special account established pursuant to the next preceding section, or deposited therein, in compliance with the terms and provisions of any contract with the department constitute a trust fund for the purpose of making payments to the department as provided in the contract.

"11670. Any contract or lease made by the department with any person, other than a state agency, providing for the furnishing by the department of water, the use of water, water storage, electric power, or other service for resale shall be subject to cancellation by the department upon five years' notice, and such a contract or lease shall be so canceled in whole or in part whenever the State or any financially responsible state agency makes application for the water, use of water, water storage, electric power, or other service, or any part thereof, covered by the contract or lease and enters into a contract or lease binding itself to take the water, use of water, water storage, electric power, or other service or any part thereof, and pay for it at a rate or price at least equal to that specified in the contract or lease to be canceled and for a period at least equal to the unexpired portion of the term of such contract or lease.

"11671. The department shall not cancel any contract or lease under the next preceding section unless and until it first determines and assures itself that notwithstanding the cancellation, it will receive and be paid a total revenue or consideration at least equal to that which would be received by it were the contract or lease not canceled, and within the unexpired portion of the term of the contract or lease."

In summary, the major provisions of the Central Valley Project Act, as codified in Part 3 of Division 6 of the Water Code, with respect to reimbursability of project costs and pricing, provide that: (1) The Department of Water Resources has general authority to fix and establish prices, rates and charges at which the resources and facilities made available by the project shall be sold and disposed of, and shall continue the collection of rates, charges, and revenues at least until all bonds issued for the projects are fully redeemed and paid (Sections 11454, 11453) and until all advances made under contract by state agencies are repaid (Section 11140). (2) The department is required to enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue which will afford sufficient funds to pay all costs of operation and maintenance, together with necessary repairs and replacements, and which will provide at all times sufficient funds for redemption of all bonds and payment of interest thereon, as such costs and charges become due (Section 11455). (3) The department may not alter rates, prices or charges except as provided by contract (Section 11465). (4) While preference is granted to state agencies and other public organizations in the right to contract for delivery of water or power, preferential rates are not authorized (Section 11626). The above sections indicate that reimbursement of project costs from project revenues is required without regard to individual uses.

The provisions of the Central Valley Project Act, as codified in Part 3 of Division 6 of the Water Code, which govern contracts with the State for water or power from state projects, in addition to the above provisions with respect to pricing, provide that: (1) The Watershed Protection Provisions govern (Sections 11460-11463). (2) State agencies and nonprofit organizations, in case of equal or equivalent offers, are given preference in the right to contract for water, power and other services (Sections

11625-11626). (3) Contracts with other than preferential agencies are subject to termination, upon five years' notice, in the event equivalent revenues can be received by delivery to preferred agencies (Section 11670). (4) The department may terminate services in event of default (Section 11627), exercise any other remedy provided by the contract or by law for the recovery of money due under the contract (Section 11628), bring court action to require a contracting agency to levy taxes or assessments needed for meeting payments due under a contract (Section 11655), or pursue any other remedy provided by the law for enforcement of the contract (Section 11656). (5) With respect to contracts with state agencies, the department is required upon demand of the agencies to construct works and facilities for transmitting the water, electric power, or other service to a central point from which distribution may be conveniently made (Section 11650).

With respect to Senate Bill No. 1106 (Ch. 1762, Stats. of 1959), in addition to the provision therein that makes applicable generally the provisions of the Water Code relating to the Central Valley Project, the bill further specifically provides:

> "The Department, subject to such terms and conditions as may be prescribed by the Legislature, shall enter into contracts for the sale, delivery or use of water or power, or for other services and facilities, made available by the State Water Resources Development System with public or private corporations, entities, or individuals. Such contract shall not be impaired by subsequent acts of the Legislature during the time when any of the bonds authorized herein are outstanding and the State may sue and be sued with respect to said contract. Said contracts shall be for a stated term and, insofar as practicable and feasible, for the full term of the life of the general obligation bonds issued under this chapter and each such contract shall recite (i) that it is entered into for the direct benefit of the holders and owners of all general obligation bonds issued under this chapter, and (ii) that the income and revenues derived from such contracts are pledged to the purposes and in the priority herein set forth. Such pledge of revenues as herein set forth is hereby declared to be and shall constitute an essential term of this chapter and upon its ratification by the people of the State of California shall be binding upon the State so long as any general obligation bonds authorized hereunder are outstanding and unpaid. Such income and revenues, subject to the priorities herein set forth, shall constitute additional security for all of the bonds authorized and issued hereunder . . ."

Question 10: Please indicate the various sections and numbers of employees involved in the Department of Water Resources which have been working on the matter of cost allocation and the supervisor primarily responsible for this function. Please also indicate with what other agencies this matter of cost allocation has been a subject of discussion.

Answer: Both the Division of Resources Planning and the Division of Design and Construction at the headquarters office and in the Southern California District Office make cost allocation studies of the projects which they are investigating. Coordination of all such allocation studies and the establishment of procedures and standards is the responsibility of the Department's Chief Economist. Mr. Norman Sturm, who also is Supervisor of the Economics Unit, which is staffed by twenty economists of various civil service grades. In practice much of the detailed work of cost allocation is done by engineers and economists working together. Consequently, two economists are permanently assigned to the Design and Construction Branch in the Southern California District Office and five are permanently assigned to the Marketing Section of the Division of Design and Construction in Sacramento.

The United States Bureau of Reclamation and the Corps of Engineers are the two other agencies primarily concerned with cost allocations of major water conservation projects. Both of these federal agencies make available the results of their cost allocation studies and outlines and manuals of procedure. All of this material is available to the Department of Water Resources which also maintains close working contact with the offices of the two federal agencies in Sacramento. Furthermore, certain of the department's personnel working in the field of cost allocation have had previous experience with the federal agencies.

At the present time an inter-agency committee consisting of representatives of the Corps of Engineers, the Bureau of Reclamation and the Department of Water Resources is conducting cost allocation studies which will result in determination of and agreement upon the amount of the federal contribution toward the construction of Oroville Dam and Reservoir in the interest of flood control.

The department also is working with the Corps of Engineers and the Bureau of Reclamation on allocations of costs of Black Butte and New Hogan Dams and Reservoirs.

The foregoing answers reflect the courses of studies presently under way and should not be considered as final determinations on any of the material presented. We are attempting to devote our major effort toward bringing all of these studies to a rapid conclusion so that final answers or recommendations can be given on policies regarding cost allocations, pricing, contract terms, and related matters. We respectfully suggest that the completed studies will be of more value to your committee than the material which is requested and presented as those studies are in midcourse. We recognize that it is imperative that the answers and recommendations be forthcoming promptly. We are striving to make them available in sufficient time for use by your committee in arriving at its determinations.

Very truly yours,

(signed) HARVEY O. BANKS, Director

HARVEY O. BANKS, October 1, 1959

HONORABLE STEPHEN P. TEALE, *Chairman*
Senate Fact Finding Committee on Water
Sacramento 14, California

DEAR SENATOR TEALE: Our comments herein set forth are submitted in reply to your letter of August 26, 1959.

The first part of your letter to be considered is the third paragraph thereof which reads as follows:

> "So at some future time it would seem that excess revenues from the facilities would accumulate by virtue of the water fund contributions to the project. Would you please comment in reply to this point."

In order to have a frame of reference for our comments, we have taken the liberty of restating this paragraph in the form of a question.

Question: Will there be, at some future time, "excess" project revenues resulting from the fact that the State water facilities will be financed, in part, by money from the California Water Fund?

Answer: There is no direct relationship between a particular source of capital used in constructing the works and revenues from the instant facilities nor, for that matter, with respect to any project contemplated. The State's capital investment is the total cost of a facility including whatever amount must be capitalized both for interest during construction and for interest and other annual costs on any excess capacity initially built into the facility which costs must be met by the State until that capacity is contracted for by a using agency. It is immaterial in the rate making process whether a dollar of capital investment required to be recovered came from the California Water Fund or from the proceeds of bond sales since each is on a common basis insofar as repayment with interest is concerned. Revenues cannot be "ear-marked" in accordance with the original source of funds.

Based on the foregoing then, there will not be "excess" project revenue directly attributable to the fact that the State Water Facilities will be financed in part by money from the California Water Fund. Furthermore, as will be discussed in more detail later herein, the disposition of revenues is specified in S.B. No. 1106 without regard to the source of the funds invested.

Question: (Paragraph 4, page 1.) In your bookkeeping on the facilities do you plan to state separately the revenues attributable to the expenditures from the water fund?

Answer: As noted in our answer to the previous question, no revenues can be attributed specifically to the California Water Fund or to any other particular source of capital for construction.

However, the accounting system used for the facilities will provide means for ascertaining the capital input from respective sources such as the California Water Fund, the interest due thereon, the application of revenues thereto, etc.

Question: (Paragraph 1, page 2.) (Again we have rephrased your statement in the form of a question.) Will revenues (attributable to Water Fund expenditures) first pass through the General Fund and then by their nature being surplus to bond service requirements and operating, maintenance and replacement costs be deposited back in the Water Fund?

Answer: We shall direct our reply only to the point of *total revenue flow* since, again referring to the discussion of Question 1 above, revenues cannot be specifically attributed to any particular source of capital.

With respect to the application of revenues, Section 12937 (b) of S.B. No. 1106 provides in part as follows:

> "All revenues derived from the sale, delivery or use of water or power, and all other income or revenue, derived by the State, from the State Water Resources Development System shall be deposited in a special account or accounts in the California Water Resources Development Bond Fund and shall be accounted for and used annually only for the following purposes and in the following order, to wit:
>
> "1. The payment of the reasonable costs of the annual maintenance and operation of the State Water Resources Development System and the replacement of any parts thereof.
>
> "2. The annual payment of the principal of and interest on the bonds issued pursuant to this chapter.
>
> "3. Transfer to the California Water Fund as reimbursement for funds utilized from said fund for construction of the State Water Resources Development System.
>
> "4. Any surplus revenues in each year not required for the purpose specified in the foregoing subparagraphs (1), (2), and (3) of this subdivision (b) of Section 12937 and not required to be transferred to the General Fund pursuant to subparagraph (a) of this Section 12937, shall, during the time any of the bonds authorized herein are outstanding, be deposited in a special account in the California Water Resources Development Bond Fund and are hereby appropriated for use and shall be available for expenditure by the department for acquisition and construction of the State Water Resources Development System as described in Section 12931 hereof."

It is quite clear that project revenues do not pass first through the General Fund, but instead are to be deposited directly into the California Water Resources Bond Fund.

It is the case, as you state, that annual revenues in excess of current expenses and *bonded* debt service flow next to the California Water Fund as repayment for funds previously utilized therefrom. In accordance with the principle that the State's full reimbursable investment is to be repaid with interest, it is our view that transfers to the California Water Fund pursuant to Section 12927 (b)

(3) would include an appropriate amount for interest, which interest will be included in revenues derived from rates charged for project services.

Question: (Paragraphs 2 and 3, page 2.) At what point of time could they (revenues) be identified as surplus?

Answer: In terms of our previous answer, revenues would be "surplus" (or, to be more specific, available for transfer to the California Water Fund) after the *annual* requirements of the higher priority purposes have been taken care of in any one year. The point in time where an actual cash transfer can be made from the bond fund to the California Water Fund is difficult to predict but it certainly will not occur until system revenues have developed substantially, which will not be until the mid-1970's at the earliest.

Question: (Paragraphs 3 and 4, page 2.) Is it your understanding as it is mine that these "surplus revenues" are available only for expenditures on the facilities unless the Legislature directs otherwise? They could not, could they, be expended on other features of the California Water Development System?

Answer: It is our understanding that any money in the California Water Fund must be used for construction and completion of the state water facilities described in Section 12934 (d) of S.B. 1106, subject *solely* to the following exception quoted from Section 12938:

> ". . . that in any fiscal year the Legislature may appropriate for any lawful purpose any money in the California Water Fund which is unexpended at the beginning of that fiscal year and any money accruing to that fund during the fiscal year."

It is also our understanding that any revenues transferred from the Bond Fund to the California Water Fund would be available only for expenditure on the state water facilities until such time as all these "facilities" have been completed.

These requirements, however, do not preclude construction of other elements of the State Water Resources Development System prior to completion of the state water facilities. As money from the California Water Fund is used for "facilities" construction, S.B. 1106 provides that bonds in an equivalent amount are to be dedicated for construction of additional units of the "system." Should the department determine that construction of such additional units is necessary and desirable, it is empowered to issue bonds to finance such construction whether or not the "facilities" have then been completed.

Question: (Paragraph 5, page 2.) Would you charge as a project cost interest on California Water Fund monies for the period that they are used?

Answer: We have stated on numerous past occasions, and now reiterate our view, that rates for project services should be so established as to produce revenues sufficient in amount to provide for payment of interest to the State on the full amount of its reimbursable investment in project construction without regard to the source of the capital invested. All feasibility studies and repayment analyses heretofore prepared by the department have been predicated upon this assumption. Therefore, we plan to include interest on any California Water Fund money used to finance the reimbursable costs of a project in setting the rates for project goods and services.

Question: Would you give me an estimate of the amount of California Water Fund moneys that would be expended on the facilities by the time the facilities are completed? This would include both direct receipts to the California Water Fund and the circulating surplus revenues attributable to water fund expenditures.

Answer: Any such estimate must be predicated on estimates as to the anticipated future annual increments to the California Water Fund from tidelands oil revenue. A value of approximately $15,000,000 per year has been used as was mentioned at committee hearings on S.B. No. 1106 at the last session of the Legislature, based largely on past experience. If this level can be consistently attained, some $375,000,000 would accrue to the fund by 1985 when construction will be completed on the State Water Facilities for which financing is provided under S.B. No. 1106. To this amount should be added the funds now available from the California Water Fund for "facilities" construction which would bring the total to, say, $500,000,000 available for construction of the State Water Facilities.

At the present time, we have not completed any studies which show the timing and amount of return payments to the fund from system revenues mainly because of the high degree of uncertainty as to the actual amount of construction capital which the fund may supply. As a generalization, however, we believe that reimbursements to the fund will tend to be concentrated somewhat more in the middle and later years of the repayment period rather than in the early phase thereof.

Question: What is the estimated date of completion of the facilities?

Answer: Estimated dates of completion of the State Water Facilities for which financing is provided under S.B. No. 1106 are as follows:

Oroville Dam and Reservoir	1968
Upper Feather River Basin Features	1963*
Delta Improvements	1982
North Bay Aqueduct	No firm date as yet
South Bay Aqueduct	1965*
Pacheco Pass Tunnel	No firm date as yet
San Joaquin Valley-Southern California Aqueduct System	1985†
San Joaquin Valley Drainage System	1970
Local Projects	Continuing

* First water deliveries in 1962.

† First water deliveries in 1965 or 1966 to Kern County and in 1971 to San Luis Obispo and Santa Barbara Counties, Southern California, and the Antelope Valley-Mojave River area.

Question: It contained, as requested, an estimate of the cost to transmit Oroville power to the Tehachapi pumping plants. Could you break this down to an annual cost which would take into account energy losses in transmission?

Answer: On Page 14 of the department's August 20, 1959, statement, the cost to construct transmission line, transformer and terminal facilities necessary to transmit Oroville-Thermalito power to Pumping Plants Nos. 1, 2, 3, 4, and 5 was estimated at approximately $51,000,000 with annual costs slightly in excess of $3,000,000. The value of the estimated average annual power capacity and energy losses involved in transmission and transformation for the conditions assumed, evaluated on the basis of the capacity and energy values at Oroville, is approximately $2,700,000 annually. This is in addition to the previously mentioned annual cost of facilities of approximately $3,000,000 for a total average annual amount approximating $5,700,000.

Question: Have you an estimate of what it might cost to "wheel" the Oroville power to the pumping plants over nonstate facilities?

Answer: No formal negotiations have been entered into as yet on which to directly base an estimate of the cost to "wheel" Oroville-Thermalito power to the pumping plants over nonstate facilities. The only utility system covering the area from Oroville to the Tehachapis is that of the Pacific Gas and Electric Company and representatives of that company have informally indicated that the company could furnish transmission service over company facilities. This, at least, would preclude the necessity for substantial capital outlay by the State for construction of transmission lines. This matter is currently under study and we will furnish definitive and specific answers as soon as possible.

Question: It is my understanding that the Oroville power would be most valuable for peaking purposes, and that the energy needed for pumping would be largely offpeak. Would you comment on the degree to which this makes Oroville power unsuitable for project pumping use?

Answer: Oroville-Thermalito power generation facilities will yield the greatest benefit operated for peaking purposes; further, operation to meet peak loads combined with pumped storage as we have planned, is more compatible with the primary function of Oroville Reservoir, namely, water conservation for consumptive purposes. Conversely, at least during the early years of project operation, power needed for pumping could be largely offpeak. As the demand for water increases, many of the conveyance facilities will of necessity be operated more and more hours per day until they are under virtually continuous use. It is not practical to confine all of the pumping facilities to offpeak operation even in the early years, however.

Current studies may show that it will be practical to use Oroville-Thermalito power and, likewise, the power output of the aqueduct power recovery plants, to supply part of the onpeak power required for aqueduct pumping with the relatively low-cost offpeak power being purchased from commercial sources. The proportion of the generated energy that might be used for pumping purposes would increase as the pumping load increases with time so there would be an excess during the early years. Quantitative values will be available upon completion of these studies.

Oroville power is not "unsuitable" for pumping energy but since it has a higher value it may be advantageous to sell it or exchange it for a larger amount of offpeak energy.

Question: Would you give some information on what your studies may show on the possibility of exchanging power with some other power producer to obtain energy at the pumping plants. If this method were used have you made any studies or determination as to the rate to be charged to operation of the project for the energy used at the pumping plants?

Answer: The department's current studies of the possibility of exchanging power with some other producer have not progressed to a point at which the feasibility of such an arrangement or a rate to be charged for pumping energy thereunder can be determined. These studies are being actively prosecuted and the results will be furnished you as soon as available.

We trust the foregoing replies to your questions will be of assistance to your committee in its deliberations.

Very truly yours,

(Signed) HARVEY O. BANKS
Director

SACRAMENTO

HARVEY O. BANKS, October 22, 1959

HONORABLE STEPHEN P. TEALE, *Chairman*
Senate Factfinding Committee on Water
Room 4062, State Capitol
Sacramento 14, California

DEAR SENATOR TEALE: In your letter of October 1, 1959, you asked certain additional questions of this department which resulted from a review of the transcript of the hearing of your committee on August 20 and 21. The questions and our answers are as follows:

Question 1: What other agencies, either state or federal, may have authority to set regulations or make decisions which would affect provisions of contracts for services from the California Water Development System?

Answer: The State Department of Finance, Districts Securities Commission, and State Water Rights Board could, conceivably, make decisions that would affect the provisions of contracts for

services from the California Water Development System.

Review and approval of such contracts by the Department of Finance may be required by Section 13370 of the Government Code, which reads in part:

> "All contracts entered into by any state agency for . . . (d) the performance of work or services by such state agency for or in co-operation with any person, or public body, are of no effect unless and until approved by the Department of Finance . . . This section shall apply to any state agency which by general or specific statute is expressly or impliedly authorized to enter into transactions referred to herein."

The following sections of the Water Code are applicable to the California Districts Securities Commission. Section 24253 applies to irrigation districts and Sections 35851 and 35854 apply to California water districts.

> "24253. If the largest payment to be made under any one lease or contract for any property exceeds in any year an amount equal to one-fourth of 1 percent of the total valuation of the land in the district [Irrigation District] according to the assessment next equalized before the making of the lease or contract, the lease or contract shall not be valid unless either:
>
> "1. The district has appropriate funds on hand at the time the lease or contract is made, sufficient to meet all payments to be made thereunder and in excess of the district's normal requirements for the period in which the payments are to be made; or,
>
> "2. Unless a particular purpose or emergency assessment sufficient to meet all of the principal payments to become due under the lease or contract is authorized; or,
>
> "3. The lease or contract is approved by the Districts Securities Commission."
>
> "35851. A district [California Water District] may for a valuable consideration enter into any contract with the United States, the State, or any department or agency of either, or with any distribution district or improvement district formed within its boundaries, or with any political subdivision of the State, including irrigation and reclamation districts, as the board deems proper, advisable, or in the interest of the district for any one or more of the following purposes:
>
> "(a) For the storage, regulation, control, development, and distribution of water for the irrigation of land . . . . "
>
> "35854. All contracts and transfers entered into or made pursuant to this chapter shall be first approved by the California District Securities Commission."

This commission through decisions contemplated by the foregoing Water Code sections could conceivably affect provisions of the state contracts.

The State Water Rights Board might condition permits and licenses issued to the State for the appropriation of water in a way that could also have a bearing on the contents of state water and power contracts.

In the federal field, decisions of the Department of the Interior and of the Army Corps of Engineers may have some effect on certain state water service contracts. It appears that the federal reclamation law would have to be applied in any state contracts for water service from the Black Butte and New Hogan projects. It is possible that regulations on that subject or others could affect contracts which the State may make with others for service from the same facilities.

The operation of Oroville Dam and Reservoir and the power plant would have to be consistent with the license issued to the State by the Federal Power Commission. Furthermore, a federal contribution toward the flood control purpose of that dam would necessitate the operation of the reservoir to realize that purpose in accordance with criteria established by the Corps of Engineers. Although these two matters would have some effect on the quantities of water available for delivery by the State from the Delta Pool, they would not appear to require any specific provisions in the State's water service contracts.

Question 2: Could you furnish to the committee the assumed federal assistance in each of these cases that was anticipated in compiling page 3 of the attachment to Mr. Gianelli's statement?

Answer: Page 3 of Mr. Gianelli's statement was a tabulation of the estimated cost of State Water Facilities funded under the provisions of Senate Bill 1106. The cost of four items, the Oroville features, San Luis Reservoir, the aqueduct from San Luis Reservoir to Avenal Gap, and the Delta Unit were noted with an asterisk and a footnote stating that the cost given in the tabulation did not include an expected federal contribution.

The estimated state cost together with the assumed federal contribution are shown as follows:

	Estimated State Cost	*Assumed Federal Contribution*
Oroville Features	$390,000,000	$70,000,000
San Luis Reservoir	158,000,000	115,000,000
Aqueduct, San Luis Reservoir to Avenal Gap	88,000,000	56,000,000
Delta Unit	53,000,000	30,000,000

Please note that the estimated state costs of San Luis Reservoir and of the aqueduct from the reservoir to Avenal Gap are corrected from costs given in Mr. Gianelli's statement. The total remains the same, the error having been one of distributing costs of the aqueduct pumping plants.

Oroville Features. Negotiations are presently in progress between the Corps of Engineers, the Bureau of Reclamation, and this department to reach agreement upon the federal contribution for flood control at Oroville Reservoir, as authorized by Pub-

lic Law 85-500, 85th Congress, 2d Session. Final agreement has not yet been reached; however, studies to date indicate that the federal contribution will probably be about $70,000,000.

San Luis Reservoir. Negotiations also are in progress between the Bureau of Reclamation and this department to arrive at an agreement on joint participation of the two agencies in the San Luis Reservoir and in the aqueduct south from the reservoir to the vicinity of Kettleman City. State authorization for construction and operation of the project exists, but congressional authorization has not yet been given. No agreement has yet been reached between Reclamation and Water Resources; however, the studies indicate that the federal share in the construction of San Luis Reservoir would amount to about $115,000,000.

Aqueduct, San Luis Reservoir to Avenal Gap. As indicated in the above item, negotiations are in progress to reach agreement upon the federal share of the cost of construction of the aqueduct from San Luis to the vicinity of Kettleman City. Present estimates indicate that the federal share will be about $56,000,000.

Delta Unit. In studies which have been made by this department over the past years in connection with the Bay Barrier Investigation, it has been assumed that the United States would provide a portion of the funds in consideration of the flood control which the project will provide. Unlike the three previous items, no discussions have as yet been held with the Corps of Engineers or the Bureau of Reclamation regarding the extent of federal participation. Studies conducted by the department have indicated that federal participation could amount to about $30,000,000.

Question 3: What does the initial phase of the San Joaquin Valley drainage system consist of?

Answer: The initial phase of the San Joaquin Valley drainage project, as presently conceived, consists of a master drainage conduit originating at Stratford in northern Kings County and generally following the trough of the valley, a distance of about 175 miles, to a terminus at Big Break in the Sacramento-San Joaquin Delta about six miles southeast of Antioch. The initial phase would consist of a canal which would intercept, by gravity, drainage originating along the west side of the San Joaquin Basin, and in the lower portion of the Tulare Lake Basin as far south as Stratford. Additional drainage from the Tulare Lake Bed would be delivered to the canal by a pump lift. The canal would be concrete lined only where necessary to avoid degradation of usable ground water in areas where percolation could occur. This would involve lining about one-third of the initial canal.

Question 4: Article IV, Section 31 of the Constitution prohibits gifts of public money. Would this prohibit reduction in the price of water below the actual cost of providing water service?

Answer: No. If the price of water furnished under a state contract is reduced below the true cost in order to accomplish a public purpose, there would be no gift of state money or other thing of value within the meaning of Section 31, Article IV of the California Constitution. The State Supreme Court has held on various occasions that where state money or some other thing of value is given in order to benefit the public in general, Section 31 is not violated even though private individuals are also benefited. It has also held that the determination of what constitutes a public purpose is primarily a matter for legislative discretion and that such discretion is not disturbed by the courts so long as it has a reasonable basis. It would seem that any subsidization that may be permitted by the Legislature in carrying out the State's water program would be to promote the welfare of the general public, and, consequently, would not be prohibited by the constitutional provision.

Question 5: Could you furnish the committee with the total amount spent so far on the federal Central Valley Project? Of this, how much has been declared to be nonreimbursable from project revenue?

Answer: Pages 234 and 235 of the transcript of the Hearings before the Subcommittee of the Committee on Appropriations, House of Representatives, 86th Congress, 1st Session, and information from the U.S. Bureau of Reclamation reveal the following:

The amount of $557,580,327 has been appropriated for expenditure on the Central Valley Project through June 30, 1959. Insofar as we are able to ascertain informally, it appears that approximately $60,000,000 of that amount is nonreimbursable.

The total allocated cost of the authorized federal Central Valley Project, including the Trinity River Division, is estimated by the Bureau of Reclamation to be $798,163,000 as of June 30, 1959. The federal government has established the nonreimbursable allocation of capital cost for the entire project at $62,729,000. The nonreimbursable sum has been apportioned as shown in the following tabulation.

Items	*Amount*
Navigation and Flood Control	$48,580,000
Fish and Wildlife	13,899,000
Recreation	250,000
Total	$62,729,000

Very truly yours,

(Signed) HARVEY O. BANKS
Director

CONTRACT PRINCIPLES

California Department of Water Resources

SACRAMENTO, January 21, 1960

These principles will establish the framework and terms under which the State will negotiate water delivery contracts with local agencies. Obviously minor details of contracts which may be peculiar to given districts cannot be included in these principles.

The policy to be established on power marketing and acreage limitation is included in a single statement of principle. Because of the fact that the project, under full operation, will consume more power than it will produce, power will be sold at market value in order to reduce the cost of water. The value of the power will be determined by the difference between the actual cost of producing it and what it will bring on the open market.

This value, estimated at between two and three dollars per acre-foot, will be applied to reduce the cost of water for all purposes, agricultural, municipal and industrial, except for use on land in excess of 160 acres (320 acres in the case of community property). Water will be furnished to lands in excess of 160 acres but the price will be the cost of delivering the water, including pricing of necessary power at its market value.

All water in and above the Delta will be sold at the same price, which will reflect the capital cost and operation and maintenance costs of works constructed in and north of the Delta. Water exported from the Delta will reflect the Delta price plus each area's proportionate share of capital costs and operation and maintenance costs of transportation facilities (aqueducts, pumping plants, etc.).

In the event of a shortage the water supply will be prorated among all export contractors.

Provision is made for the accumulation of funds to finance additional storage facilities to insure a continuity of supply of water for local needs and for export from the Delta in the event area of origin statutes are exercised and to provide for increased demands.

The State Department of Water Resources will proceed immediately to negotiate water delivery contracts, based upon these prineiples, with local agencies. Local agencies will be required to sign contracts guaranteeing recovery by the State of at least 75 percent of the cost of transportation facilities necessary to furnish water to them before construction financed wholly or partly from sale of bonds will be initiated.

The State will make every effort to encourage the formation of comprehensive contracting agencies in order to insure that project benefits are spread as widely as possible and also in the interest of guaranteeing a sound market for project water.

Contracting Principles for Water Service Contracts Under the California Water Resources Development System

January 20, 1960

1. Cost allocations shall be on the separable costs-remaining benefits basis for multipurpose facilities and on a proportionate use basis by areas for water transportation facilities.

2. For purposes of project commodity pricing, costs will be allocated among water supply, flood control, recreation, enhancement of fish and wildlife, drainage, quality control, and such other functions as may be authorized and performed by the particular facility or facilities under consideration.

3. Rates for water and power and for other reimbursable items will be established so as to return to the State all costs of project operation, maintenance and replacement. all principal and interest on (1) bonds, (2) expenditures from the California Water Fund, and (3) other moneys used in the construction of the project works. Those costs declared by the Legislature to be nonreimbursable and the federal contributions for flood control and for other items will not be included in the rate structure.

4. The project will require more power for pumping purposes than it will produce. Power required in the operation of the project must be paid for by the water users whether it is obtained from projeet or nonproject sources. Therefore, the costs of the project facilities producing the power is properly a cost of water supply and in the project cost allocation no separate allocation of the capital costs of power facilities will be made. The capital cost of power will be included in the costs allocated to water supply. The difference between the actual cost of power, that is, the amount necessary to repay the capital and operation and maintenance costs of the power facilities. and the market value of the power provides an economic benefit. A cost allocation study will be made with reference to power facilities for the purpose of determining the economic benefit to be derived from the use of project power for project purposes.

In addition, to the extent that from time to time any power is available for sale, it will be sold at its market value. Preferenee will be given to public agencies in such sale as required under existing law. The difference between the actual cost and the market value of such power will result in income to reduce project costs. This added income (power credit) will be applied, and the computed economic benefit will be made available, to reduce the cost of project water except for water used on land in single ownership in excess of 160 acres (320 acres in the case of community property).

5. Under the Delta pooling concept, there will be a single price for state project water at the Delta and for state project service areas above the Delta which will be referred to as the Delta water rate. The Delta water rate will consist of an annual (1) capital cost component, (2) necessary minimum operation, maintenance and replacement component; and (3) an operation and maintenance component which will vary with the amounts of water furnished.

The Delta water rate will be based on the cost of construction and the cost of operation, maintenance and replacement of these conservation facilities allocated to water supply upstream from and within the Delta. The capital cost component and the minimum maintenance and replacement component will be collected irrespective of the amount of water furnished. The operation and maintenance component will be collected from the contractors receiving water in proportion to the amount of water furnished. Increases and decreases in the capital cost component of the Delta water rate will be made from time to time to reflect the then outstanding unpaid reimbursable cost incurred in the construction of facilities necessary to make water available at the Delta.

6. Those contracting for water from a project aqueduct will pay, in addition to the Delta water rate, a charge herein referred to as the "transportation rate." The transportation rate will consist of an annual (1) capital cost component, (2) necessary minimum maintenance and replacement component, and (3) maintenance and operation component which will vary with the amount of water furnished.

The capital cost component, and the minimum maintenance and replacement component will be allocated to service areas by reaches of aqueduct, using the proportionate use method of cost allocation and will be collected annually irrespective of the amount of water furnished. The maintenance and operation component which varies with the quantity of water delivered will be computed for the same reaches of aqueduct as used for the other components of the transportation rate and will be allocated among, and collected annually from, the contractors receiving water in proportion to the amounts of water received. Provision will be made for reserve funds to be used for the purpose of meeting large, unforeseen cost of operation and maintenance, repair and replacement of works.

The total annual charge to project water contractors will be the sum of the transportation rate plus the Delta water rate.

7. The following is a breakdown of the Delta water rate and the transportation rate. The transportation rate is stated for reaches of the aqueducts where the rate will be set by reaches. These rates are based upon estimated costs. Provision will be made in the contracts for revision of the rates when actual costs become known:

Areas of water service by aqueduct reaches	*Estimated operation and maintenance costs plus the Delta water rate, in dollars per acre-foot*	*Estimated annual capital cost component,* in dollars*
1. Areas within and upstream from Delta (Delta Water Rate)	$3.50 †	
2. Entire North Bay Aqueduct to terminus in Marin County	7.50	$1,440,000
3. Entire South Bay Aqueduct (includes cost of possible future extension to Airpoint Reservoir in Santa Clara County if later found necessary)	13.00	1,910,000
4. Pacheco Pass Tunnel Aqueduct	14.00	980,000
SAN JOAQUIN VALLEY		
5. San Luis Reservoir to Avenal Gap	11.50	330,000
6. Avenal Gap to Buena Vista Lake	11.50	4,700,000
7. Buena Vista Lake to Wheeler Ridge	13.00	2,610,000
8. Wheeler Ridge to Tehachapi Tunnel	18.50	560,000
COASTAL AQUEDUCT		
9. San Joaquin Valley east of Devils Den	14.00	1,580,000
10. San Joaquin Valley west of Devils Den	19.00	1,070,000
11. In San Luis Obispo and Santa Barbara Counties	22.00	4,420,000
WEST BRANCH AQUEDUCT IN SOUTHERN CALIFORNIA		
12. Entire service area	25.00	24,530,000
EAST BRANCH AQUEDUCT IN SOUTHERN CALIFORNIA		
13. Tehachapi Tunnel to Pearblossom	32.00	1,910,000
14. Pearblossom to Perris Reservoir	35.50	22,580,000

* Average annual payment necessary to repay, with interest, the portion of the aqueduct system capital cost allocated to each service area, based on a 50-year pay-out period.

† Delta Water Rate shown includes capital cost component for conservation facilities within and above Delta. Power credit has been deducted.

8. Contracts for dependable water supply shall be for at least 50-year terms, but shall contain provision for changes in rates and operating provisions. Upon expiration of the term of the contract, the contracting agency shall have the option of continued service on terms and conditions prescribed by the State, but at no greater cost than would have been the case had the original contract continued in effect. Should the terms and conditions provide for the furnishing of such continuing water service for only a specified period of years, the contracting agency shall have a like right to continued service at the expiration of such succeeding term during which it was receiving project water.

9. To insure continuity and dependability of water supplies the contracts will provide:

(a) That contracts for dependable water supply will aggregate no more than a stated amount based upon the yield of the project. This amount, which will be approximately 4,000,000 acre-feet annually, is to be increased by the yield due to added storage facilities when and as constructed. In addition, contracts may be executed for interim or nondependable water

supply subject to reduction or termination by the State at any time.

(b) For the furnishing of stated maximum annual amounts of project water. The time and rate of furnishing of water delivery during any year by the State will be pursuant to schedules and amendments thereof submitted by the contracting agency for such year. The State will comply with such schedules consistent with its delivery ability taking into account all such schedules submitted by agencies entitled under contract to a dependable project water supply.

(c) That in the event of a shortage in the dependable project supply available in any year for export, project water will be prorated among all export contractors. Each contracting agency will receive an amount of water which bears the same relationship to the available supply, computed on the same basis as the project yield studies, that the amount called for in the agency's contract for a particular year bears to the total amount of water required to be delivered pursuant to all contracts in the respective year. However, the Department will reserve the right to prorate on some other basis if required to meet necessary demands for domestic supply, fire prevention, or sanitation in the respective year or season.

(d) That bond funds will be used to construct added storage facilities and related facilities for local needs to meet commitments to export from the Delta to the extent that California Water Fund moneys are used for construction of the original facilities and to the extent such added construction is required by virtue of a reduction, occasioned by operation of area of origin statutes, in the amount of water available for export. This will be subject to the proviso, however, that to the extent that the director at any time after 1985 finds that any such funds are not then required to meet such reduction and will not be required for such purpose within the next succeeding 10 years, any such funds may be used for the construction of added storage facilities to meet increased demands for export to or from the Delta and to meet local needs.

(e) That the State will plan the availability of water from the Delta so that deliveries can be made at the time and in the amounts scheduled in the contracts. To the extent possible, five years notice shall be given of any reduction in deliveries which will occur as a result of operation of area of origin statutes.

10. Construction of any transporation facility financed wholly or in part through the sale of bonds, will not be started unless water service contracts have been executed which will insure recovery of at least 75 percent of the cost of such facility.

11. Local contracting agencies may make funds available for construction or completion of construction of initial or ultimate facilities and will be credited to the extent of such contributions.

12. As a general policy, contracts for project water will be executed with public agencies having the taxing, assessment or equivalent power and all other powers required in order to comply with the terms of the contract. Contracts will be executed with others not having the taxing, assessment or equivalent power only when the State can be provided with security sufficient to insure that the obligations incurred will be paid.

13. Each contracting agency will agree that, in the event in any year it is unable or fails through other means to raise the funds necessary in any year to pay to the State the sum required under the contract, it will use its taxing or assessment power to raise such sum.

APPENDIX II

This appendix consists of the statement presented to the committee by the then director, Region II, Bureau of Reclamation, B. P. Bellport, on August 20, 1959. Mr. Bellport was asked to state general policies of the Bureau of Reclamation in its water and power supplies activities.

I am happy to be here today in response to your committee's request to advise on our experience relating to water and power pricing. As you are aware, the Bureau of Reclamation has been planning, constructing, and operating water resource developments for more than 50 years. During that time, general principles have gradually evolved with respect to the economic and financial tests projects must meet and satisfy. These principles are expressed in reclamation law and policy.

Fundamentally, a project is tested for economic soundness by a comparison of values created with costs incurred. The values are called benefits, and the relative economic soundness is expressed as a benefit-cost ratio. Reclamation law requires that bureau projects be evaluated on the basis of financial feasibility. As most bureau project costs are reimbursable, a second type of economic evaluation becmes necessary. To demonstrate a project's financial feasibility it must be shown that beneficiaries are in a position to repay, out of the benefits created, those project costs which are determined to be reimbursable.

Permit me now to refer to the specific questions which you have posed and for which I have attempted so far to outline the general background.

1. How does the bureau arrive at costs allocated to irrigation?

While the bureau in the past has used several methods of cost allocation, an agreement reached with the Department of the Army and the Federal Power Commission in 1954 has led to general adoption of the separable cost-remaining benefits method. In special cases other methods of allocation are still useful, among them the "proportionate use," "proportionate benefit," or "alternative justifiable expenditure" methods. It is generally agreed, however, that the separable cost-remaining benefits method provides the most equitable distribution of costs among the functions of a multipurpose project.

The proper formulation of a multipurpose water project requires that the net benefits accruing from its use be maximized. The use of one structure to accommodate more than one function normally makes possible the provision of all services at less cost than the total costs of *separate* projects to serve each function. It is here that cost allocation enters the picture, aiming to distribute to each function its proper share of savings as derived through the optimum use of the one combined structure.

The costs specifically associated with each project function are assigned directly to the function. The costs of joint-use facilities are apportioned between the functions served in proportion to their respective benefits. The specific costs assigned, plus the appropriate share of joint costs, constitute the total cost allocation to each project function. I have attached a hypothetical illustration of the application of the Separable Cost-Remaining Benefit method of cost allocation for further study by the commission.

Total project costs are allocated simultaneously among all recognized project functions, nonreimbursable and reimbursable alike. The costs allocated to the irrigation function, excluding interest as provided under reclamation law, are those against which revenues from irrigation are applied.

2. How does the bureau decide how much of the cost allocated to irrigation will be repaid by the agricultural water users?

Detailed irrigation benefit and payment capacity analyses are made to determine the limits of irrigation reimbursement which the irrigators might be expected to bear. Also, the costs of service to different areas are analyzed. Then, taking these evaluations into consideration, proposed water rate schedules or repayment obligations are established. To the extent that revenues anticipated under these water rates or repayment assignments will not meet the total irrigation allocation over the permissible repayment period, other reimbursable functions such as power and, to a lesser extent municipal and industrial service, are called upon to aid in providing the financial assistance needed to retire the irrigation allocation.

It is the intent of Congress that water users should pay in accordance with their ability to pay. General reclamation law provides for the reimbursement of irrigation capital expenditures over a 40-year period with up to 10 additional years allowed as an initial development period. As a general standard, this means that the costs allocated to irrigation should be recovered in not more than 50 years.

3. In determining repayment ability, would you take into account: (1) types of soil? (2) kinds of crops to be grown? or (3) sizes of holdings?

In the course of project investigation, lands to be served are classified according to productivity, with a view towards estimating the pattern of crops or enterprises likely to develop. After detailed examination of the areas' potential and limitations, a probable development picture emerges which is used as a basis for the preparation of detailed farm budgets. Under the requirements of reclamation law, these budgets envision family size and type of farm enterprises expected to develop after provision of project water supplies. Price-cost levels expected to prevail, along with soils, climate, existing development, etc., influence the projection of farm sizes and types contemplated under project development. This evaluation may indicate a substantial change from the sizes and types of farms

presently prevailing in the area. In other words, attempts are made to forecast the most reasonable or likely development of a project service area.

Detailed budget analyses are made for farm types and sizes considered representative for the area to be served. They are used to determine the ability of the water users to pay for irrigation water. All operating and overhead costs, except for water costs, are deducted from estimated gross farm income. Allowance is also made for the operator's labor, management efforts, family living costs, and equity earnings. The resulting margin, not including provision for unforeseen contingencies, indicates the ability of the potential water users to meet project water costs.

4. Does the bureau try to hold the contract price to 75 percent of payment capacity?

To allow for variables and unforeseen contingency factors, irrigation water rates or annual repayment obligations are normally established so as not to exceed 75 percent of the estimated payment capacity.

5. Is your price for agricultural water unvarying for each individual canal, such as Madera, Friant-Kern, or Contra Costa? If it is not, could you explain the reasons for variations?

Our present contract rates for irrigation water are as follows: Class 1 water from the Madera, Friant-Kern, Delta-Mendota, and Contra Costa Canals is $3.50 per acre-foot. Class II water is available from the Madera and Friant-Kern Canals only, at a rate of $1.50 per acre-foot.

The bureau visualized a "postage stamp concept" of water rates for the initial Central Valley Project. That is, throughout service areas of the initially authorized Central Valley Project, a uniform rate was envisioned with no variation between areas as to the relative cost of providing water service or relative payment capacities. However, with ever-rising construction costs and greater variations of payment capacities among service areas, a zonal rate concept evolved as additional project units were added. In keeping with congressional intent, greater recognition is now given to such factors as differences in payment capacities and relative costs incurred in providing service, which may result in variable rates.

6. We would like, for the Central Valley Project, the project costs allocated to providing agricultural water service, and the total repayment you expect to receive.

The most recent cost allocation of the authorized Central Valley Project shows that $394 million of the reimbursable project costs are allocated to the irrigation function. Over the repayment period, irrigators are expected to repay about $285 million, or approximately 72 percent of the total. The remainder is met by revenues available primarily from the interest-bearing power, and to a lesser extent from the municipal and industrial functions after the costs allocated to those functions have been repaid.

7. For municipal and industrial water would you again give a general explanation of the method employed in allocating project costs to this purpose?

As outlined generally in answer to question 1 above, reclamation project costs are allocated to the municipal and industrial function in the same manner as to other project functions. Total project costs are allocated among all project functions, using the Separable Costs—Remaining Benefit method, as previously described. The costs of proposed project additions are allocated in terms of incremental accomplishments and the results added to those of the "base" project. The separable costs associated with any function are assigned directly to it along with a proportionate share of the joint project costs.

8. Do you charge an amount which as nearly as possible pays off the costs allocated to municipal and industrial plus interest? What consideration is given to ability to pay?

The general policy is to establish municipal and industrial water rates, based upon the cost of service, so that as a minimum, the municipal and industrial function will be self-liquidating.[1] However, in some instances where irrigation requires financial assistance in repaying its allocated costs, the municipal and industrial function may be called upon to aid in providing the financial assistance needed.

In establishing municipal and industrial rates, consideration is given to the costs of developing water supplies from alternative sources. Other evidences of ability to pay, as indicated by rates for other comparable areas and/or expressions from representative local groups, are also considered.

9. We would like a list of prices charged various districts for municipal and industrial water. Is there a standard rate from each major canal? If there are varying rates, could you explain the reasons for the variation?

Existing municipal and industrial rates for the Central Valley Project are as follows:

a. Shasta Dam area (3 districts) and City of Friant are served by special facilities, at $20 per acre-foot.

b. Service from the Contra Costa, Delta-Mendota, and Friant-Kern canals is at a rate of $10 per acre-foot; and from the Sly Park Unit at $17.50 per acre-foot plus operation, maintenance and replacement.

c. The City of Sacramento is served directly from the river at a rate of $9 per acre-foot.

d. Special service directly from reservoirs is provided in a few cases—through the customer's own facilities, and rates are established on a minimum annual payment basis, increasing as the number of units (e.g., houses) increases.

Variations in cost of service is the primary consideration entering into the establishment of differential municipal and industrial water rates.

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[1] The Reclamation Project Act of 1939, Sec. 9(c) provides in part as follows: "The Secretary is authorized to enter into contracts to furnish water for municipal water supply or miscellaneous purposes: Provided, That any such contract either (1) shall require repayment to the United States, over a period of not to exceed 40 years from the year in which water is first delivered for the use of the contracting party, with interest not exceeding the rate of 3½ percentum per annum if the Secretary determines an interest charge to be proper, of an appropriate share as determined by the Secretary of that part of the construction costs allocated by him to municipal water supply or other miscellaneous purposes; or (2) shall be for such periods, not to exceed 40 years and at such rates as in the Secretary's judgment will produce revenues at least sufficient to cover an appropriate share of such fixed charges as the Secretary deems proper, and shall require the payment of said rates each year in advance of delivery of water for said year."

10. How is the interest rate for repayment on municipal and industrial water determined?

As cited in answer to question 8 above, the applicable interest rate is generally determined at the discretion of the Secretary of the Interior up to the limit of 3.5 percent.[2] The presently established interest rate on municipal and industrial water for Central Valley Project is 2.5 percent, as established by the Secretary of the Interior. In some cases specific legislative provisions control. Public Law 84-984 "Small Reclamation Project Act of 1956" may be cited for illustrative purposes.

11. Is the same rate used in determining the interest cost of power facilities?

There are different provisions in reclamation law and policy with reference to interest rates for municipal and industrial and power functions.[3] The interest rate most commonly assigned to the power function has been 3 percent. Specific legislative provisions control in some instances. The interest rate presently adopted for the commercial power function for the authorized Central Valley Project is 3 percent.

12. On power pricing, a further discussion would be helpful of the method used to determine costs allocated to power. Then how do you set a price on power?

As discussed in answer to questions 1 and 7 above, total project costs are allocated among all project functions, nonreimbursable and reimbursable alike, using the Separable Cost—Remaining Benefit method of cost allocation. The costs of project additions are allocated in terms of incremental accomplishments and the results obtained added to those of the "base project." This is a simultaneous allocation of all project costs among all participating functions or purposes. Power costs are allocated in part to commercial power, and in part to irrigation and municipal and industrial as appropriate to reflect project pumping of irrigation and municipal and industrial supplies.

Rate schedules are developed on a basis that will provide for the annual operation maintenance and replacement costs of producing and transmitting the energy and return the capital investment in power facilities, together with interest in not more than 50 years. If other project costs are to be repaid in part by power revenues, rates for power are set to recover these additional costs within a reasonable time. Rate schedules are uniform throughout the project service area.

13. Do you go into the ability to pay of the prospective power users as you do with water?

Not in the same sense as irrigation. However, we do analyze cost of power from other likely alternative sources and otherwise check with potential customers as to their needs and willingness to pay our proposed power rates.

14. How do you price project-use power; that is, power that you use in the operation of a project?

In the Central Valley Project an intraproject charge of 2.5 mills is made which is intended to cover the estimated average cost per kilowatt-hour for operation maintenance and replacement of the power system. In addition, an appropriate portion of the power investment is allocated to the project power users. The allocation to irrigation is repaid without interest; the allocation to municipal and industrial use is repaid with interest.

To summarize, may I point out that the bureau attempts to allocate total project costs in an equitable manner among all recognized project functions; then to contract for the reimbursable services with appropriate legal entities, under a rate structure developed in accordance with sound business principles, which will satisfy the repayment requirements of reclamation law and policy with equity to all project beneficiaries.

(Attachment)

ALLOCATION OF COSTS BY SEPARABLE COSTS—REMAINING BENEFITS METHOD

General Case

(In thousands of dollars)

Item	*Flood control*	*Power*	*Irrigation*	*Navigation*	*Total*
1. Benefits	500	1,500	350	100	2,450
2. Alternative cost	400	1,000	600	80	2,080
3. Benefits limited by alternative cost (lesser of items 1 and 2)	400	1,000	350	80	1,830
4. Separable costs	380	600	150	50	1,180
5. Remaining benefits (items 3 — 4)	20	400	200	30	650
6. Allocated residual cost *	18	360	180	27	585
7. Total allocation (items 4 + 6)	398	960	330	77	1,765

* In this example, the total residual costs to be allocated ($585,000 in line 6) are 90 percent of total remaining benefits ($650,000 in line 5). Therefore each purpose is charged with residual costs equal to 90 percent of its remaining benefits. The same results will be obtained by using distribution ratios (percent of each item in line 5 to their total).

[2] More recent legislation (Public Law 85-500) specifies, under Section 301(b), in part as follows: "The interest rate used for purposes of computing interest during construction and interest on the unpaid balance shall be determined by the Secretary of the Treasury, as of the beginning of the fiscal year in which construction is initiated, on the basis of the computed average interest rate payable by the Treasury upon its outstanding marketable public obligations, which are neither due nor callable for redemption for 15 years from date of issue. The provisions of this subsection insofar as they relate to the Bureau of Reclamation and the Secretary of the Interior shall be alternative to and not a substitute for the provisions of the Reclamation Projects Act of 1939 relating to the same subject."

[3] The Reclamation Project Act of 1939, Section 9(c) provides in part as follows: "Any sale of electric power or lease of power privileges, made by the Secretary in connection with the operation of any project or division of a project, shall be for such periods, not to exceed 40 years, and at such rates as in his judgment will produce power revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost, interest on an appropriate share of the construction investment at not less than 3 percentum per annum and such other fixed charges as the Secretary deems proper; Provided further, That in said sales or leases preference shall be given to municipalities and other public corporations or agencies; and also to co-operatives and other nonprofit organizations financed in whole or in part by loans made pursuant to the Rural Electrification Act of 1936 and any amendments thereof."

APPENDIX III

Little public attention has been focused so far on the possibilities of developments for the enhancement of fish and wildlife and for public recreation in connection with the proposed state water program. The committee devoted much of its time during a two-day hearing last November to this. Special documents developed are contained in this appendix. They include a statement by Mr. James F. Wright, Chief Deputy Director of the Department of Water Resources outlining the plans made so far by the department in this field. A letter discussing questions raised by his presentation follows. Also contained are statements presented by Mr. William E. Warne, then Director of the State Department of Fish and Game, and by Mr. Edward F. Dolder, Deputy Director of the Department of Natural Resources.

Statement of the California Department of Water Resources Before the Senate Fact Finding Committee On Water

Presented By James F. Wright, Chief Deputy Director

Los Angeles, California, November 20, 1959

It is a pleasure to appear before this committee today in response to Senator Teale's request of October 30, 1959. In the request, several specific questions were asked of the Department of Water Resources. Before answering the questions, however, I would like to explain some of the principles and policies which have guided our planning for recreational development, financing, and operation at state constructed or financed water projects.

We believe that there is in each water project an inherent value to be added to the great recreation resource of the State, and that this value should be reserved for public use by the people of the State. The basic capacity of the land and water to provide recreation as well as other beneficial uses should be protected against damage. Likewise, the State's vested interest in the resource made available by water development should be protected by assurance that public recreation will be adequate and be available. By the same token, we believe that private developments in the vicinity of each water project should be planned for and protected by appropriate zoning regulations.

These principles dictate that recreation development and the enhancement of fish and wildlife resources be accepted as beneficial uses of water and as primary purposes of water development and project operation in some instances.

The costs of dams and reservoirs properly allocated to recreation and to the enhancement of fish and wildlife resources and the costs of initial recreation developments, to the extent that statewide interest is involved, are considered to be non-reimbursable. The costs of further development of recreation features at any of the state-constructed water facilities should be borne, we believe, by the operating agency, which may or may not be the State, according to the magnitude and importance of the development and the degree of statewide interest.

In the cases in which statewide interest is not clearly involved, the costs of recreation should be borne, wherever possible, by the users or other direct beneficiaries if they can be identified, always providing that the benefits of public use be protected.

We assume further that the Department of Water Resources will not operate the recreational features of any of the facilities, but will contract with some other agency, federal, state, local or private, for their operation, maintenance, and replacement.

With these guides in mind, we have prepared answers to your questions.

Question 1. Would you outline plans made so far for recreation and fish and wildlife development in connection with the state water facilities?

Planning for recreation and fish and wildlife development in connection with the state water facilities has proceeded generally in relation to the anticipated date of construction of the respective facilities. A plan for recreation development and operation has been completed for the Frenchman unit of the Upper Feather River Division. The initial recreational development will consist of camping, picknicking, swimming, and boating facilities. Plumas County will assume responsibility for operation and maintenance of the recreation areas and facilities at Frenchman Reservoir. The United States Forest Service will cooperate in this program, and will operate recreation areas on adjoining lands under federal ownership. A fisheries management program for Frenchman Reservoir will be provided by the Department of Fish and Game.

At the other four units in the Upper Feather River Division—Grizzly Valley, Abbey Bridge, Dixie Refuge and Antelope Valley Dams and Reservoirs—development and operation planning for recreation is under way. These specific plans are being based upon previously completed preliminary plans, and are being co-ordinated with the United States Forest Service and Plumas County.

Next in point of time is the South Bay Aqueduct System. Recreation plans are nearing completion for the Del Valle and Airpoint units. At Del Valle, the initial development will consist of picknicking, boating and swimming facilities. At Airpoint, the County of Santa Clara and the Department of Water Resources have planned the recreation development to take advantage of existing recreation facilities and to provide additional facilities to capitalize on the recreation potential of the reservoir. At both of these reservoirs, recreation planning is being closely co-

ordinated with potential operating agencies, and fish management plans are being developed by the Department of Fish and Game.

Recreation land use and acquisition plans are well along at the Oroville Reservoir and the Thermolito Forebay and Afterbay located below Oroville Dam. In each case the initial development will include camping or picnic facilities or both, plus boating and swimming facilities, and access facilities such as roads, parking, and boat launching ramps.

Specific recreation development and operation plans have not yet been started at Oroville. The Division of Beaches and Parks has already conducted some studies at Oroville Reservoir, and we will continue to work with that agency as more specific planning goes forward.

The Department of Fish and Game, as a result of continuing studies, has very recently submitted to us specific recommendations concerning preservation and enhancement of fish and wildlife in relation to all of the developments at Oroville. It is encouraging to note in the Department of Fish and Game's report that the preservation of fish and wildlife resources will present no particularly difficult problems. It is even more encouraging to note that enhancement opportunities exist for most of the fish and game population found in the project area. We intend to give full consideration to every one of these recommendations, and put them into effect if they are found feasible.

Plans for recreation development at the San Luis Reservoir unit are under way and will include camping, picnicking, boating, swimming, and other development as already outlined. The San Luis Reservoir will be of great value as a warmwater fishery and as a resting area for waterfowl coming from the valley areas to the east. Recreational use at San Luis Reservoir is expected to be high, primarily because of its proximity to large centers of population. The County of Merced has indicated a strong interest in recreation at San Luis.

Recreation development along the San Joaquin Valley Aqueduct itself is being planned for and will perhaps take the form of small canal-side reservoirs with appropriate park and recreation facility development. These small areas will be important to the people in the area in providing water associated recreation in an area now almost totally devoid of same, and by diverting unauthorized use from the canal itself with its dangerously high water velocity and steep sides.

In the Southern California area, recreation plans are well along for the Cedar Springs Reservoir area which will have the same kind of initial development as anticipated at the northern units. The development will be very much more intensive due to the large population in Southern California. Recreation planning for the Perris, Bear Trap, and Castaic units has commenced, but is somewhat behind planning of the Cedar Springs unit.

The Department of Water Resources has, in connection with investigations conducted over the past several years, prepared a number of other recreation plans. These include a recreation master plan for the Delta Water Project, a recreation plan for Wilson Valley Reservoir, recreation plans for reservoirs in the Upper Pit River Basin and in Shasta Valley, and general recreation plans prepared in connection with the Northeastern Counties Investigation.

At all of the reservoirs included in the state water facilities, that are to be constructed by the State, initial recreation planning emphasis is placed on land uses for recreation, and the development of a land acquisition plan for recreation. We feel that this is an essential first step, and one which should be completed before we begin acquiring lands for general project purposes. The acquisition of recreation lands, along with other project lands, is necessary to insure that the land will be available for this purpose, and that it is acquired at the least cost to the State. Deferring the acquisition of recreation lands until a later date would result in a many-fold increase in the price paid for the land.

After land acquisition planning has been completed, specific site-development plans are prepared. When construction is several years away, as it is in the case of some of the reservoirs included in the state water facilities, detailed site-development planning can be deferred to a time closer to actual construction.

Question 2. Could you list reservoirs included in the facilities, the number of acres of surface area for each, and an estimate of the surrounding land acreage which should be acquired to allow full realization of the recreation potential?

The water surface areas of the reservoirs listed below are measured at the elevation of the spillway. In estimating the land areas needed for recreation purposes at each unit, we have not included the areas of lands which would ordinarily be obtained for general project purposes.

In other words, the recreation lands are in addition to the areas that must be acquired for other project

Name of reservoir *	*Surface acreage*	*Recreation acreage*
Frenchman	1,500	USFS & 750
Grizzly Valley	4,100	USFS & 720 (P)
Abbey Bridge	540	USFS
Dixie Refuge	800	USFS
Antelope Valley	930	USFS & 200 (E)
Oroville	15,450	2728 (P)
Oroville Diversion	334	None
Thermalito Forebay	700	172 (P)
Huichica (North Bay Aqueduct System)	800	220 (E)
Doolan Canyon	200	600 (E)
Bethany Forebay (Second Stage)	155	100 (E)
Del Valle	750	560 (P)
Airpoint	95	400 (See text)
San Luis	13,000	480 (E)
Los Banos Forebay	700	160 (E)
Los Perillas	195	40 (E)
Castaic	1,600	USFS & 1200 (E)
Bear Trap	590	USFS
Perris	2,650	1000 (E)
Cedar Springs	1,710	USFS & 40 (E)

* Reservoirs to be constructed by the State.
(P) Planned but not acquired.
(E) Estimated land requirements.
USFS United States Forest Service lands are adjacent.

purposes. The Frenchman unit is the only one for which the State has already completed the acquisition of the needed recreation land. In cases where a recreation plan has been made but the land has not been acquired, the area is designated by the sign (P), and in all others the needed recreation area is estimated only, and is designated by the sign (E). In cases where United States Forest Service lands adjoin the reservoir, the State need not acquire the land, and this is designated by the sign (USFS).

Question 3. Would you state any estimates made so far by reservoir or overall of the costs of physical facilities, land acquisition, access roads, etc., for recreational facilities?

Estimates have been made of the costs of recreational development at the Frenchman, Del Valle and Airpoint units. The cost of recreational lands and facilities at the Frenchman unit total approximately $271,000, for the Del Valle unit $535,000 and for the Airpoint unit approximately $786,000. These estimates are for the initial costs only because it is assumed that future development costs will be borne by the operating agency. The cost of land acquisition for recreation at the Frenchman unit is not easily identifiable because all project lands were acquired in the same negotiation; we estimate the additional cost of recreation land acquisition at about $75,000. The costs of access roads for recreation purposes at the Frenchman unit are not identifiable, as they are a part of the total project road cost of $112,000. At the Del Valle unit of the South Bay Aqueduct System, recreation land acquisition in addition to the lands otherwise required amounts to about $50,000. At Del Valle the costs of access roads will be very minor because roads requiring realignment for other project purposes will also serve the recreation development. At the Airpoint unit the cost of land acquisition for recreation purposes is difficult to identify because land was acquired for a larger reservoir at this site than now considered necessary. Subsequent resizing left adequate lands available for recreation development and the cost of these lands is estimated to be about $400,000.

Costs of land acquisition at the San Luis unit are not yet estimated nor have they been estimated for any of the Southern California units.

Question 4. Would you comment on potential damage to fish and wildlife which may occur as a result of construction of the facilities and on means of measuring this damage?

Oroville Dam and Reservoir will eliminate that portion of the salmon and steelhead spawning habitat that lies upstream from the dam site. This being the case, the project has the potential for damaging these fisheries resources. As mentioned earlier, however, Department of Fish and Game studies have concluded that these fisheries can be preserved by the installation of a hatchery and modification to the stream below Oroville. These studies further indicate that many enhancement possibilities exist for these and other fish and wildlife resources at the project.

Any water control structures in the Sacramento-San Joaquin Delta are of potential harm to the migratory species of fish that pass through or live in the Delta. These fish include salmon, steelhead, striped bass, shad and sturgeon; some of California's most valuable fisheries. Successful means must be found to enable upstream migrant fish to pass the control structures and to prevent the downstream migrants from becoming lost in diversions. The department intends to continue studying these matters jointly with the Department of Fish and Game until acceptable preservation plans are developed. The Department of Fish and Game has submitted reports to us concerning fish and wildlife and the Delta Water Project. Both departments co-operated in the evaluation of a type of fish ladder that might be used in connection with Delta works. The results showed that the ladder —actually a vertical baffle fishway—will pass upstream migrating fish of the species that use the Delta area.

Other units of the state water facilities to be constructed by the State will offer no potential serious damage to fish and wildlife resources. In fact, the potentials that exist will be for enhancement of these resources through the installation of new reservoirs.

Over the past several years, it has been our procedure to contract with the Department of Fish and Game for studies relating to fish and wildlife resources. We budget annually for these services, and rely on biologists of that department to furnish the necessary fish and wildlife data. Included in the biologist studies are estimates of damage and enhancement, recommendations concerning resource preservation and enhancement, and general resource management plans as related to conditions expected under project conditions.

Question 5. Do you have estimates of the benefits that may accrue to fish and wildlife resources from the facilities?

The reservoirs in the Upper Feather River Basin were authorized largely because of the benefits that they would provide to fish and wildlife and to general recreation. Frenchman and Grizzly Valley Reservoirs will both support trout fisheries, and will be attractive to anglers and to other recreationists. Fisheries in the stream sections below these dams will be preserved, but because of water availability and other limitations, the downstream fishery cannot be enhanced.

Antelope Valley, Abbey Bridge and Dixie Refuge Reservoirs, which together comprise the Indian Creek Recreation Project, will provide large benefits to recreation. Fish and wildlife enhancement will provide a large portion of the total benefit. These benefits will accrue not only in the reservoirs, but in the streams below as well, since all three of these dams will provide adequate stream flow maintenance.

Oroville Reservoir will provide a sport fishery quite similar to those at Folsom and Shasta Reservoirs. Fluctuations in water surface limits fisheries production at such reservoirs, yet nonetheless, a lot of good fishing can be provided. We understand that the De-

partment of Fish and Game is proposing a program of research into means of increasing fish production in large fluctuating reservoirs. A research program of this sort can be expected to result in better fishing at Oroville Reservoir and many other large reservoirs as well.

The Thermalito Afterbay—the reservoir below Oroville Dam which will reregulate the irregular flows from the power plant—has the potential to become an outstanding public shooting and management area for waterfowl. In the Feather River below the Thermalito Afterbay uniform water releases will create an improved environment for salmon and steelhead.

In all of the other reservoirs of the facilities to be constructed by the State, the potential will exist for the development of fish and wildlife populations. Whether the fishing and hunting will be excellent, fair or poor will depend upon the physical and biological conditions at each project. In any event, we will develop plans to maximize the recreational benefits of these projects, and plan for the full public use of the potentials that will exist.

The benefits resulting from increased fishing, hunting, and other recreational opportunities must, of course, be measured in terms of use. A fine trout population, or an attractive lakeside campground, are of no value unless they are used by the people. At some of the projects included in the state water facilities estimates of recreational use resulting from the projects have been prepared. At others, such projections will be made as recreation planning progresses.

In converting visitor and user data into dollar values, the Department of Water Resources has used a method which has resulted in the assignment of net values ranging from about one dollar to over two dollars per visitor or user day. The assignment of dollar values to recreation is a relatively new development, and one which is receiving further study. The evaluation method we currently use was developed for us by a consulting firm in connection with our studies in the Upper Feather River Basin. I am submitting a detailed description of the method with this statement for the committee's information and files.

Question 6. Does the department have authority to spend any funds made available by the Burns-Porter Act for fish and wildlife and recreation without further legislation?

Yes, the department does have authority to spend funds made available by the Burns-Porter Act for fish and wildlife and recreation to the following extent:

(a) One hundred thirty million dollars of the financing provided under the Burns-Porter Act shall be available exclusively for water development facilities for local areas as provided in the Davis-Grunsky Act, Chapter 5, commencing at Section 12880, of Part 6 of Division 6 of the Water Code. Under that act, grants may be made for the part of the construction costs of a project properly allocated to the enhancement of fish and wildlife incidental to the primary functions of the project. Grants also may be made for the part of the construction costs of the dam and reservoir allocated to recreational functions of statewide interest that are incidental to the primary functions of the project. While loans may be made only for projects primarily for domestic, municipal, agricultural, or industrial purposes, such projects can include recreation and fish and wildlife benefits.

(b) The department is authorized to plan and to acquire real property for recreational development associated with state-constructed water projects (Water Code, Sections 345-346). It is not authorized to spend funds for construction or operation of recreational facilities.

(c) It is obvious that the state water facilities, to be constructed under the Burns-Porter Act will, by their very nature, confer fish and wildlife and recreation benefits. In fact, some of the facilities expressly include such benefits. For example, the dams and reservoirs on the Feather River, upstream from Oroville, are largely devoted to such purposes. (See publication of the Division of Water Resources entitled "Program for Financing and Constructing the Feather River Project as the Initial Unit of the California Water Plan," dated February 1955. See also Bulletin No. 59, Department of Water Resources, entitled "Investigation of Upper Feather River Basin Development.") Likewise, the Delta diversion facilities are intended to provide protection to fish and wildlife. (Bulletin No. 60, Department of Water Resources, entitled "Interim Report to the California State Legislature on the Salinity Control Barrier Investigation," dated March 1957.)

(d) The Burns-Porter Act makes funds available for the State Water Resources Development System, which includes not only the state water facilities but also such additional facilities as may now or hereafter be authorized by the Legislature as a part of (1) the Central Valley Project or (2) the California Water Plan, and such other additional facilities as the department deems necessary and desirable to meet local needs, including, but not restricted to, flood control, and to augment the supplies of water in the Sacramento-San Joaquin Delta. Such facilities could include recreation and fish and wildlife benefits.

Question 7. If the department has or receives authority to spend funds made available by the act for recreation and fish and wildlife, would it still need legislative authorization in order to declare these expenditures partially or wholly nonreimbursable from project revenues?

In Section 233 of the Water Code, added by Chapter 2047, Statutes of 1959, the Legislature has implied that facilities necessary for public recreation and the preservation and enhancement of fish and wildlife resources of statewide significance should be nonreimbursable.

Excluding annual project operation and maintenance charges, and replacement costs, bond interest and principal is the only project cost required to be reimbursed under present statutes. Section 11455 of the Water Code provides:

"Section 11455. *The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue* which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and *which will provide at all times sufficient funds for redemption of all bonds and payment of interest* thereon, as and when such costs and charges become due and payable." (Emphasis supplied.)

Question 8. If full or partial reimbursement of recreation and fish and wildlife costs is required, does the department need further legislative authority to collect fees for use of these facilities or lands?

As stated above, the department has broad authority for fixing rates and charges for project facilities, and therefore no further legislative authority appears needed.

In Senator Teale's request of October 30, 1959, several other questions were listed, and the department's comments thereon requested. There follows, briefly, our answers to these questions:

Question 1. Would you comment on the degree to which any particular source could contribute to capital and O. & M. costs of recreational facilities?

We would suggest that the capital costs of the initial recreation facilities of statewide interest be furnished by the State, and that O. & M. costs and the capital costs of facilities installed after the initial stage, be borne by the agency operating and maintaining recreation areas and facilities.

To the extent that statewide interest is involved, we feel that the capital costs of recreation facilities should be nonreimbursable. However, to the extent that local and recreation users' interests are involved, recreation costs should be recovered, provided that such reimbursement does not impair optimum use of the recreation facilities involved.

Question 2. In your opinion could fees from users, lessees, etc., finance all capital and O. & M. costs of recreational facilities?

Experience at water associated recreation areas in California has shown that fees collected usually do not provide enough revenue to meet all O. & M. costs. We doubt, therefore, that fees collected from users, lessees, etc., will provide sufficient revenue to repay all capital and O. & M. costs of recreational facilities. It is possible, however, that there will be sufficient revenue to do this in some instances.

Question 3. If not, could this source finance O. & M. costs alone?

There is a much greater likelihood that revenues from fees would be sufficient to repay the costs of O. & M. alone. Even this degree of repayment may not always be possible, although we feel that this repayment should be made by user fees if this is at all possible.

Question 4. What yardstick would you use for setting user fees?

User fees should be set at a rate at least high enough to repay O. & M. costs providing that the fees are not so high as to impair optimum use of the recreation facilities involved. We recognize that the fees must be related to the amount and quality of facilities and services available, but they must also reflect the level of fees for similar services and facilities elsewhere in California.

Question 5. Do you see any inequity in charging fishermen fees for a state license and further fees for use of the facilities created by the State Water System?

We see no inequity in charging anglers for their state license, and charging them further for the use of recreation facilities made available at a state-constructed water project. The anglinging license fee entitles the holder to use the State's fisheries resources, and revenues from the license fees are used to finance the Department of Fish and Game's management of those resources. Fees charged of recreation facility users at state-constructed water projects are charges for the use of facilities, not charges for use of the fisheries resource.

Question 6. Would it be desirable or equitable to require local governments to contribute—from tax funds—to capital costs and O. & M. costs of these recreational facilities?

To the extent that local interest is involved, the Department of Water Resources feels it appropriate to recover costs allocated to recreation, providing that such reimbursement does not impair optimum use of the recreation facilities involved. The taxation and assessment powers of appropriate local agencies should be considered as a means of recovering costs allocated to local interest. Such a repayment procedure must be carefully studied before being applied, and careful distinction must be made between "statewide interest" and "local interest" insofar as recreation is concerned.

Question 7. To what extent it is economical and desirable to construct fish and game and recreational facilities simultaneously with construction of the main works of the State Water System?

The Department of Water Resources feels very strongly that recreation facilities, and facilities for the preservation and/or enhancement of fish and wildlife, should be constructed simultaneously with the construction of the main works at state-constructed water projects. We believe that this is necessary in order to have the facilities built at the lowest cost to the State, and in order to make full use of the recreation potentials of the project. Some fish and wildlife facilities—a fish ladder, for example, *must* be constructed according to a very carefully prepared time schedule. Delaying construction of the fish ladder could result in the loss of a valuable fish run.

Question 8. Who should administer these recreational areas, a state agency such as the Department of Water Resources, the Department of Fish and Game, the Division of Beaches and Parks; or a local agency such as a county or special district?

As stated earlier, we do not feel that the Department of Water Resources should operate the recreation areas and facilities associated with state-constructed water projects. Local agencies—counties, cities, or districts—are well qualified to operate most such areas, and are usually quite interested in doing so. When an area possesses characteristics which make it of particular statewide significance, it might be appropriately administered by the Division of Beaches and Parks.

Areas devoted to fisheries and/or wildlife management would logically be administered by, or in cooperation with, the Department of Fish and Game.

Further Questions Answered

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
SACRAMENTO, February 26, 1960

HON. STEPHEN P. TEALE
26th Senatorial District
State Capitol, Sacramento, California

DEAR SENATOR TEALE: Reference is made to the statement to the Senate Fact-Finding Committee on Water on November 20, 1959, in Los Angeles, presented by Mr. James F. Wright, Deputy Director of the Department of Water Resources. It is the purpose of this letter to supply the additional information requested by the committee following Mr. Wright's presentation, provide clarification of certain information presented in the department's statement, and answer specific questions you asked in your letter of December 31, 1959.

Following Mr. Wright's testimony you asked for clarification of the statement contained in the answers to Questions 6 and 7. You also referred to one possible inconsistency between the department's present position with reference to those statements and statements made previously by Mr. Brody to your committee.

We respectfully wish to point out that there are two separate matters to be considered here and an apparent inconsistency has developed as the result of confusing those two matters. One matter is the legal or legislative authority of the Department of Water Resources to spend funds for recreational facilities. The other is once those funds have been spent, are they reimbursable; i.e., must they be collected from some source, presumably the beneficiaries.

We do not have available in the department records, a copy of the transcript containing Mr. Brody's testimony. However, it is his recollection that his testimony in response to questions was devoted to the latter point. Summarily stated, it was Mr. Brody's position, as he recalls his testimony, that assuming authority to expend funds for the construction of works for recreational uses, the department would have no authority to write off such recreational costs without specific legislative authority. If such legislative authority were generally granted, it would make no difference whether the funds used for construction had as their source either bond moneys or California Water Fund money. For example, the Department of Water Resources presently is authorized to make loans and grants to local areas to the extent of $15 million, an additional amount of $130 million would be made available under the Burns-Porter Act. The grants may be for certain recreational facilities. Since the word grant, as used in the Davis-Grunsky Act by definition connotes nonreimbursability, there would be no requirement that such moneys be reimbursed to the State by the agency to which the grant was made.

The Burns-Porter Act, which makes money available for grants and loans under the Davis-Grunsky Act provides that such money can come from either the California Water Fund or bond funds. However, irrespective of the source from which the funds are derived, the Legislature has provided that grants need not be reimbursed. If the grant is made from bond moneys, the only sources from which those bonds could be paid would be: (1) revenues from the vendible project sources, or (2) the General Fund. It is not contemplated that such costs be recovered in the rates for water, but rather, from what we construe to be the Legislature's intention, from the General Fund.

Another kind of situation is raised with respect to Item (b) of our response to Question 6. In this instance the Legislature has authorized the expenditure of funds, in connection with the construction of state water projects, for the acquisition of real property for recreational use. However, the Legislature has not expressly declared whether such expenditures are reimbursable. It is Mr. Brody's recollection that his testimony was related to this kind of situation. The view he intended to express was that since the Legislature had not expressly declared that expenditures of this kind were to be nonreimbursable, the department would be without authority to do anything other than require reimbursement.

Since Mr. Brody's expression of view, the Legislative Counsel has rendered an opinion which holds that with respect to authorized construction expenditures from the California Water Fund and in the absence of a contrary legislative direction, there is no requirement for reimbursement. If this opinion of the Legislative Counsel is controlling and if the funds for which the right of way are acquired could be identified with the California Water Fund, there would be no requirement for reimbursement. In this connection, Mr. Brody requests that it be emphasized that his expressions of opinion were without the benefit of research and matters of first impression with him when he was testifying.

After careful study of the transcript of your committee's Los Angeles hearing, it is obvious that in addition to the need for a clarifying statement in these two areas, there is also need for a summary explanation of the total recreational costs associated with state water facilities. I believe that in clarifying these points, I can also correct what might seem to be conflicts in the various statements presented to your com-

mittee by representatives of the department. I am hopeful I can do this by (A) listing the specific recreation costs associated with state water facilities that must be considered, (B) explaining the department's present authority to declare recreational costs nonreimbursable, (C) explaining how the department visualizes Burns-Porter Act funds will be spent for construction of state water facilities and (D) reviewing the department's authority to spend funds made available under the Burns-Porter Act for recreation costs associated with state water facilities.

A. Recreation costs associated with state water facilities are:

1. Dams and reservoirs specifically described in S.B. 1106 that are wholly devoted to the purposes of enhancement of fish and game resources and supplying reservoir surface or downstream recreation opportunities (dams and reservoirs in the vicinity of Abbey Bridge, Dixie Refuge and Antelope Valley), or partly devoted to these purposes (dams and reservoirs in the vicinity of Frenchman and Grizzly Valleys). In the latter case, we are concerned only with that share of the total costs of the dam and reservoir properly allocated to these purposes.

2. Grants for enhancement of fish and wildlife and for recreation as authorized under the Davis-Grunsky Act.

3. Costs of state-constructed dams and reservoirs, other than those listed in No. 1, properly allocated to fish and wildlife enhancement and to recreation.

4. Land contiguous to state-constructed water development projects necessary for public recreation development.

5. Initial onshore recreation facilities at state-constructed projects. In using the term "initial recreation facilities," we mean those facilities that would be installed at the time of project construction, sufficient in scope to accommodate the anticipated public usage for the first few years of operation. They would include, but not necessarily be limited to, camp and picnic areas, boat launching facilities, water supply and sanitary facilities, parking areas and access roads.

6. Facilities and operations necessary for the preservation of fishery resources.

7. Any additional facilities deemed desirable to enhance fish and wildlife resources as a result of the construction of a state water development project as differentiated from facilities that are required to preserve these resources.

B. Department's authority to declare recreation costs nonreimbursable:

As indicated by Mr. Brody, the department has no specific authority to declare any project cost nonreimbursable. It does, however, have general authority to fix rates and charges. The only mandatory requirement under present statutes is that project rates and charges be sufficient to pay for operation, maintenance and replacement costs, and principal and interest on bonds. There is no mandatory requirement that California Water Fund moneys be repaid. Although not required, the department in its planning has consistently contemplated that California Water Fund money spent for reimbursable project costs would be repaid with interest. Governor Brown, in his recent statement on "contract principles," has declared this will be his administration's policy. To the extent that rates and charges accomplish no more than meeting the above requirements, project costs paid from the California Water Fund could be considered nonreimbursable. Thus, the department has considerable leeway in this regard.

The department has consistently recommended that recreation costs associated with state water facilities be nonreimbursable. We have arrived at this conclusion after thorough study of federal policies and the practices and experiences of federal agencies, such as the Forest Service and National Park Service, of the policies, practices and experiences of state agencies, such as the Division of Beaches and Parks, and of local agencies. This study indicates that it is unrealistic to expect that the State will be able to recapture any significant portion of any investment it may make in costs of dams and reservoirs allocated to recreation, in land purchase for public recreation development, in initial onshore facilities and in facilities that may be required to enhance fish and wildlife resources. To attempt to do so would, we believe, seriously impair the public use of these facilities for recreational purposes, a result which, in our opinion, would be undesirable. For practical purposes, therefore, these recreational capital costs, in our opinion, must be considered as nonreimbursable.

As indicated in our statement to your committee, we feel the Legislature, in Section 233 of the Water Code, has implied that facilities necessary for the enhancement of fish and wildlife resources and public recreation of statewide significance should be nonreimbursable. *It would, however, be desirable for the Legislature to establish a clear-cut policy as to the nonreimbursability of recreation and fish and wildlife costs associated with state-constructed water projects.*

C. Department's use of Burns-Porter Act funds for construction of state water facilities:

The Burns-Porter Act makes available two immediate sources of funds for construction of "state water facilities" enumerated therein, and for loans and grants pursuant to the Davis-Grunsky Act for water projects to be constructed by local agencies, which are also defined as "state water facilities." These sources are (1) money derived from the sale of general obligation bonds, (2) money in and accruals to the California Water Fund. Present statutes require that money derived from the sale of general obligation bonds be repaid with interest from revenues of the project. As indicated above, there is no requirement that California Water Fund money be repaid either with or without interest. To the extent that California Water Fund money is used for the reimbursable costs of state water facilities, the department considers that it too should be repaid with interest, and we are proceeding on that basis in contract negotiations.

As a practical operating procedure, both bond money and California Water Fund money will be used for financing the construction of state water development facilities or for loans and grants for local water projects as required. Accounting procedures will separate reimbursable and nonreimbursable costs for purposes of pricing of project services to repay reimbursable costs with interest. In project accounting, only California Water Fund money will be considered to have been used for nonreimbursable recreation costs, while both California Water Fund money and bond money will be considered as to have been used for reimbursable costs.

D. Department's authority to use funds made available by Burns-Porter Act for recreation:

1. Funds made available under terms of S.B. No. 1106 could be used without further authorization to construct the five Upper Feather River projects. These projects have been authorized by the Legislature and are specifically defined in S.B. No. 1106 as state water facilities. The capital costs of the dams and reservoirs allocated to recreation and to enhancement of fish and wildlife resources will be borne by the California Water Fund for unlike bond fund money, California Water Fund moneys need not, under present law, be repaid. For all practical purposes, therefore, these costs could be considered as nonreimbursable.

2. The Legislature, under the Davis-Grunsky Act, has authorized grants to local agencies for costs of dam and reservoir allocated to fish and wildlife enhancement and recreation enhancement of statewide interest. The word "grant" as used in the Davis-Grunsky Act would, by definition, connote nonreimbursability. With the passage of the Bond Act grants may be made either from the California Water Fund or the Bond Fund.

3. Both bond and California Water Fund money without further authorization could be used for costs of state constructed dams and reservoirs authorized under the Bond Act in addition to those projects listed in No. 1, even though a portion of such costs might properly be allocated to fish and wildlife enhancement and to recreation.

4. Water Code Section 346 authorizes the department to acquire land for public recreational development associated with state constructed water facilities and use any available funds for this purpose. The department may proceed with such land acquisition without further authorization, using California Water Fund money for reasons mentioned in (1) above.

5. The department does not now have authority to use any money for the construction of initial onshore recreation facilities associated with state constructed projects. Water Code Section 345 provides that the department shall plan for such recreation development and present such plans to the Legislature for consideration. In approving initial onshore recreational facilities recommended by the department to be constructed by the State, the Legislature must specify the source of funds to be used for this purpose.

6. In the handling of fisheries matters at water development facilities, careful distinction must be made between preservation and enhancement. The preservation of a fishery resource requires provisions for facilities and operations that will maintain the resource at its present or preproject level. Enhancement envisions facilities and operations that will make the fisheries resource better in some way. Mr. William Warne, former Director of the Department of Fish and Game, described this distinction at length at your Los Angeles hearing.

It is the Department of Water Resources' view that project costs allocated to the *preservation* of fisheries should be fully reimbursable by the primary project beneficiaries through the sale of water and power. The policy of preservation of fishery resources is established by the Fish and Game Code and it has consistently been the Department of Water Resources' intention to comply with such policy in the same manner as any other agency involved in water resources development. Such preservation can be likened to the relocation or replacement of any property that would be destroyed or made useless because of the project. We conclude, therefore, that it is appropriate to use bond money for the construction of facilities for fisheries preservation. The costs of these protection facilities will be repaid by the project beneficiaries.

7. Any additional facilities or work, apart from the construction of the dam and reservoir itself, deemed desirable to *enhance* fish and wildlife resources through the construction of a state water development project, must receive legislative authorization before construction could proceed. The source of funds for this purpose must also be specified.

In further response to the request of Senator Regan at the hearing and your letter of December 31, we are submitting the following discussion of the terms "statewide interest" and "local interest" and their application specifically to the recreation aspects of state water projects.

While the term "statewide interest" has been used for years in connection with water resource planning, it fails to express explicitly the intended thought, for it might be considered as implying an interest that would exist only on a large or statewide area. By "state interest" is meant the fundamental responsibility of the state government to assist in both protecting and enhancing the general welfare of residents of the State—both those now living and those yet unborn. This could result in an intense or concentrated interest as well as an interest that may be widely diffused. The term "state interest" more nearly conveys this concept.

In carrying out this responsibility, it is generally recognized that the state government should act to protect the health and safety of those residing within its boundaries; to provide protection from damage to property; to protect natural resources against loss and waste and foster their conservation and proper utilization; to resolve conflicts between groups representing particular purposes and/or particular areas; to undertake needed activities that are beyond the geographical, legal, or financial scope of local interest groups; and to promote the economic growth of the State, especially the underdeveloped and/or de-

pressed areas. The term "local interest" implies essentially the same type of responsibility with respect to local governing bodies within a local area. Admittedly, this is a generalized philosophic discussion, but we are at a loss to express the thought in any other way.

With regard to state construction water projects, the department believes that there is a "state interest" in fostering and participating in the development of the recreation potential of these projects in order to make full use of natural resources and to enhance economic development. There is no question but what such facilities are used by recreationists from all over the State. There is also a local interest involved in each of these projects. At state constructed water projects, the department believes that to fulfill the state interest, the State should provide the financial resources for the costs of dams and reservoirs allocated to fish and wildlife enhancement and to recreation, for the additional facilities for fish and wildlife enhancement, for the necessary land for public recreation development, and for the initial onshore recreation facilities as defined earlier in this letter. The department believes that it should be a "local interest" responsibility to operate and maintain these initial recreation facilities and add to them if use of facilities is anticipated to be predominately of local origin, undertake further development of recreation facilities as the recreation industry becomes established in the area, maintain access roads, provide for police and public health services, and provide for the orderly development of adjoining private lands by appropriate zoning.

However, in those cases in which the state project is of sufficient magnitude or uniqueness as to be beyond the geographical, legal, or financial scope of local governing bodies, such as the Oroville and San Luis dams and reservoirs, it would be expected that the State itself, through the appropriate agency, might operate, maintain, and expand some of the recreational facilities at such projects.

It is the department's view that the foregoing indicated sharing of total costs and responsibilities for recreation development at state constructed projects, by state and local interests, is both proper and practical. It must be emphasized, however, that each project must be considered separately, for each will be unique unto itself. The department will, in each case, prepare a plan for recreation development for submission to the Legislature. The Legislature will have the opportunity of considering the department's recommendations for sharing of costs and responsibilities and make its decision.

The statements presented above provide general answers to your questions which were asked in your December 31, 1959, letter concerning recreation development at Del Valle and Airpoint Reservoirs. The department feels that the recreation costs at these dams and reservoirs, as outlined above, would be nonreimbursable and California Water Funds or other funds specified by the Legislature be used for these purposes. The department is presently preparing recreation plans for each of these reservoirs to be submitted to the Legislature when completed. We are not yet in a position to provide you with a full breakdown of cost of lands and facilities at these reservoirs.

Very truly yours,

HARVEY O. BANKS, *Director*

THE PLACE OF FISH AND WILDLIFE IN THE CALIFORNIA WATER PROGRAM *

By WILLIAM E. WARNE, Director
California Department of Fish and Game

Next year the voters of California will go to the polls to vote on a $1,750,000,000 bond issue. With its passage the State will embark on a water development program unequalled in size and complexity in this country. Under Governor Edmund G. (Pat) Brown's leadership and through action of the State Legislature this State water program has been conceived. It is bold and comprehensive and it is cut to fit the outsized requirements of California's immediate future. It has been advanced to the point it has reached today not one single day too soon. The people expect much of this program. As it moves into and through the construction stage, the people will be watching eagerly, anticipating the great benefits the program will produce.

A multitude of questions involving policy that will govern the program, costs, benefits, and repayment methods are being asked and answers must be forthcoming very soon. Your committee is involving itself in a timely manner in the study needed to provide the answers. I am pleased to come before you and to render such help as I can.

Included in the costs of development of the project will be those related to recreation, fish and wildlife. That large expenditures will be both necessary and desirable for fish, wildlife and recreation will be inescapable.

Major fish and wildlife and recreation benefits can be made to flow from the State Water Program. For millions who have learned to take their drinking water for granted, the recreational benefits may actually seem dominant. In any event, the program is truly multiple-use in its conception and any frustration of any of the uses would be unworthy of the plan.

With reference to the development of policy as it will apply to fish and wildlife and to recreation, certain basic concepts are required. I set these considerations down in an appearance before the Kerr Committee on Water Resources of the United States Senate in Los Angeles, October 16. I will state them again here:

1. No renewable resource should be destroyed in development of or in controlling another. For example, fish should not be destroyed in controlling a stream for irrigation. Mind you, I use this example deliberately, though I have been and am an irrigationist and through others might be cited. Conflicts in uses that require destruction of a resource, I can assure you from 25 years of experience in the field of water planning and projects, are rare indeed, and usually are merely apparent because of lack of advance planning. The rule I have stated is sound and is compatible with irrigation, power, flood control, domestic water supply and other uses, as well as fish and wildlife.

2. Each manipulation of a renewable resource should be made to serve the maximum number of human desires and needs. This means we have outgrown the "single purpose" project. Certainly there is no place for it in California's State Water Program.

3. Enhancement of one resource, or improvement of one use of a resource, while developing or controlling another, should be made a part of the basic plan for the primary purpose of the development.

For example, power developers should not be permitted to overlook fish and wildlife or other benefits in which they are less directly interested when they make their plans.

4. Esthetic values should be recognized in terms other than those of economic values. To do otherwise is to price all of our scenery, songbirds, wildflowers, and little fishes and beasties at no dollars and cents. That is not the way we measure their worth in our civilization. We should not try to measure their worth so in our water projects.

5. Fish and wildlife, a publicly owned resource, belongs to all of the people and, therefore, fish and wildlife is the responsibility of all of the people. When the responsibility is so diffused, sometimes the people wake up too late to do anything about a loss they have sustained. We need strong policy now and sound execution to avoid such occurrence with regard to the State Water Plan.

6. Water for fish and wildlife is a beneficial use of water. This sounds like a truism, for who would doubt the benefit of having fish in our streams or a place for the deer to drink? Remember, however, that "beneficial use" when applied by law to water has become a term of art. It is only in the last two months, since a new law has become effective in September, that fish and wildlife has been included in this significant and specialized meaning of the term.

A GOOD START HAS BEEN MADE

Legislation already on the books sets the precedent for conversion of the philosophies I have expressed into specific laws.

Section 1243 was added to the California Water Code this year and provides that: "The use of water for recreation and the preservation and enhancement of fish and wildlife resources is a beneficial use of water. In determining the amount of water available for appropriation for other beneficial uses, the State Water Rights Board shall take into account, whenever it is in the public interest, the amounts of water required for recreation and the preservation and enhancement of fish and wildlife resources.

"This section shall not be construed to affect riparian rights."

* Presented November 20, 1959, in Los Angeles before the California Senate Fact Finding Committee on Water, Senator Stephen P. Teale, Chairman.

Section 1257 of the Water Code provides that: "In acting upon applications to appropriate water, the State Water Rights Board shall consider the relative benefit to be derived from all beneficial uses of the water concerned including, but not limited to, use for domestic, irrigation, muncipal, industrial, preservation of fish and wildlife, recreational, mining and power purposes and may subject such appropriations to such terms and conditions as in its judgment will best develop, conserve, and utilize in the public interest the water sought to be appropriated."

Section 233 of the Water Code says: "No plans or proposal for authorization of a project for construction or operation by the State shall be submitted to the Legislature by the Department of Water Resources unless the plans or proposal includes (1) the comments and recommendations, if any, of the Department of Fish and Game and (2) provision for any water or facilities necessary for public recreation and the preservation and enhancement of fish and wildlife resources that the Department of Water Resources determines to be justifiable in terms of statewide interest, and feasible, as a nonreimbursable cost of the project."

Sections 12880 through 12891.1 of the Water Code provides the mechanics and the funds for a large program of local water development. It is particularly significant that among other things this state aid to local projects program provides for grants for (a) the part of construction costs of the project properly allocated to the *enhancement* of fish and wildlife that are incidental to the primary functions of the project and (b) the construction cost of the dam and reservoirs of the proposed project properly allocated to recreational functions of statewide interest that are incidental to the primary functions of the project.

Several of these provisions of the law were recently adopted by the Legislature.

COMMON REFERENCE POINTS ESSENTIAL TO UNDERSTANDING

Let us consider some definitions in order to be sure we have a common understanding of problems and proposals. Some distinctions between recreation, fishing and hunting on the one hand and fish and game on the other, are needed. Most certainly, otherwise, my discussion would result in adding to an already unfortunate confusion. Lumping of fish, game, hunting, fishing and other considerations into the catchall term of "recreation" has been responsible for many misunderstandings.

To establish some common reference points and terminology, let us define a few terms.

"Fish and Wildlife." The renewable resources of wild animal and fish life belonging to the people—here the people of the State of California. This is a commonly owned resource which survives in, or whose existence depends upon water in varying quantities. "Game" are those few species of wildlife which may be taken by hunting.

"Fish and Wildlife Measures or Facilities." Those measures or facilities taken or constructed and operated for the maintenance or enhancement of fish and wildlife or the mitigation of losses thereto in connection with water project development.

"Hunting and Fishing." These are methods of harvesting or utilizing the natural resources of fish and game. Hunting and fishing for sport are considered recreation. Hunting and fishing for food and profit are considered commercialized harvesting of the resource.

"Recreation." Water associated recreation is comprised of all of those outdoor enjoyments obtained by people as a direct or indirect result of the presence of water including such things as water skiing, swimming, boating, sport fishing, hunting, esthetic enjoyment, as through camping and picknicking, etc.

"Recreation Measures or Facilities." Those measures or facilities taken or constructed and operated for the purpose of making water associated recreation available and usable by the public.

"Maintenance (or protection) of Fish and Wildlife Resources." This refers to the measures necessary to protect the existing fish and wildlife resource, and to maintain natural productivity in connection with a water development project.

"Mitigation (or compensation) of Fish and Wildlife Losses." Those measures taken or facilities constructed and operated for increased production of fish or wildlife as compensation for an unavoidable loss to the resource as a result of water development. Provisions for a fish hatchery to compensate for lost spawning areas; provision of a larger minimum pool in a reservoir to compensate for reduced flows in the project stream, such can be considered as mitigation measures.

"Enhancement of Fish and Wildlife." This means improvement of conditions for fish and wildlife; making the habitat better than it was under natural or preproject conditions resulting in increased post-project populations of fish or game. Improved streamflow maintenance below a project dam would be a typical enhancement feature.

Separation of "Fish and Wildlife" From "Recreation"

From the foregoing definitions I believe you can begin to see the dangers of generalizing under the term of "recreation," especially when generalization involves a discussion of cost repayment.

Fish and Wildlife Maintenance Costs

The maintenance of fish and wildlife in the process of developing water resources has long been recognized as the responsibility of the sponsor of the project in question. Very old sections of the Fish and Game Code relate to this. The maintenance of the State's fish and wildlife resources will be incorporated into the planning and will be one of the accepted features of the state water program.

The constructing agency, whether public or private must provide downstream water release or take other measures or provide suitable facilities to prevent reduction in fisheries and wildlife values from the construction of any project. This policy is equitable and has application to state projects.

The costs of maintaining existing resources are considered an integral part of the cost of the project and appropriately should be included in the costs allocated to each major project purpose, for example, municipal water supply or irrigation. Thus such costs would become repayable by the recipients of project vendible services just as would the cost of the concrete that goes into the dam. I believe there is question that state funds can be expended for such purposes. If any such questions exist anywhere they should be specifically dispelled by action of the Legislature.

Cost of Mitigating Losses to Fish and Wildlife

Mitigation of unavoidable or accepted losses to fish and wildlife will also be a standard feature of state water development as is maintenance. Similarly, mitigation costs should also be considered part of the basic project costs repayable by the recipients of project vendible services such as power or flood control.

To our knowledge no legislation has ever been enacted which authorizes any water development agency, either public or private, to destroy fish and game resources without compensation or mitigation. The principle seems well established. There are examples of failure to apply it, however. There should be no such failures in the execution of the State Water Plan.

Cost of Enhancement of Fish and Wildlife

Unlike maintenance or mitigation, enhancement of fish and game should not be repayable by the recipients of vendible project services. Enhancement of the publicly owned fish and game resources should be financed by the State on a nonreimbursable basis. Where enhancement is desirable and justified, it should be included as a project purpose to be paid for by the people from General Fund appropriations and not repayable by the water users. Enhancement of fish and game should be considered as a wise investment in the improvement of a state resource or property. The Department of Fish and Game is financed by revenues of licenses and fees, excepting that capital improvements are financed through Wildlife Conservation Board funds, made available from the tax on horseracing.

Fishing and hunting licenses cannot be increased and decreased to meet the needs of construction programs governed by considerations of the State Water Plan, even if it were desirable or theoretically necessary. Since the resource is owned by all the public, warranted expenditures in enhancing it should be borne by all. This is the de facto breakdown of the present financing of the department's activities. Hunters and fishermen pay their fees for their specialized use of the resources involved.

Recreation Costs

Now we turn to recreation, that big mushrooming, booming activity which is big business in California and is apt to be bigger. Recreation in all its phases must be looked upon as a desirable, beneficial use of both undeveloped and developed watersheds. With increased leisure time and with growing complexities in our daily lives, recreation can only become each year more important to each of us and to all of us.

Water development, especially that which results in the creation of large, low elevation reservoirs, automatically creates a recreation attraction for swimmers, boaters, water skiers, and fishermen, and often waterfowl hunters. Such uses are apt to come whether on a planned or unplanned basis. I urge the more orderly, economical, and public service approach of the planned program. So much more in the way of use then can be accommodated.

I want to make a special point of acquiring land for a freeboard around reservoirs and other water sites as a routine practice in the State Water Plan. Unless this be done, the public may and often will be denied recreational use of the project facilities. It should be a cardinal principle that the construction agency must protect the public interest by providing a freeboard for public use and development. This, I believe, should be a part of the project cost.

Facilities necessary for an orderly use of the recreation potential of a given water project should be constructed as a part of the project. These include toilets, campgrounds, docks, and boat ramps, to name some that are typical. I believe their cost should be borne by the State as a whole and not charged against the contractor for vendible uses.

Local Participation Desirable

I support those who advocate operation of state constructed recreational facilities by and at the expense of local governmental agencies under agreements which would insure satisfactory operation and care of the facilities. Generally speaking, and based on our admittedly meager experience in this field, I would be inclined to favor a program whereby the costs of operation were defrayed by fees levied *on those using or benefiting from the recreation facilities.* Although repayment of capital costs of recreation facilities through fee charging might sound attractive, I believe it would be unwise to adopt it as a policy in the state water development program. Assurance of repayment capacity would be extremely difficult to forecast and could very well become the damper on a program badly needed by the general public.

Action Has Been Taken

The Department of Fish and Game has already gone into action to fulfill its obligations under the provisions of the law on water planning and use. We are reviewing, commenting on, conducting studies on, and making recommendations for the maintenance and enhancement of fish and wildlife resources and proposals for mitigation of losses thereto on all segments and on each unit of the California Water Plan.

We are seeking better ways to maintain and improve these resources in connection with the plan. For instance, we are carefully weighing the possibilities of developing artificial spawning beds for salmon below Oroville Dam on the Feather River, and energetically seeking other means of maintaining the valuable salmon and steelhead runs of the Sacramento River.

We will not lose the Sacramento runs as we did those in the San Joaquin.

We will seek to obtain maximum utilization and production of fish in our existing reservoirs and in the scores of new reservoirs and other project waters envisioned in the state plan. These waters probably must provide for most of California's future freshwater angling, if population trends are the criteria.

The potential of these waters is high and fishing can almost certainly be improved in them. We have detailed plans ready to go for experimental reservoir management to create this better fishing. We will seek to learn how to "farm" these aquatic pastures more effectively than in the past.

The Department of Fish and Game has been adjured and encouraged to make these preparations by the Legislature, which has enacted new laws, by Governor Brown, who has earnestly sought each of the affected departments to be alert and active in efforts to make his water plan fulfill its great promise, and by the Fish and Game Commission, which has adopted succinct policy guides for us.

I, personally, see the possibilities that are opened, and because of my long connection with water development, get excited about realizing them.

Never before has so young a civilization as ours in California had opportunity for developing vast natural resources in a way planned to bring maximum benefit to its people. The techniques have all been developed for us and are known. It is not necessary for us to narrow our water development plans to single purposes and to experiment and suffer painful losses. We can look far to the future and mold our splendidly conceived water development projects for the preservation and improvement of all values, including the esthetic, recreational and fish and wildlife values so often in the past ignored or overlooked.

ANSWERS TO QUESTIONS REGARDING THE FINANCING OF CAPITAL AND O. & M. COSTS FOR FISH AND WILDLIFE AND/OR RECREATION FACILITIES IN THE STATE WATER PROGRAM *

By William E. Warne, Director
California Department of Fish and Game

A number of questions have been asked which although answered indirectly in the text of my presentation will be answered specifically for purposes of assisting the committee.

Before answering the questions I call to your attention the following paragraph which prefaced the listing of questions by the committe's staff.

> "The Burns-Porter Act gives no specific authorization for expenditure of funds for fish and wildlife and/or recreational facilities in the state water program. However, as a result of studies and planning surveys, the Department of Water Resources has estimated that expenditures for these purposes might amount to about 3 percent of total capital expenditures for the state water facilities as defined in the act. Based on the present estimate of this total cost, capital expenditures for recreational fish and wildlife would amount to about $60 million."

Here is an example of an unfortunate combination of the terms "fish and wildlife" and "recreation" which might be interpreted by some people to mean that because of the absence of specific authorization in the Burns-Porter Act it will be impossible to expend funds for the maintenance of fish and wildlife resources and the mitigation of losses to these resources in the development of the state water program. I am confident that it is not intended to infer by such wording that anyone may destroy fish and game resources in the development of the state water program. It would be indeed an unfortunate situation, and one which I am certain would not be tolerated, if the fish and wildlife resources of this State were to be protected during the course of development of the state water program only to the extent that special legislation was enacted to appropriate the funds for such purposes. The paragraph in question would be satisfactory if the words "Fish and Wildlife and/or" would be deleted. There are other enactments bearing on this point.

Following are listed your questions and my replies:

Question 1: "Would you comment on the degree to which any particular source could contribute to capital and O. & M. costs of fish and game and recreational facilities?"

Answer: A simple, single answer to this question would be inappropriate and inadequate. We must, according to the definitions described in my previous statement, divide the answer to this question into those relating to the fish and wildlife resources and those related to recreation. Capital and O. & M. costs incurred to mitigate losses and damages to fish and wildlife resources or to maintain these resources are legitimate project costs charged to the primary purposes of the project. Thus such costs are repayable by the recipients of the project's vendible services.

The costs of measures and facilities for the enhancement of fish and wildlife resources and the O. & M. costs for such features are a nonreimbursable cost borne by the State from general funds. Fish and wildlife enhancement costs would therefore be considered as a financial responsibility of the people of the State as a whole which is considered equitable in view of the public ownership of this resource. Capital costs of facilities or measures for the improvement of recreation are the responsibility of the state on state constructed projects. It may be possible under some circumstances to obtain repayment of such costs in view of the fact that such improvements can *under some circumstances* be revenue producing. A capital cost repayment procedure would require that the various beneficiaries of recreational enhancement be distinguished and appropriate fees established for

* Submitted to the California Senate Fact Finding Committee on Water, Senator Stephen P. Teale, Chairman, at Los Angeles, November 20, 1959.

the recreation facilities or services rendered by the improvements.

Generally speaking a program of recreational development based solely upon repayment capacity may be unduly inhibitive to a recreation development for the benefit of the state in connection with the state water program. Further and very careful study should be made of this specific question before a definite conclusion is drawn.

I favor obtaining repayment of O. & M. costs by the direct beneficiary of recreational improvements.

To summarize, the source of funds for the capital and O. & M. costs of fish and game maintenance and the mitigation of losses thereto in connection with the development of the state water program must come from the same source of funds made available for the physical construction of the program's project works. The costs of enhancement of fish and game resources and relating O. & M. costs should come from general funds appropriations. The capital and O. & M. costs of recreational facilities should be provided by special appropriation either as a state sponsored development or on a beneficiary repayment basis depending upon further study. The results of such studies would give a basis for a better determination of appropriate sources of funds for such costs.

Question 2: "In your opinion could fees from users, lessees, etc., finance all capital and O. & M. costs of recreation facilities?"

Answer: Again let us make sure that we are distinguishing capital costs and O. & M. for fish and game from those for recreational facilities. As previously indicated the costs of fish and game maintenance and mitigation of losses thereto should be financed from the fees charged for project vendible services such as electrical power and irrigation water. As for enhancement of fish and game, the capital and O. & M. costs should be borne by the General Fund of the State and would not be repayable by any of the specific beneficiaries. The costs of the recreation facilities or at least the capital costs could be considered as a state investment. In the general improvement of the recreational needs of the State we would favor the repayment of O. & M. costs of such recreation facilities from fees charged to the users of such facilities and improvements.

Question 3: "If not, could this source finance O. & M. costs alone?"

Answer: This question answered in No. 2 above.

Question 4: "What yardstick would you use for setting users' fees?"

Answer: We believe that users' fees should be set on the basis of the service rendered in the case of state constructed facilities. The fees charged should be consistent with the supply and demand for the type of recreation facilities or services. Very different yardsticks will be necessary depending upon whether or not repayment of capital costs are included. In any event the fees charged should be directly related to the facilities or measures or services directly resulting in an improvement of the recreation usage of the area.

Question 5: "Do you see an inequity in charging fishermen fees for a state license and further fees for use of the facilities created by the state water system?"

Answer: I can see no inequity in charging a fisherman fees for a state fishing license and further fees for use of the facilities specifically constructed and operated for the purpose of providing better usage of an area for general recreational purposes. I would consider it *not* appropriate, in view of the state constitutional provision which guarantees the right of people to fish in the waters of the State, to charge fees for simple access to the waters involved in or created by the state water system. In other words the public should be allowed free access to these areas and should be charged only for those physical improvements such as improved camping areas, picnicking facilities, boat docking facilities and sanitary facilities.

Question 6: "Would it be desirable or equitable to require local governments to contribute—from tax funds—to capital costs of O. & M. costs of these recreational facilities?"

Answer: Again my answer to this question is restricted to recreation facilities as defined in my opening statement. I believe it would be equitable to do this in the case of recreation facilities; however, I believe the matter should be left somewhat open pending the report of the California Outdoor Public Recreation Committee which I hope will give guidance on this matter. I believe many groups who have studied this problem have come to the same conclusion that it would be equitable to have local governments contribute to the development and operation of recreation facilities at state water program projects.

Question 7: "To what extent is it economical and desirable to construct fish and game recreational facilities simultaneously with construction of the main works of the state water system?"

Answer: It is not only economical and desirable but it is usually essential that fish and game maintenance and mitigation facilities be constructed simultaneously with the construction of the main works of the state water system.

Similarly it is generally much more economical to construct fish and game enhancement facilities during the construction stage.

As for recreational facilities perhaps the factor of greatest importance during the preconstruction stage is the acquisition of land. I believe the State's sad experience at Folsom Reservoir is sufficient justification and basis for a concerted program of planning the land needs for recreation development into the preconstruction stages of the state water system development.

Actual construction of recreation facilities can come during or even after the construction of the main works. Generally I believe experience will show that at least basic or initial recreation facilities will be needed immediately upon completion of most state water system works.

Again the heavy recreation use prior to the availability of suitable sanitary and other facilities at federal projects should be sufficient warning to the State to have an adequate program planned.

Question 8: "Who should administer these recreational areas, a state agency such as the Department of Water Resources, the Department of Fish and Game, the Division of Beaches and Parks; or a local agency such as a county or special district?"

Answer: Generally speaking we would favor the operation of *recreation* areas by a local governmental agency such as a county or special park or recreation district. If the park has special esthetic or park type significance of statewide value and interest perhaps the Division of Beaches and Parks would be the most appropriate agency to operate the facility. In some cases there may be facilities or areas which will be developed specifically for fish and wildlife. Such facilities as fish hatcheries or spawning channels, might be most efficiently operated by personnel of the Department of Fish and Game. Similarly areas on which a specific program of fish and game management is being carried out might be operated by Department of Fish and Game. For example extensive waterfowl development and management for waterfowl hunting to prevent depredation of nearby crops may be initiated in the area of the Oroville Dam afterbay. Such a program might be most efficiently operated by the Department of Fish and Game.

STATEMENT TO SENATE FACT FINDING COMMITTEE ON WATER

By Edward F. Dolder, Deputy Director
California State Department of Natural Resources

Los Angeles, California, November 20, 1959

Before seeking to answer questions raised by this committee in its study of recreational aspects of the state water plan I would like to establish certain basic concepts which condition my answers: These are:

1. Demand for recreation in the outdoors is so great and will become so much greater that adequate recreation opportunities must and will be made available in some manner and by some means.
2. There is a method or combination of methods for financing and administering outdoor recreation which is more economical and satisfactory than present day methods.
3. Legislators and other public officials working with interested citizen groups have the responsibility to identify and recommend the method which will be most economical and most satisfactory to the State as a whole.
4. Recreation benefits accrue to two classes of population groups. One is the per capita group, or society as a whole; the other is the user groups who actually occupy and consume the recreation opportunity. Cost of providing recreation facilities and opportunities should be apportioned in proportion to the benefits. Costs attributed to the per capita population group should be borne on a per capita basis and financed from the general tax fund or from special funds levied as nearly as is possible on a per capita basis. Those costs attributed directly to user groups should be borne as equitably as possible by the actual users.

Now let me deal with the specific questions for which you are seeking answers:

1. Would you comment on the degree to which any particular source could contribute to capital and O. & M. costs of fish and game and recreational facilities?

   Many sources probably will have to be drawn upon. The problem is how to establish the relative responsibiilty of the several sources. I would suggest that the committee become completely familiar with the operation of the flood control reservoirs of the Muskingham Water Conservancy District in Ohio. They probably have the best record of income from operated facilities of any complete self-contained reservoir unit in the United States. The income comes from fishing, picnicking, camping, fishermen's cabins, vacation cabins, boating and other things operated adjacent to and within the permanent pool area of the reservoir.

   Your first question is one of the principal ones to be answered by the California Public Outdoor Recreation Plan Committee which now is in the final stages of its three-year study and will be reporting to the Legislature next March. I am sure your committee will study this report carefully as a part of your overall investigation.

2. In your opinion could fees from users, lessees, etc., finance all capital and O. & M. costs of recreational facilities?

   The answer generally is no. In most cases the income from fees probably would be sufficient to cover cost of maintenance, operation and minor additional capital improvements but not the original investment. An exception to this might be marinas and small craft harbors.

3. If not, could this source finance O. & M. costs alone?

   I have largely answered this question in answering Question No. 2. Another exception where it may be possible to finance more of the original capital outlay is where heavily used areas are located near major centers of population.

4. What yardstick would you use for setting user fees?

   Direct fees should be for those functions for which the user can see an obvious facility expense which is in proportion to his use—such as a swimming beach, boat-launching ramp and camp or picnic site. It is difficult to sell the idea of charging the public to enter on public property or to use roads or parking areas; although the public will pay to park in public recreation areas located in the heart of heavily populated regions of the State where they are accustomed to paying for almost all parking anywhere.

5. Do you see any inequity in charging fishermen fees for a state license and further fees for use of the facilities created by the state water system?

   No. There would be an inequity if fishermen were charged for fishing in addition to the payment of their license fee but charges should be made for launching of boats, rental of boats, camping and cabin facilities, etc. There should be no charge for their access. Access to public fishing waters is the right of every citizen of the State.

6. Would it be desirable or equitable to require local governments to contribute—from tax funds—to capital costs or O. & M. costs of these recreational facilities?

   Because water projects are not related to county lines and often involve several counties, it might be more equitable to collect and operate

on a statewide tax or collection basis. Total use and the resulting expenses of construction, operation and maintenance is proportional to population and length of season and to some degree the availability of the recreation resource. In other words, the cost of recreational facilities should first be proportional to population; secondly, be modified by length of season in the area in which the population resides, and thirdly, perhaps be further modified in proportion to the population's proximity to the facility.

Some local governments may wish to assist in development of facilities in order to provide strong attractions to vacationers and recreationists from outside the local area. Provision should be made for this type of participation. Again we await the recommendations of the California Public Outdoor Recreation Plan Committee in this field.

7. To what extent is it economical and desirable to construct fish and game and recreational facilities simultaneously with construction of the main works of the state water system?

It is most economical to acquire land and integrate total development with the construction of the main works of the state water system. The Department of Water Resources now is authorized to plan for the acquisition of recreational lands and the development of such recreational facilities as will assure unhindered public use of both the facilities and the water surface.

They are also authorized to plan for the operation of these areas and facilities by agencies other than the Department of Water Resources. It should be the Legislature's stated policy to provide adequate upland above high pool so that the State's interest and investment will be protected and the recreational needs of its people will be provided for far into the future. We must take steps to insure that a privileged few do not obtain exclusive use of valuable recreational lands bordering the reservoirs of our water plan.

The Department of Water Resources may plan and recommend on a broad progressive scale to meet this need but the Legislature must, in the final analysis, be willing to make funds available for adequate acquisition of land before values mushroom because of land enhancement by the reservoir. As California's wildlands become more and more managed to meet the needs of our rapidly growing population for basic natural resources the lands surrounding the reservoirs will become principal centers of outdoor recreation equal in importance to the ocean beaches. We must acquire the land around these reservoirs to meet the recreational needs of 1980 and the year 2000.

8. Who should administer these recreational areas, a state agency such as the Department of Water Resources, the Department of Fish and Game, the Division of Beaches and Parks; or a local agency such as a county or special district?

The closer the authority for direct operation can be to the users the more economical that operation will be and the more the users will co-operate with the operators. However, for uniformity in planning and best overall integration of recreation, the site plans and overall development plans, as well as general rules and regulations for operation, should be the responsibility of a statewide agency. Once the problem of collecting and distributing the money to provide recreation is solved and divorced completely from actual administration, then the most economical administration probably is that which is most "grass roots" in nature.

I have some additional comments to make to the committee in relation to financing. Perhaps the most economical overall financing plan would be to establish a statewide recreation license which would permit participation in all public recreation areas. In addition, there could be activity stamps which would pay for such activities as boating, camping, picknicking, swimming, etc.

This collection system could be handled as are the present fishing and hunting licenses. The State could use funds derived from this system to acquire property, do master planning and construction planning, provide overall supervision and regulations and, in addition, distribute funds as they are available to the local operating agencies in accordance with an equitable formula. The local operating agency could utilize these funds to pay for additional minor construction, operation and maintenance in accordance with operating agreements with the State.

All recreation areas could carry uniform nomenclature and be administered by uniform rules and regulations with necessary local supplementary regulations to provide for local problems. All employees could be selected through the State Personnel Board, wear uniform dress and follow uniform operating procedures. The State could make routine inspections to see that operating agreements were being complied with and that construction and maintenance was in accordance with state master planning.

I believe the state agency with the greatest "know-how" in the field of recreation operation is the Division of Beaches and Parks. Revised policies of the State Park Commission, developed within the last several months, establish recreation areas as basic units of the State Park System. Following is a quotation from the general policies of the commission on this subject:

"2. Criteria For State Parks

"All state parks should be classified into one of the following three categories:

"1. Scenic Parks

"2. Recreational Areas

"3. Historic Sites

"Recreational Areas

"A state recreational area should be large, accessible, of State rather than local importance, with wide drawing power, and capable of providing adequate nonurban recreational opportunity for large numbers of visitors. The development of nonurban recreational activities such as camping, picnicking, swimming, boating, fishing, etc., are the primary reasons for operating the areas. Geographical distribution and relationship to concentrations of population should be important factors in the selection of recreational areas."

In closing I wish to speak of a major factor that must be considered in planning and developing reservoirs of the state water plan. Reservoirs are so placed as to collect as much water as is possible from natural drainage areas or watersheds. If the reservoir is to function properly over the longest possible time, for storage, flood control, power and recreation, the forests, brush fields and rangelands of the watershed above it must receive a higher degree of fire protection than normally is provided to wild lands of the State. Failure to provide this higher degree of protection will result in lower quality watersheds, less capable of absorbing and slowly releasing ground water, more intense runoff of floodwaters, and rapid soil erosion and sedimentation in reservoirs. Special attention should be given by the State to land management practices on the watershed of each reservoir as it is developed.

In the field of forest fire prevention and control for the protection of the watersheds I recommend:

More basic research in cover-type manipulation and management, i.e.; (a) how to successfully convert a brush-type to a cover-type of less difficult protection and yet one which will adequately stabilize the soil, or how to economically break up great expanses of explosive cover-types in order to minimize fire losses. The State Division of Forestry and U. S. Forest Service are co-operating in this research at the present time but on a very inadequate scale; (b) augment research in the "snow-pack" area in the field of timber management in order to secure maximum water runoff over a maximum period of time. In this field the State Department of Water Resources and U. S. Forest Service are presently co-operating in field research; (c) until the findings of research bear more fruit, additional fire protection funds should be made available for the watersheds of the state reservoirs.

APPENDIX IV

A number of legal questions in the prospective application of terms of Chapter 1762 were raised during committee hearings and discussions. These questions were referred to the office of the Legislative Counsel and a series of 10 opinions were rendered which are contained here. The Legislative Counsel also prepared, at the committee's request, a review and analysis of a typical water service contract between the Federal Bureau of Reclamation and an irrigation district which is attached.

WATER DEVELOPMENT—No. 398

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL

HONORABLE STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE:

Question: You have requested our opinion as to the effect of Section 233 of the Water Code (as added by Chapter 2047 of the Statutes of 1959) in view of the authorization of water development projects contained in Chapter 1762 (S.B. 1106) of the Statutes of 1959. In other words, as to such authorized projects is there any need for a project authorization report to the Legislature by the Department of Water Resources?

Opinion: It is our opinion that no further project authorization report need be submitted for any project authorized by Chapter 1762 and financed by funds made available thereunder. However, if the Department of Water Resources deems it desirable to secure further legislative authorization for construction of a project, it would, in submitting the plans or proposal for authorization of such project, be subject to the requirements of Section 233 of the Water Code.

Analysis: Section 233 of the Water Code provides as follows:

> "No plans or proposal for authorization of a project for construction or operation by the State shall be submitted to the Legislature by the Department of Water Resources unless the plans or proposal includes (1) the comments and recommendations, if any, of the Department of Fish and Game and (2) provision for any water or facilities necessary for public recreation and the preservation and enhancement of fish and wildlife resources that the Department of Water Resources determines to be justifiable in terms of statewide interest, and feasible, as a nonreimbursable cost of the project."

However, Chapter 1762 of the Statutes of 1959 enacts the California Water Development Bond Act (Ch. 8 (commencing at Sec. 12930), Pt. 6, Div. 6, Wat. C.) and provides for its submission to the people for approval at the general election in November, 1960. If approved by the people this act will authorize and provide funds for the construction of the State Water Resources Development System, which consists of the following:

(1) The State Water Facilities (consisting of certain enumerated facilities, including the Oroville Dam and Reservoir and certain facilities to transport water from the Sacramento-San Joaquin Delta to various termini).

(2) Facilities now or hereafter authorized by the Legislature as a part of the Central Valley Project.

(3) Facilities now or hereafter authorized by the Legislature as a part of the California Water Plan.

(4) Facilities deemed necessary and desirable by the Department of Water Resources to meet local needs, including flood control, and to augment the supplies of water in the Sacramento-San Joaquin Delta and for which funds are appropriated pursuant to the act (Sec. 12931, Wat. C.).

Since all of the projects falling within any of the above categories are authorized for construction (Sec. 12938, Wat. C.), there will be no necessity for the department to submit a project authorization report to the Legislature as to any of such projects financed by funds made available under Chapter 1762.

It should be noted, however, that Section 12931 provides for further legislative authorization of facilities for construction. If the Department of Water Resources desired to secure such further legislative authorization, it would, in submitting plans or proposals for such authorization, be subject to the requirements of Section 133 of the Water Code.

Very truly yours,

RALPH N. KLEPS, *Legislative Counsel*
By RAY H. WHITAKER, *Deputy Legislative Counsel*

WATER DEVELOPMENT—No. 399

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, November 12, 1959

HONORABLE STEPHEN P. TEALE
West Point, California

Dear Senator Teale:

Question: You have asked whether Chapter 1762 (S.B. 1106) of the Statutes of 1959 (which enacts the California Water Resources Development Bond Act and provides for its submission to the voters for their approval) or any other statute limits the power of the Department of Water Resources to make any particular costs of any of the facilities to be constructed under Chapter 1762 nonreimbursable, and what limitations there may be on the power to make such costs nonreimbursable.

Opinion and Analysis: Chapter 1762 contains no provision whatsoever with respect to reimbursability or nonreimbursability of the various costs of the facilities to be constructed thereunder. Section 12937 of the Water Code does direct the Department of Water Resources to enter into contracts with public or private entities for the sale, delivery, or use of water or power, or for other services and facilities, made available by the facilities to be constructed pursuant to Chapter 1762. However, it does not follow, in our opinion, that all of the benefits to be afforded by the facilities must be covered by a contract. Certain of these benefits, such as flood control and many recreational and fish and wildlife preservation and enhancement benefits, might not be susceptible to such treatment.

The only other statutory provision bearing on this question is Section 11455 of the Water Code. This section is contained in the law applicable to the Central Valley Project and, along with the other statutory provisions applicable to the Central Valley Project, is made applicable to the construction and operation of facilities under Chapter 1762 by Section 12931 of the Water Code. Section 11455 provides as follows:

> "The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and which will provide at all times sufficient funds for redemption of all bonds and payment of interest thereon, as and when such costs and charges become due and payable."

Again, we do not believe that this section, any more than Section 12937 discussed earlier, requires that all benefits to be afforded by the facilities constructed pursuant to Chapter 1762 be covered by contracts providing revenue to pay off project costs.

We are of the opinion, therefore, that there is no existing statutory limitation upon the power of the department to make certain costs of the Chapter 1762 facilities nonreimbursable.

Turning to possible constitutional limitations upon this power, one such limitation is, in our opinion, the prohibition in Section 31 of Article IV of the California Constitution against gifts of public funds. The fundamental test of the constitutionality of a statute requiring the use of public funds is whether the statute is designed to promote the public interest, as opposed to the furtherance of the advantages of individuals. If an expenditure is for a public purpose, it is not considered a gift within the prohibition of Section 31, Article IV of the California Constitution (*City of Oakland* v. *Garrison*, 194 Cal. 298), even if incidental to the main purpose of the act authorizing the expenditure, there results an advantage to individuals (*Veterans' Welfare Board* v. *Jordan*, 189 Cal. 124; *Patrick* v. *Riley*, 209 Cal. 350).

Thus, if the allocation of costs of a project as nonreimbursable resulted in an expenditure which is not for a public purpose, it would constitute a violation of Section 31 of Article IV of the California Constitution.

It should be noted, in this connection, that it is possible that the power of the department to make any particular cost of any of the facilities to be constructed under Chapter 1762 nonreimbursable could be restricted by future legislation or by provisions contained in the bond indentures under which bonds are issued to finance such facilities.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel
By RAY H. WHITAKER
Deputy Legislative Counsel

WATER RESOURCES DEVELOPMENT—No. 400

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, November 3, 1959

HONORABLE STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE:

Question: You have asked whether, under the California Water Resources Development Bond Act* (Ch. 8 (commencing at Sec. 12930), Pt. 6, Div. 6, Wat. C., added by Ch. 1762 (S.B. No. 1106), Stats. 1959), which will be submitted to the voters for approval at the General Election in November 1960, contracts for the sale of water could be entered into which provided for the increasing or decreasing of water rates depending upon specified future events (such as the repayment capacity of the water users). As we understand it, you have in mind contracts which would, over the term of the contracts, provide for the repayment of the costs allocated to the contracting party, but at variable rates during such term. We understand that the Bureau of Reclamation is authorized to enter into contracts of this type (see 43 U. S. C. A. 485h, subd. (d)).

Opinion: In our opinion the answer to your question is in the affirmative.

Analysis: Under Section 12937 of the Water Code, the Department of Water Resources is authorized, subject to such terms and conditions as the Legislature may prescribe, to enter into contracts with public or private entities for the sale of water or power. It is expressly provided that such contracts may not be impaired by subsequent acts of the Legislature so long as bonds are outstanding, and the revenues from such contracts are pledged for the purposes specified in the bond act.

There is no express provision in the bond act as to the manner in which contract rates are to be established. Thus, subject to any existing statutory or constitutional restrictions, and to any future restrictions which may be imposed by the Legislature, it would appear that the Department of Water Re-

* Hereinafter referred to as the "bond act."

sources could adopt a system of water rates such as described by you.

The only existing statutory restriction as to the setting of contract rates of which we are aware is that contained in Section 11455 of the Water Code. This section is one of the statutory provisions relating to the Central Valley Project, which provisions are expressly made applicable to the construction and operation of the State Water Resources Development Facilities pursuant to the bond act (Sec. 12931, Wat. C.). Section 11455 provides as follows:

> "The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and which will provide at all times sufficient funds for redemption of all bonds and payment of interest thereon, as and when such costs and charges become due and payable."

While this section generally would direct the department to establish such contract rates as would, together with other available revenues, provide sufficient funds to pay operation, maintenance, and replacement costs, and to pay the principal and interest of bonds issued to finance the construction of the State Water Resources Development System, we do not believe that this would probibit the type of contract to which you have referred.

Furthermore it should be noted that Section 11455 does not require that the rates of *each* contract with *each* user of one of the services or facilities of the State Water Resources Development System be sufficient to pay a proportionate share of the operation, maintenance, and replacement costs, and bond servicing requirements. The section is instead a general direction that such costs are to be paid from total system revenues, together with other revenues which may be available.

Two possible constitutional objections might be raised with respect to this type of contract. First, it might be contended that if, under such a contract, the rates are at a future date decreased, this might constitute an impairment of the contract between the State and the holders of bonds issued pursuant to the bond act. Both Section 10 of Article I of the United States Constitution and Section 16 of Article I of the California Constitution prohibit impairment of contracts by the State. However, it is well settled that existing statutory provisions would be a part of the contracts between the State and the bondholders (*Welch* v. *Cross*, 146 Cal. 621, 624; *Lelande* v. *Lowcry*, 26 Cal. 2d 224, 226). Since, as we have pointed out, under the existing statutes the department is authorized to enter into contracts providing for variable rates, it follows that there would be no impairment of the contracts between the State and the bondholders by virtue of decreases in rates under such contracts.

The other possible constitutional objection is that if rates were decreased to such an extent that water is being supplied to users at less than the cost to the State of providing such water, this might constitute a gift of public property in violation of Section 31 of Article IV of the California Constitution. If, as we understand it, the contractor with the State under such a contract providing for variable rates will pay the cost of the project allocated to such contractor, even though the rates may during portions of the term of the contract provide revenue which is lower than such cost, it is clear that there is no gift of public property involved.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

By RAY H. WHITAKER
Deputy Legislative Counsel

WATER DEVELOPMENT—No. 402

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, November 30, 1959

HON. STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE:

Question: You have asked whether, under Chapter 1762 (S.B. No. 1106) of the Statutes of 1959 (which enacts the California Water Resources Development Bond Act and provides for its submission to the voters for their approval), water may be sold for agricultural use at less than an amount which would return revenues sufficient to pay the proportionate share of the cost allocated to such use (hereinafter referred to as sales at less than cost).

You have also asked, if such sales are authorized, whether such sales at less than cost may be made to particular districts or areas and not to other districts or areas.

Opinion and Analysis: It should be recognized that the problems of allocating costs and pricing services are matters of economics, consideration of which we cannot undertake. For the purpose of this opinion, we have assumed, therefore, that both costs attributable to facilities to conserve and distribute agricultural water and prices to return those costs can be determined with a mathematical certainty.

Considering first the existing law, Chapter 1762 itself contains no provision whatsoever with respect to allocation of costs of the facilities of the State Water Resources Development System or to the rates to be charged for the various services and facilities provided by such facilities. Section 12937 [1] merely directs the Department of Water Resources to enter into contracts with public or private entities for the sale, delivery, or use of water or power, or for other services and facilities, made available by the facilities to be constructed pursuant to Chapter 1762.

[1] All section references are to the Water Code.

The only existing statutory restriction as to the setting of contract rates of which we are aware is that contained in Section 11455 of the Water Code. This section is one of the statutory provisions relating to the Central Valley Project, which provisions are expressly made applicable to the construction and operation of the State Water Resources Development System pursuant to the bond act (Sec. 12931, Wat. C.). Section 11455 provides as follows:

> "11455. The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and which will provide at all times sufficient funds for redemption of all bonds and payment of interest thereon, as and when such costs and charges become due and payable." [2]

While this section generally would direct the department to establish such contract rates as would, together with other available revenues, provide sufficient funds to pay operation, maintenance, and replacement costs and to pay the principal and interest of bonds issued to finance the construction of the State Water Resources Development System, we do not believe that this would necessarily prohibit the department from contracting to sell water for agricultural use or for any other particular use at less than cost.

It should be noted that Section 11455 does not require that the rates of *each* contract with *each* user of one of the services or facilities of the State Water Resources Development System be sufficient to pay a proportionate share of the operation, maintenance, and replacement costs and bond servicing requirements. The section is instead a general direction that such costs are to be paid from total system revenues, together with other revenues which may be available.

It is our opinion, therefore, that under existing statutes, the department could establish rates for the sale of water for agricultural use lower than those necessary to pay a proportionate share of the costs to be paid by users of the services and facilities of Chapter 1762 facilities.

We turn then to the possible constitutional issues that might be raised with respect to the sale of water for agricultural use at less than cost. First, it might be urged that such sales would constitute an impairment of the contract between the State and the holders of bonds issued pursuant to the bond act. Both Section 10 of Article I of the United States Constitution and Section 16 of Article I of the California Constitution prohibit impairment of contracts by the State. However, it is well settled that existing statutory provisions would be a part of the contracts between the State and the bondholders (*Welsh* v. *Cross,* 146 Cal. 621, 624; *Lelande* v. *Lowery,* 26 Cal. 2d 224, 226). Since, as we have pointed out, under the existing statutes the department is authorized to establish rates for the sale of water for agricultural use at less than cost in connection with facilities contemplated by Chapter 1762, it follows that there would be no impairment of the contracts between the State and the bondholders by virtue of such establishment of rates.

Another possible constitutional question is that if water is being supplied to users at less than cost, this might constitute a gift of public property in violation of Section 31 of Article IV of the California Constitution. The fundamental test of the constitutionality of a statute requiring the use of public funds is whether the statute is designed to promote the public interest, as opposed to the furtherance of the advantages of individuals. If an expenditure is for a public purpose, it is not considered a gift within the prohibition of Section 31, Article IV of the California Constitution (*City of Oakland* v. *Garrison,* 194 Cal. 298), even if incidental to the main purpose of the act authorizing the expenditure, there results an advantage to individuals (*Veterans' Welfare Board* v. *Jordan,* 189 Cal. 124; *Patrick* v. *Riley,* 209 Cal. 350).

In our opinion the courts would hold that the expenditure of public funds to assist in providing water for agricultural use in this State is for a public purpose. The promotion of agriculture has been held to be a valid public and national purpose justifying the expenditure of federal funds for federal reclamation projects (see *Ivanhoe Irrigation District* v. *McCracken* (1958), 357 U.S. 275, 294). The view taken by many authorities in recent years is that agriculture is an industry upon which the public welfare ultimately depends and its stimulation has accordingly been held to be a sovereign function of government. Statutory provisions, therefore, which, in order to encourage agriculture, extend public aid to those engaged in that pursuit are held valid in the majority of jurisdictions as being within the powers of the Legislature under the various constitutions (see 2 Am. Jur., pages 408 and 409).

Various forms of financial assistance by this State in connection with agriculture have been upheld by the courts as not involving a gift of public money. For example, appropriations made to assist paying the cost of the work of reclamation and flood control within the Sacramento and San Joaquin Drainage District have been held valid, even though landowners in the district were subject to assessment to pay such costs (*Argyle Dredging Company* v. *Chambers* (1919), 40 Cal. App. 332; *Reclamation Board* v. *Chambers* (1920), 46 Cal. App. 476; *Sacramento and San Joaquin Drainage District* v. *Riley* (1926), 199 Cal. 668; *Reclamation Board* v. *Riley* (1930), 208 Cal. 661). The appropriation of funds for the encouragement of agricultural fairs has been upheld (*Shean* v. *Edmonds* (1948), 89 Cal. App. 2d 315). The use of state bond proceeds for the purpose of land settlement has been upheld, even though the purchaser in-

[2] It is noted that while the department is directed to set rates for services and facilities made available by the State Water Resources Development System sufficient, together with other revenues which might be available for such purposes, to pay operation, maintenance, and replacement costs and bond servicing requirements, there is no requirement, in our opinion, that the rates be set so as to be sufficient to repay the California Water Fund for expenditures made therefrom for construction of the system.

cidentally derives a benefit from the credit of the State (*Veterans' Welfare Board* v. *Riley* (1922), 189 Cal. 124, 146).

Another closely related constitutional problem is the reasonableness of the classification of agricultural use for the purposes of special treatment in connection with water rates. Sections 11 and 21 of Article I and Section 25 of Article IV of the California Constitution require equality of treatment to all persons and things in the same category or similarly circumstanced. The same requirement is made by the Equal Protection Clause of the United States Constitution. This is particularly important if, in order to provide water at less than cost for agricultural use, water is sold at more than cost for other uses, such as municipal and industrial purposes, or power is sold at more than cost.

It is well established, however, that these constitutional provisions do not prohibit classification, but merely require that the classification must be based upon some distinction, natural, intrinsic, or constitutional, which suggests a reason for and justifies the particular legislation (*City of Pasadena* v. *Stimson* (1891), 91 Cal. 238; *Jersey Maid Milk Products Company* v. *Brock* (1939), 13 Cal. 2d 620; *Lelande* v. *Lowery* (1945), 26 Cal. 2d 224). The Legislature may classify for the purpose of meeting different conditions, naturally requiring different legislation, in order that legislation may be adapted to needs of the people (*Martin* v. *Superior Court* (1924), 194 Cal. 93).

In our opinion the courts would hold that for the purpose of establishing rates for water developed by a state water project, agricultural use of water constitutes a natural class justifying different treatment than is given other classes of water use. As pointed out previously, agriculture has in the past often been treated separately and public assistance has been extended for its stimulation.

Furthermore, we believe that it could be shown that historically, with respect to both federal and local water development projects, rates for water for agricultural use have been lower than rates for municipal and industrial uses. For example, this is true in the case of the sale of water under the Central Valley Project operated by the Bureau of Reclamation and the delivery of water by the Metropolitan Water District of Southern California.

As a matter of economics, there is a practical limit upon the amount of money which agricultural users of water can pay for water. If water cannot be delivered at prices within the range of their capacity to pay it follows that agricultural users of water will not be able to purchase such water, with the result that agricultural development will be either fully or partially curtailed in the area involved, depending upon the availability of other sources of water. The same economic limits do not apply equally to the purchase of water for other uses, such as municipal and industrial, nor to the purchase of power.

Thus, if one of the public purposes to be fulfilled by the construction and operation of a state water project is the supplying of water for the development of the agricultural resources of the State, we believe that the classification of agricultural use of water for the purpose of lower water rates in order to accomplish this public purpose is a reasonable and proper classification. In effectuating this purpose it might be proper, under appropriate circumstances, to base the price of the water on the ability of the agricultural user to pay, consideration being given for example, to the varying costs of production and the type of land.

The remaining question is whether such sale of water for agricultural use at less than allocated cost may be made to particular districts or areas and not to other districts or areas.

No categorical answer can be given to this question. The answer in each particular case will depend upon the application of the principles discussed earlier with respect to classifications to the particular facts involved. In other words, difference in treatment as to water rates can be justified only if there is some natural, intrinsic, or constitutional distinction between the districts and areas involved.

To illustrate one possible basis for classification, if the land in one district or area would be suitable for growth of only one type or class of crops having an economic value less than that of the type or class of crops that could be grown in another district or area, it might well be that the courts would uphold a differentiation in the rates for water to be charged in the two districts or areas involved.

Another possible basis for such differentiation in rates would be the difference in cost in delivering water to the districts or areas involved. It seems clear that if the cost of delivering water to one district or area is greater than the cost of delivering water to another district or area, this would constitute a reasonable and proper basis for the charging of higher rates for water in the first district or area.

Still further, it might be possible, as discussed above, to establish the prices for agricultural water based on the ability of the various users to pay.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

BY RAY H. WHITAKER
Deputy Legislative Counsel

ACREAGE LIMITATION—No. 406

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, November 3, 1959

HON. STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE: You have requested a summary of the so-called "160-acre limitation" and a review of the decisions of the California Supreme Court and the United States Supreme Court in the *Ivanhoe* case * relative to this acreage limitation. You

* *Ivanhoe Irrigation District* v. *All Parties* (1957), 47 Cal. 2d 597; *Ivanhoe Irrigation District* v. *McCracken* (1958), 357 U.S. 275.

have also asked whether the Legislature could constitutionally adopt an acreage limitation similar in nature to the federal "160-acre limitation" in connection with delivery of water from a state project.

I. Summary of Federal "160-acre Limitation." The Reclamation Act of 1902 (Act of June 17, 1902, Ch. 1093; 32 Stat. 388) contained, in Section 5 thereof, the following provision:

> "No right to the use of water for land in private ownership shall be sold for a tract exceeding 160 acres to any one landowner. . . ."

The above provision is the basis for the so-called "160-acre limitation" in connection with federal reclamation projects. This provision was supplemented in 1926 by the following provision contained in Section 46 of the Omnibus Adjustment Act of 1926 (Act of May 25, 1926, Ch. 383; 44 Stat. 636) pertaining to contracts entered into with irrigation districts:

> ". . . Such contract or contracts with irrigation districts hereinbefore referred to shall further provide that all irrigable land held in private ownership by any one owner in excess of one hundred and sixty irrigable acres shall be appraised in a manner to be prescribed by the Secretary of the Interior and the sale prices thereof fixed by the Secretary on the basis of its actual bona fide value at the date of appraisal without reference to the proposed construction of the irrigation works; and that no such excess lands so held shall receive water from any project or division if the owners thereof shall refuse to execute valid recordable contracts for the sale of such lands under terms and conditions satisfactory to the Secretary of the Interior and at prices not to exceed those fixed by the Secretary of Interior; and that until one-half the construction charges against said lands shall have been fully paid no sale of any such lands shall carry the right to receive water unless and until the purchase price involved in such sale is approved by the Secretary of the Interior and that upon proof of fraudulent representation as to the true consideration involved in such sales the Secretary of the Interior is authorized to cancel the water right attaching to the land involved in such fraudulent sales . . ."

II. Review of the Decisions of the California Supreme Court and the United States Supreme Court in the Ivanhoe case relative to the "160-acre Limitation."

A. *California Supreme Court Decision.* With respect to the "160-acre limitation" contained in the contract between the United States and the Ivanhoe Irrigation District, the California Supreme Court held that it was inapplicable and unconstitutional. The court held that it is an unlawful discrimination to limit the extent of the right of an owner to real property to the use and enjoyment of his property right, including the water right which may be attached thereto, on the sole basis of the amount of property he owns (47 Cal. 2d 597, 636-638, incl.).

B. *United States Supreme Court Decision.* The United States Supreme Court held that the "160-acre limitation" was applicable and constitutional. On the constitutionality question, the Court first pointed out that the federal government has power (under the General Welfare Clause of Article I, Section 8, of the Constitution and Article IV, Section 3, relating to the management and disposition of federal property) to develop large-scale projects for reclamation and irrigation and to impose reasonable conditions on the use of federal funds, property, and privileges (357 U.S. 275, 294 and 295). The Court then pointed out the fact that the Central Valley Project is a subsidy, the cost of which will never be recovered in full, and that "it is hardly lack of due process for the government to regulate that which it subsidizes" (357 U.S. 275, 295 and 296).

The Court held that, in any event, the excess acreage provisions are entirely reasonable and do not deprive the landowners of any rights to property or water. The Court pointed out that the excess land will be benefited by delivery of water to neighboring and nearby nonexcess land by virtue of underground water improvement. Thus, the Court found no substance to the contention that possible severance of the excess acreage will result in damage constituting a taking of property without just compensation. With respect to the claim of discrimination in the "160-acre limitation," the Court pointed out that the Central Valley Project was designed to benefit people, not land, and held that it is a reasonable classification to limit the amount of project water available to each individual in order that benefits may be distributed in accordance with the greatest good to the greatest number of individuals. (357 U.S. 275, 296 and 297.)

III. Constitutionality of Adoption of an Acreage Limitation by the Legislature.

We believe that in view of the holding of the United States Supreme Court in the *Ivanhoe* case, it would be held that the Legislature could constitutionally adopt an acreage limitation similar in nature to the federal "160-acre limitation" in connection with delivery of water from a state project. The Legislature may dispose of state property in such manner as it deems advisable (40 Cal. Jur. 2d, p. 556). Furthermore, it would appear that the reasoning of the United States Supreme Court in answering the contentions that such an acreage limitation deprives a property owner of property without due process and constitutes discrimination would be equally applicable with respect to an acreage limitation adopted by the Legislature, whether or not the state project contains a subsidy.

Very truly yours,

RALPH N. KLEPS, *Legislative Counsel*
By RAY H. WHITAKER, *Deputy Legislative Counsel*

TAXATION: ENHANCED LAND VALUE AS CONSEQUENCE OF STATE WATER PROJECTS—No. 412

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, October 6, 1959

HON. STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE:

Question: You ask whether a state tax could be imposed on the sale of land at a rate designed to eliminate any enhancement in the value of the land that has resulted from making water available to it under a state-financed water project.

Opinion and Analysis: So far as the California Constitution is concerned, the Legislature's power to tax is plenary in the absence of restrictions on the power contained in that instrument (*Delaney* v. *Lowry* (1944), 25 Cal. 2d 561, 568-569).

And as the court said in *In re Higgins* (1920), 50 Cal. App. 533, 535:

> "... What things are subject to taxation, and the amount and method of levying and collecting taxes, are essentially matters of legislative concern with which the courts will not interfere unless some provision of the Constitution is clearly violated."

There is no limitation in the California Constitution expressly applicable to the taxation of the sale of land under the circumstances here under consideration. There are, however, several generally applicable limitations in the California Constitution that might constitute a curb or restriction upon the tax of such a sale. These include a prohibition against the taking of property "without due process of law" (Art. I, Sec. 13), and various provisions designed to promote equality of treatment to all persons and things in the same category or similarly circumstanced (Art. I, Secs. 11 and 21; Art. IV, Sec. 25).

Counterparts of these local constitutional limitations are the due process and equal protection clauses of the United States Constitution (14th Amendment).

We believe that, within the bounds of these limitations, it would be possible constitutionally to draft legislation to impose a tax on the sale of land at a rate designed to eliminate any enhancement in the value of the land that has resulted from making water available to it under a state-financed water project.

It might be noted that any such enhanced value would be reflected in the tax base for property tax purposes, inasmuch as the State Constitution requires that all property be assessed for tax purposes at its "full cash value" (Const., Art. XI, Sec. 12). It might also be included in gross income for personal income tax purposes (R. & T.C. Secs. 17071, 18031, 18032, 18041, 18042).

Very truly yours,

RALPH N. KLEPS
Legislative Counsel
By J. GOULD
Deputy Legislative Counsel

WATER DEVELOPMENT—No. 414

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, October 2, 1959

HON. STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE: You have asked several questions with respect to Chapter 1762 (S.B. No. 1106) of the Statutes of 1959, which enacts the California Water Resources Development Bond Act (Ch. 8 (commencing at Sec. 12930), Pt. 6, Div. 6, Wat. C.) and provides for its submission to the people for approval at the general election in November 1960.

Question No. 1: Will the Department of Water Resources be required to set rates sufficient generally so as to meet not only debt service requirements but also to repay money expended from the California Water Fund for construction of the State Water Resources Development System? *

Opinion No. 1: In our opinion the department, in the absence of future legislation so requiring, will not be required to set rates so as to provide for such repayment. However, if revenues from the system exceed the amount necessary to pay (1) the reasonable costs of the annual maintenance and operation of the system and the replacement of any parts thereof, and (2) the annual payment of the principal and interest on bonds, such excess revenues must first be used to repay the California Water Fund before they may be used for acquisition and construction of the system.

Analysis No. 1: Section 12937 of the Water Code (as added by Chapter 1762) requires the Department of Water Resources, subject to such terms and conditions as may be prescribed by the Legislature, to enter into contracts for the sale, delivery or use of water or power, or for other services and facilities, made available by the system. Such contracts are required to be for a stated term and, insofar as feasible, for the full term of the life of the general obligation bonds isued pursuant to Chapter 1762. The contracts are required to state (1) that they are for the direct benefit of the bondholders and (2) that the income and revenues therefrom are pledged to the purposes and in the priority set forth in the section. These purposes and their priority are as follows:

(1) The payment of the reasonable costs of the annual maintenance and operation of the system and the replacement of any part thereof.

(2) The annual payment of the principal and interest on bonds issued.

(3) Transfer to the California Water Fund as reimbursement for funds utilized from said fund for construction of the system.

(4) Any surplus revenues in each year not required for any of the above purposes and not required to be transferred to the General Fund to repay it for amounts used therefrom to meet bond servicing re-

* Consisting of certain enumerated facilities (see Secs. 12931 and 12934, Wat. C.), hereinafter referred to as the "system."

quirements, to be used for acquisition and construction of the system.

While the income and revenues from water and power contracts are pledged by Section 12937 for all of the above purposes, there is no requirement in that section that the department set rates for water and power which will provide income and revenues sufficient to carry out all of such purposes. Of course, the Legislature, pursuant to its authorization to prescribe terms and conditions of the contracts to be entered into by the department, could require the setting of rates sufficient to provide for repayment to the California Water Fund, in addition to meeting operation, maintenance and replacement costs and bond servicing requirements. In the absence of such future legislative action, the only requirement as to the setting of rates applicable to the department in connection with system water and power contracts is contained in Section 11455 of the Water Code. That section is contained in the law applicable to the Central Valley Project and, along with the other statutory provisions applicable to the Central Valley Project, is made applicable to the construction and operation of the system by Section 12931 of the Water Code. Section 11455 provides as follows:

> "The department shall enter into such contracts and fix and establish such prices, rates, and charges so as at all times to provide revenue which will afford sufficient funds to pay all costs of operation and maintenance of the works authorized by this part, together with necessary repairs and replacements thereto, and which will provide at all times sufficient funds for redemption of all bonds and payment of interest thereon, as and when such costs and charges become due and payable."

In our opinion, therefore, the department, under existing law, is directed to set rates sufficient, together with other revenues which might be available for such purposes, to pay operation, maintenance, and replacement costs and bond servicing requirements. There is no requirement, however, that the rates be set so as to be sufficient to repay the California Water Fund for expenditures made therefrom for construction of the system. However, if revenues from the system exceed the amount necessary to pay operation, maintenance, and replacement costs and bond servicing requirements, such excess revenues must first be used to repay the California Water Fund before they may be used for acquisition and construction of the system.

Question No. 2: If sufficient revenues must be collected to repay the California Water Fund for expenditures made therefrom for construction of the system, then does the money so repaid become available for expenditure on facilities of the system under the same conditions as other accruals to the California Water Fund?

Opinion and Analysis No. 2: While we have concluded in our answer to your first question that the department is not required to collect sufficient revenues to repay the California Water Fund, if such repayments are in fact made then the money repaid would become available for expenditure on facilities of the system under the same conditions as other accruals to the California Water Fund.

Section 12938 of the Water Code provides that *all moneys* in the California Water Fund and *all accruals thereto* are continuously appropriated to the department for expenditure on the system, except that in any fiscal year the Legislature may appropriate for any lawful purpose any money in the fund which is unexpended at the beginning of that fiscal year and any money accruing to the fund during the fiscal year. Section 12938 further requires that California Water Fund money be expended on the state water facilities (certain designated facilities of the system, including the Oroville Dam and certain facilities to transport water from the Sacramento-San Joaquin Delta to various termini in the State) in lieu of bond proceeds. To the extent California Water Fund money is so used, an amount of bond proceeds equal thereto would be authorized to be expended by the department for the construction of additional facilities of the system as it determines necessary and desirable to meet local needs, including flood control, and to augment the supplies of water in the Delta from multiple-purpose dams, reservoirs, aqueducts, and appurtenant works in the watersheds of the Sacramento, Eel, Trinity, Mad, Van Duzen, and Klamath Rivers for use in the system.

Question No. 3: If the money so repaid to the California Water Fund is expended on the state water facilities (as required by Section 12938), will this result again in an equal amount of bond proceeds being made available for expenditure for additional water facilities to meet local needs and to augment water supplies in the Delta?

Opinion No. 3: In our opinion the answer to your question is in the affirmative.

Analysis No. 3: As pointed out in our answer to the preceding question, Section 12938 provides that to the extent the California Water Fund money is expended on the state water facilities an amount of bond proceeds equal thereto would be authorized to be expended for the construction of facilities to meet local needs and to augment the supplies of water in the Delta. No distinction is made between the various sources of the money in the California Water Fund. Thus, in our opinion, the provision for expenditure of equal amounts of bond proceeds applies in the case of money in the California Water Fund derived from repayment of expenditures already made for the state water facilities and again expended for such purpose.

Question No. 4: Is money in the California Water Fund and accruals thereto available only for the expenditure on the system (and, more particularly, the state water facilities) and for no other purpose?

Opinion and Analysis No. 4: Section 12938 of the Water Code expressly provides that in any fiscal year the Legislature may appropriate *for any lawful purpose* any money in the California Water Fund which is unexpended at the beginning of that fiscal year and any money accruing to the fund during the fiscal year.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

BY RAY H. WHITAKER
Deputy Legislative Counsel

CALIFORNIA WATER RESOURCES DEVELOPMENT BOND ACT—No. 415

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, October 23, 1959

HONORABLE STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE:

Question: You have asked the following two questions:

(1) What budgetary controls does the Department of Finance have with respect to expenditures by state agencies of appropriations made to said agencies (other than the Department of Public Works, with respect to State Highway Fund money, which is governed by special provisions of law)?

(2) Will the Department of Water Resources be subject to such controls with respect to the expenditure of funds pursuant to the California Water Resources Development Bond Act (Ch. 8 (commencing at Sec. 12930), Pt. 6, Div. 6, Wat. C., as added by Ch. 1762, Stats. 1959) if said act is approved by the voters at the 1960 General Election?

Opinion and Analysis: (1) Section 1a of Article IV of the California Constitution provides, among other things, that all state agencies shall be subject to the regulations and requirements with respect to the submission, approval and enforcement of budgets prescribed by law. Pursuant to this section the Legislature has enacted legislation with respect to the fiscal year budgets of state agencies.

Section 13320 of the Government Code requires every state agency for which an appropriation has been made to submit to the Department of Finance for approval a complete and detailed budget at such time and in such form as may be prescribed by the department setting forth all proposed expenditures and estimated revenues for the ensuing fiscal year.

Section 13321 of said code requires such budgets to show the allotments of appropriations or other funds available for the fiscal year by quarter or other period of time, by organization unit, and by expenditure classification, in the detail prescribed by the Department of Finance. The department may require the setting aside of a reserve for contingencies or other purposes in such amount as the department determines.

Under Section 13322 of said code the Department of Finance is authorized, either before or after approval of a fiscal year budget, to revise, alter, or amend such budget if, in its opinion, the revision, alteration or amendment is required in the interest of the State. Under Section 13323 the department, upon request of a state agency at any time during the fiscal year, may authorize transfers between its budget allowances, including reserves.

(2) The California Water Resources Development Bond Act, if approved by the people, will appropriate to the Department of Water Resources for specified purposes, money derived from the sale of state general obligation bonds, revenues from facilities acquired or constructed pursuant to the act, and money in the California Water Fund (Secs. 12937 and 12938, Wat. C.). No further appropriation of such funds will be required, either in the Budget Bill or other appropriation measures.

However, the fact that such funds are appropriated to the Department of Water Resources by a bond act which is approved by the voters does not, in our opinion, in and of itself exempt the department from the constitutional requirements relating to budgetary regulations and requirements prescribed by law. Thus, the general provisions of the Government Code would be applicable except as otherwise specifically provided by law or proper bond indenture provisions with respect to the expenditure of such funds. This general budgetary control would, unless otherwise restricted, include the power to reduce an amount budgeted by the Department of Water Resources for expenditure in a particular fiscal year for certain features of the state water facilities if, in the opinion of the Department of Finance, such reduction is required *in the interests of the State* (see Sec. 13322, Gov. C.).

We believe that it is important to keep in mind in connection with the general budgetary control of the Department of Finance (assuming that it is not otherwise restricted), that the discretion granted to the Department of Finance is not unlimited. In its exercise, the Department of Finance must recognize the purpose of the appropriation and exercise its budgetary function in a manner as to best effectuate that purpose. Such an interpretation of the exercise of discretion by the Department of Finance in its budgetary functions is of long-standing duration (see 2 Ops. Cal. Atty. Gen. 274). If the people approve the bond act, thereby indicating their intent that the various purposes of the act are to be carried out, we do not believe that the Department of Finance through the budgetary processes could arbitrarily preclude accomplishment of that purpose. The remedy of mandamus would be available if it were shown that the department acted arbitrarily and abused discretion (*Roussey* v. *City of Burlingame* (1950), 100 Cal. App. 2d 321).

And, as indicated above, the Legislature could provide for the expenditure of the funds involved by the Department of Water Resources without supervision by the Department of Finance, or with limited supervision as in the case of the Department of Public

Works in connection with expenditure of State Highway Fund money (see See. 143.1, S. & H.C.).

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

By RAY H. WHITAKER
Deputy Legislative Counsel

WATER DEVELOPMENT—No. 457

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, September 17, 1959

HONORABLE STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE: You have asked several questions with respect to Chapter 1762 (S.B. 1106) of the Statutes of 1959, which enacts the California Water Resources Development Bond Act (Ch. 8 (commencing at See. 12930), Pt. 6. Div. 6, Wat. C.) and provides for its submission to the people for approval at the General Election in November, 1960.

Question No. 1: In the event that available revenues are insufficient in any year to meet bond servicing requirements will General Fund money be used to meet the defieit without further action of the Legislature?

Opinion No. 1: In our opinion the answer to your question is in the affirmative.

Analysis No. 1: Section 12937 of the Water Code (as added by Chapter 1762) contains the following provision specifying the manner in which the annual payments of principal and interest on California Water Resources Development Bonds are to be made:

> "There is hereby appropriated from the General Fund in the State Treasury such sum annually as will be necessary to pay the principal of and the interest on the bonds issued and sold pursuant to the provisions of this chapter, as said principal and interest become due and payable.
>
> "On the several dates on which funds are remitted pursuant to Section 16676 of the Government Code for the payment of the then maturing principal and interest on the bonds, to wit, on the several dates of maturity of said principal and interest in each fiscal year there shall be transferred into the General Fund in the State Treasury from revenues deposited in the fund [the California Water Resources Development Bond Fund] as provided in subdivision (b) of this Section 12937, and from any accrued interest and premiums received on any sale, or sales of the bonds, so far as available therein, amounts equal to, but not in excess of, all sums so becoming due for principal and interest and in the event such money received from such sources and so returned on said remittance dates is less than the principal and interest then due and payable then the balance remaining unpaid shall be transferred to the General Fund out of moneys in the fund received from such sources as soon thereafter as it shall become available, together with simple interest thereon, from such remittance dates until so returned at the same rate as borne by the bonds."

It is clear from the above provision that the use of General Fund money in the event of insufficient revenues to make a required annual payment of principal and interest requires no further legislative action.

Question No. 2: If General Fund money is so used would future project revenues or California Water Fund money, or both, be used to repay the General Fund without further action of the Legislature; and, if so, would interest be paid on the General Fund money so used?

Opinion and Analysis No. 2: As set forth in the provision of Section 12937 quoted above, the amount of deficiency in any year for the payment of principal and interest, and for which General Fund money is used, must be transferred to the General Fund out of money in the California Water Resources Development Bond Fund received from project revenues and from accrued interest and premiums received on sales of bonds as soon thereafter as it becomes available, together with simple interest thereon from the date the General Fund money was used until so returned at the same rate as borne by the bonds.

There is, however, no provision in Chapter 1762 for the use of California Water Fund money to repay to the General Fund amounts used therefrom to meet bond servicing requirements.

Question No. 3: Will General Fund money (excluding California Water Fund money) be available to the Department of Water Resources for construction purposes without further action of the Legislature?

Opinion and Analysis No. 3: There is no provision in Chapter 1762 for the use of General Fund money for construction purposes.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

By RAY H. WHITAKER
Deputy Legislative Counsel

ENHANCED LAND VALUE AS CONSEQUENCE OF STATE WATER PROJECTS—No. 644

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, November 3, 1959

HON. STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE:

Question: You have asked whether the Legislature could adjust the rates of water delivered to land under a state-financed water project based upon the

degree to which the value of such land has been increased by the availability of such water in order to eliminate or limit such enhancement in land value.

Opinion and Analysis: Generally speaking, the Legislature may dispose of state property in such manner as it deems advisable (40 Cal. Jur. 2d, p. 556). There are, however, several generally applicable limitations in the California Constitution that might constitute a curb or restriction upon the adjustment of water rates in the manner suggested. These include a prohibition against the taking of property "without due process of law" (Art. I, Sec. 13), and various provisions designed to promote equality of treatment to all persons and things in the same category or similarly circumstanced (Art. I, Secs. 11 and 21; Art. IV, Sec. 25).

Counterparts of these local constitutional limitations are the due process and equal protection clauses of the United States Constitution (Fourteenth Amendment).

We believe that within the bounds of these limitations, it might be possible constitutionally to draft legislation to provide for the adjustment of water rates in the manner suggested to eliminate or limit the enhancement in the value of the land that has resulted from making water available to it under a state-financed water project. Any proposal for adjustment of rates on such a basis would, of course, require a determination, either by the Legislature or by an appropriate agency, of the amount of enhancement of land values attributable to the availability of water from a state-financed water project.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

By RAY H. WHITAKER
Deputy Legislative Counsel

DAVIS-GRUNSKY ACT LOAN REPAYMENT—No. 1736

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, February 26, 1960

HONORABLE STEPHEN P. TEALE
Senate Chamber

DEAR SENATOR TEALE:

Question: You have requested our opinion as to the following questions concerning money received by the State in repayment of loans made to local agencies pursuant to the Davis-Grunsky Act (Secs. 12880-12891.1, incl., Wat. C.*, as amended and added by Chapter 1752, Statutes of 1959):

(1) Into what fund in the State Treasury will such money be paid?

(2) For what purposes may such money be expended without further legislation?

(3) Is such money subject to appropriation by the Legislature?

* All subsequent section references are to the Water Code unless otherwise specified.

You have asked us to consider these questions in the light of the approval, or failure of approval, by the voters of the California Water Resources Development Bond Act (Secs. 12930-12942, incl., Wat. C., enacted by Chapter 1762, Statutes of 1959).

Opinion and Analysis: I. We shall consider your questions first in the light of the situation which would exist if the California Water Resources Development Bond Act is not approved by the voters at the 1960 General Election.

(1) As to the fund into which money received as repayment of loans made from the Local Projects Assistance Fund created by the Davis-Grunsky Act (Sec. 12881) will be paid, Section 12882 requires such money, together with interest that is paid on the loans, to be paid into the Local Projects Assistance Fund.

(2) As to the purposes for which such money may be expended without further legislation, Section 12889 provides that all of the assets of the Local Projects Assistance Fund may be expended by the Department of Water Resources in making loans and grants pursuant to the Davis-Grunsky Act without need of further appropriations or allocations by the Legislature to the department for such purpose.

(3) As to the availability of such money for appropriation by the Legislature, we believe it is clear that such money, although it is deposited in the Local Projects Assistance Fund and appropriated for loans and grants under the Davis-Grunsky Act (Secs. 12881 and 12889), may be appropriated for any lawful purpose by the Legislature. The appropriation of such money by the Davis-Grunsky Act may be superseded or repealed by a subsequent act of the Legislature unless vested rights would be impaired (Sec. 9606, Gov. C.; *United Milk Producers* v. *Cecil*, 47 Cal. App. 2d 758).

II. We shall now consider your questions in the light of the situation which would exist if the California Water Resources Development Bond Act is approved by the voters.

Section 14 of Chapter 1752 provides as follows:

> "Sec. 14. In the event Senate Bill No. 1106 is enacted at the 1959 Regular Session of the Legislature and thereafter adopted by the people at an election, then, upon the effective date of the California Water Resources Development Bond Act, the Local Projects Assistance Fund in the State Treasury is abolished, and the Controller shall transfer all resources of the Local Projects Assistance Fund to the California Water Fund. Thereafter all moneys, securities and increments which would have been deposited in the Local Projects Assistance Fund pursuant to Section 12882 of the Water Code shall be deposited instead in the California Water Fund."

Thus, upon the approval of the bond act, the Local Projects Assistance Fund will be abolished, its assets will be transferred to the California Water Fund, and any moneys received in repayment of loans made

from the Local Projects Assistance Fund will be deposited in the California Water Fund.

Thereafter, funds for loans and grants under the Davis-Grunsky Act will be available pursuant to the bond act rather than the Davis-Grunsky Act. Section 12934 includes, as part of the state water facilities to be financed and constructed under the bond act, provision for water development facilities for local areas as provided in the Davis-Grunsky Act, and Section 12938 earmarks $130,000,000 of the bond proceeds for such purpose.* Thus, since after the approval of the bond act, such loans and grants will be made as part of the state water facilities and money received as repayment of such loans would constitute revenue derived from the state water facilities, the answers to your questions will depend upon the provisions of the bond act governing the disposition and use of revenues derived by the State from the State Water Resources Development System (of which the state water facilities are a part).

(1) As to the fund into which money received as repayment of loans would be paid, subdivision (b) of Section 12937 would require such money (along with other system revenues) to be deposited in the California Water Resources Development Bond Fund created by Section 12935.

(2) As to the purposes for which such money could be expended, subdivision (b) of Section 12937 would require such money (along with other system revenues) to be used annually only for the following purposes and in the following order:

"1. The payment of the reasonable costs of the annual maintenance and operation of the State Water Resources Development System and the replacement of any parts thereof.

"2. The annual payment of the principal of and interest on the bonds issued pursuant to this chapter.

"3. Transfer to the California Water Fund as reimbursement for funds utilized from said fund for construction of the State Water Resources Development System.

"4. Any surplus revenues in each year not required for the purpose specified in the foregoing subparagraphs (1), (2) and (3) of this subdivision (b) of Section 12937 and not required to be transferred to the General Fund pursuant to subparagraph (a) of this Section 12937, shall, during the time any of the bonds authorized herein are outstanding, be deposited in a special account in the California Water Resources Development Bond Fund and are hereby appropriated for use and shall be available for expenditure by the department for acquisition and construction of the State Water Resources Development System as described in Section 12931 hereof."

* Since Section 12938 also requires available California Water Fund money to be expended on the state water facilities "in lieu of" the bond proceeds, such money also could probably be expended, as well as bond proceeds, for loans and grants to local agencies pursuant to the Davis-Grunsky Act.

(3) As to the availability of such money for appropriation by the Legislature, we do not believe (in view of the pledge of the revenues of the system to the purposes and in the priority above specified as security for the bonds issued pursuant to the Bond Act (Sec. 12937)) that, so long as any such bonds are outstanding, the Legislature could appropriate such money for different purposes or in a different priority than specified in subdivision (b) of Section 12937.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

By RAY H. WHITAKER
Deputy Legislative Counsel

FEDERAL CENTRAL VALLEY PROJECT WATER SERVICE CONTRACTS—No. 562

STATE OF CALIFORNIA
OFFICE OF LEGISLATIVE COUNSEL
SACRAMENTO, CALIFORNIA, December 31, 1959

HON. STEPHEN P. TEALE
West Point, California

DEAR SENATOR TEALE: Pursuant to your request we have prepared the attached document. This document consists of the text of a proposed contract between the United States and the Orange Cove Irrigation District for water service from the Central Valley Project, with each subject matter in the contract followed by an analysis thereof which was prepared by the Bureau of Reclamation in 1948. This office has added a note in the analysis (see page 15) relating to a 1956 congressional act (Act of July 2, 1956, Ch. 492), which expands the terms of the so-called 9(e) contracts.

In response to specific inquiries made by you, with respect to such contracts, we call your attention to articles 11, 16, 17, 18, 19, and 20 of the attached proposed contract, which deal with collection by the Bureau of Reclamation of payments from the contracting district. We also point out that there is no provision in said contract limiting the power of the contracting district to fix differential prices between its water users.

Very truly yours,

RALPH N. KLEPS
Legislative Counsel

By RAY H. WHITAKER
Deputy Legislative Counsel

CONTRACT BETWEEN THE UNITED STATES AND THE ORANGE COVE IRRIGATION DISTRICT PROVIDING FOR WATER SERVICE WITH ANALYSIS PREPARED BY BUREAU OF RECLAMATION—No. 562

Articles 1 to 7, inclusive, of Contract

1. THIS CONTRACT, made this _____ day of _____, 194___, in pursuant generally of the Act of Congress of June 17, 1902 (32 Stat. 388), and acts amendatory thereof or supplementary thereto, all col-

lectively herein styled the federal reclamation laws, between the United States of America, herein styled the United States, represented by the Secretary of the Interior, and the Orange Cove Irrigation District, a political subdivision of the State of California, duly organized, existing and acting pursuant to the laws thereof, with its principal place of business in the City of Orange Cove, State of California, herein styled the District.

WITNESSETH, THAT:

Explanatory Recitals

2. WHEREAS, The United States is constructing the Central Valley Project for diversion, storage, carriage, distribution and beneficial use, for flood control, irrigation, municipal, domestic, industrial, generation and distribution of electric energy, salinity control, navigation and other purposes, of waters of the Sacramento River and San Joaquin River and their tributaries; and

3. WHEREAS, The United States proposes to construct and operate the Friant-Kern Canal, which will be used, in part, for the furnishing of water to the District pursuant to the terms of this contract; and

4. WHEREAS, The District desires to contract, pursuant to the federal reclamation laws and the laws of the State of California, for the furnishing by the United States of a supplemental water supply from the Project for which the District will make payment to the United States upon the basis, at the rates, and pursuant to the conditions hereinafter set forth; and

5. WHEREAS, Investigations of the District lands and present water supply indicate that irrigated and irrigable lands within the boundaries of the District are at present in need of additional water for irrigation and certain areas have a potential need of water for irrigation, and that ground water underlying the District is seriously depleted and in need of replenishment and that an additional water supply to meet these present and potential needs can be made available by and through the works constructed and to be constructed by the United States; and

6. WHEREAS, Investigations of the stream flow in the Sacramento River and the San Joaquin River and their tributaries indicate that there will be available for furnishing to the District from the Friant-Kern Canal an additional water supply for surface diversion and direct application for irrigation, and directly or indirectly to replenish depleted ground waters underlying the District; and

NOW, THEREFORE, In consideration of the mutual and dependent covenants herein contained, it is hereby mutually agreed by the parties hereto as follows:

Definitions

7. When used herein, unless otherwise distinctly expressed, or manifestly incompatible with the intent hereof, the term

(a) "Secretary" or "contracting officer" shall mean the Secretary of the United States Department of the Interior or his duly authorized representatives;

(b) "Project" shall mean the Central Valley Project, California, of the Bureau of Reclamation;

(c) "Initial delivery date" shall mean the date announced by the Secretary, on which water first will be available for furnishing to the District by means of the Friant-Kern Canal pursuant to this contract.

(d) "Year" shall mean the period from and including March 1 of each calendar year through the last day of February of the following calendar year;

(e) "Calendar year" shall mean the period from January 1 through December 31, both dates inclusive;

(f) "Class 1 water" shall mean that supply of water at Friant Dam and reservoir which, subject to the contingencies described in Article 14 hereof, will be available for delivery from the Friant-Kern and Madera Canals and the San Joaquin River as a dependable water supply during each irrigation season;

(g) "Class 2 water" shall mean that supply of water which becomes available in addition to the supply of Class 1 water and which, because of its uncertainty as to availability and time of occurrence, will be undependable in character and will be furnished only if, as, and when said water is available as determined by the United States.

Analysis

This water service contract has as its statutory authority Section 9(e) of the Reclamation Project Act of 1939 (53 Stat. 1187, 43 U.S.C. 485). This section provides:

> "In lieu of entering into a repayment contract pursuant to the provisions of subsection (d) of this section to cover that part of the cost of the construction of works connected with water supply and allocated to irrigation, the secretary in his discretion, may enter into either short- or long-term contracts to furnish water for irrigation purposes. Each such contract shall be for such period, not to exceed forty years, and at such rates as in the secretary's judgment will produce revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost and an appropriate share of such fixed charges as the secretary deems proper, due consideration being given to that part of the cost of construction of works connected with water supply and allocated to irrigation; and shall require payment of said rates each year in advance of delivery of water for said year. In the event such contracts are made for furnishing water for irrigation purposes, the costs of any irrigation water distribution works constructed by the United States in connection with the new project, new division of a project, or supplemental works on a project, shall be covered by a repayment contract entered into pursuant to said subsection (d)."

Articles 1 through 6 of the contract contain only explanatory recitals. Article 7 includes the definitions of the terms used in the contract.

Article 8 of Contract

Term of Contract

8. The term of this contract shall extend for a period of forty (40) years, including the year in which the initial delivery date occurs.

Analysis

This article sets forth the term of the contract. It should be noted that the second sentence of Section 9(e) of the Reclamation Project Act of 1939 limits the term of water service contracts to a period of not more than forty years. The term set forth in Article 8 is for the maximum period permitted under the law.

Article 9 of Contract

Water to Be Furnished to District

9. (a) Each year for a period of five years after March 1 of the year following that in which the initial delivery date occurs, the United States will furnish to the district and the district each year will accept and pay, as provided in Article 11 hereof, for Class 1 and Class 2 water from the Friant-Kern Canal in the quantities specified in a schedule submitted by the district in accordance with Article 10 (a) hereof for such year: Provided, That no Class 1 water shall be furnished to the district and the district shall not be obligated to accept and pay for Class 1 water until the date, announced by the contracting officer, that the facilities necessary for furnishing said Class 1 water have been completed and after said date no more than 10 percent of the total quantity of water called for by the district during any such year in the aforesaid schedule shall be Class 2 water, nor shall the United States be obligated to furnish more than 31,800 acre-feet of Class 1 water during any such year.

(b) Each year after the expiration of five years from March 1 of the year following that in which the initial delivery date occurs, the United States shall furnish to the district from the Friant-Kern Canal and the district shall accept any pay for 10,000 acre-feet of Class 1 water: Provided, That the district may at any time or times within 15 years after the initial delivery date upon written notice to the United States increase or, by mutual agreement of the parties hereto, decrease the amount of Class 1 water required thereafter to be sold and delivered each year to the district by the United States during the remainder of the term of this contract, but in no event shall the total amount of Class 1 water required to be furnished and delivered by the United States and accepted and paid for by the district in any year be in excess of 31,800 acre-feet.

Analysis

The obligation of the United States to furnish and the obligation of the district to accept delivery of water are set forth in this article.

(a) For a period of at least five years after the first delivery of water, the United States will be obligated to furnish and the district will be obligated to accept and pay for only the quantities of water, up to 31,800 acre-feet annually, called for by the district in the schedule submitted by it each year during that period. Certain limitations are imposed on the obligations contained in this subdivision. The United States is not obligated to commence to furnish Class 1 water pursuant to any such schedule until the facilities necessary for furnishing that class of water have been completed, as determined by the contracting officer. It is obvious that, before any Class 1 water can be furnished from the Friant-Kern Canal, it will be necessary for the Delta-Mendota Canal, as well as the pumping plants and other necessary facilities, to have been completed. Furthermore, since the completion of the construction of the Friant-Kern Canal, as well as these other facilities, is necessary before *all* districts can be served, a single district, by insisting that sufficient facilities have been constructed in order to serve it, might delay the completion of construction adequate to serve the remaining districts. For example, it is conceivable that to place water in certain reaches of the Friant-Kern Canal before that canal has been completed below those points, might delay the construction of the lower reaches of the canal, which in turn, would mean the commencement of water service to the districts at the lower end of the canal would be delayed. Therefore, it was felt that the determination as to the completion of facilities adequate to serve Class 1 water to any particular district should be left for the determination of the United States, since the federal government has the legal responsibility for the construction and completion of the physical works necessary to serve the entire project. It should be emphasized, however, that as a legal matter the determination of the contracting officer in this respect cannot be arbitrary, capricious, or grossly in error. *Rialto Construction Company* v. *Reed* (1911), 17 Cal. App. 29, 118 Pac. 473; *American Trust Company* v. *Coryell* (1935), 3 Cal. (2d) 15, 43 P. (2d) 1102; *Southern New England Railroad Corporation* v. *Marsch* (1931), 45 F. (2d) 766. It should be recognized further that the United States will be as desirous of commencing deliveries at the earliest possible date as the district involved. It is not likely that the United States would be conducting negotiations for the execution of contracts if it had in mind delaying the delivery of water. In addition, it is unnecessary to point out that the obligation of the district to pay does not commence until water deliveries start and therefore that any effort on the part of the United States to delay the commencement of delivery of water would have the effect of delaying the date on which revenues will commence to be returned to the United States.

Another limitation contained in this subdivision is to the effect that after the facilities are available for furnishing Class 1 water to the district, not more than a specified percentage of the

total quantity of water called for in the schedule may be Class 2 water during the five-year period. The reason for this limitation is to preserve the ratio between the Class 1 and Class 2 commitments of the district, and the percentage is computed upon that basis. There is no obligation on the part of the district to call for any Class 2 water, but if it does so it will not be entitled to receive more than the specified percentage. This subdivision of the contract will permit some districts to receive water, if they so desire, even before the facilities necessary for furnishing the Class 1 water are available. For example, the Friant-Kern Canal will have been completed to the point at which the Orange Cove Irrigation District can be served with some water from Friant Reservoir before the Delta-Mendota Canal has been completed. Any water available from Friant Reservoir at this point of time will be furnished under this contract prior to those receiving service under interim contracts. This water will be furnished at the rate prescribed for Class 2 water until the facilities necessary for furnishing the Class 1 water have been completed.

(b) After the expiration of the five-year period from March 1 of the year following that in which the initial delivery date occurs the United States will be obliged to furnish and the district to accept and to pay for 10,000 acre-feet of Class 1 water each year. The district is granted an option, to be exercized to the extent that it desires within fifteen years after the initial delivery date, to increase the total quantity of Class 1 water required to be furnished to and accepted by the district up to 31,800 acre-feet per year. The fact that the district will be permitted to take whatever quantities of water it wishes during the first five years will be an aid to it in arriving at its decision with respect to the extent to which it wishes to exercise this option.

Article 10 of Contract

Time for Delivery of Water

10. (a) The district shall submit in writing to the contracting officer on or before March 1 of each year a schedule, subject to the provisions of Article 9 hereof and satisfactory to the contracting officer, indicating the desired times and quantities for the delivery of all Class 1 and Class 2 water pursuant to this contract during such year and the United States shall within the provisions hereof, attempt to deliver said water in accordance with said schedule, or any revision thereof satisfactory to the contracting officer submitted by the district within a reasonable time before the desired change of the time for delivery, as nearly as may be feasible as conclusively determined by the contracting officer.

(b) The district may, with the advance written consent of the contracting officer, in any year exchange water for irrigation purposes with any other district which has contracted with the United States for water from the project. No sale or other disposal by the district for use outside the district, of any water, or the right to the use thereof, furnished to the district pursuant to this contract shall be valid without the contracting officer's written consent thereto.

Analysis

The time for the delivery of water during each year is provided for in this article.

(a) The district agrees under the contract to submit in writing on or before March 1 of each year a schedule satisfactory to the contracting officer, indicating the desired times and quantities for the delivery of water for the particular year. The United States agrees to attempt to deliver the water in accordance with the schedule or any revision which the district submits within a reasonable time before the desired change of time for the furnishing. Attention frequently has been directed to the fact that the schedules are required to be satisfactory to the contracting officer and that the United States will *attempt* to deliver the water in accordance with the schedule, as nearly as may be feasible as conclusively determined by the contracting officer. If only one district were to be served by means of the Friant-Kern Canal and if the operations of the Friant-Kern Canal were not dependent upon the operations of Shasta Reservoir, the pumping plants, and the Delta-Mendota Canal it might have been feasible to state unequivocally that the United States would agree to accept any form of schedule which was submitted and that it would deliver, rather than attempt to deliver, water in accordance with the schedule. However, in view of the complex operations involved in the project and the fact that many districts will be served from the same canal and the same source of supply, it is not feasible for the United States to undertake the specific obligation without qualification. To undertake an unqualified obligation would have required the establishment of priorities which particularly would be undesirable. The situation is not unlike that of an individual district serving water to the members of the district. The engineer for the Orange Cove Irrigation District, for example, would not agree in advance to deliver water to each water user upon the basis of schedules which he has not seen. He must be in a position to serve all water users in the most efficient way he can and if demands of individual water users conflict he must reserve the right to adjust the schedules so as to satisfy all in the best way that he can. He must also be in a position to take into account the capacity of the distribution facilities of the district. On the other hand, the individual water users would not be in a position to agree in advance to a specified schedule for the entire year. For the same reasons a district would not wish to agree to a fixed schedule to govern its water deliveries from the United

States over a period of 40 years. It should be emphasized that the limitations imposed on the United States' liability in this subdivision do not relieve the Federal Government of its legal obligation undertaken in the contract to furnish the water. The limitations are inserted only to permit the most efficient co-ordination of operations so that all districts will be assured that their needs will be satisfied to the fullest extent that the physical situation and the needs of other districts with equal rights will permit.

(b) The district may, with the written consent of the contracting officer, exchange project water with any other district which has contracted with the United States for water from the project and no sale or other disposal by the district of project water for use outside the district will be valid without the contracting officer's written consent. Rates for project water are based upon the ability of the United States to dispose of the entire output of water from the project and to assure the return to the Federal Treasury of the costs of the project. If the United States has water available to furnish to another district, that water should be marketed by the United States in order to assure the recovery of the project costs within a reasonable time. On the other hand, if the United States does not have the available water to furnish to the party who desires it, the contracting officer could not arbitrarily withhold his consent to the exchange or sale of the water. It also should be pointed out in this connection that the lands of the district are the ultimate security for the obligations assumed by the district under the contract. If the district assumes an obligation to furnish water to areas outside of its boundaries with respect to which it has no taxing power it could lessen the security for the district's obligations to the United States.

Article 11 of Contract

Rate and Method of Payment for Water

11. (a) The contracting officer will, on or before February 15 of each calendar year, by written notice, notify the District of the rates of payment to be made by the District for all water to be delivered to it pursuant to this contract during the ensuing year, but in no event shall the rates so announced be in excess of $3.50 per acre-foot of Class 1 water and $1.50 per acre-foot for Class 2 water.

(b) The District shall, each year during the period described in Article 9(a) hereof, in advance of the delivery of any water for said year make payments for all Class 1 and Class 2 water requested by the District in the schedule submitted as aforesaid at the rates fixed in the manner provided in (a) of this article.

(c) During the period described in Article 9(b), the District shall, each year in advance of the delivery of water for said year, make payment to the United States, at rates fixed as provided in (a) of this article for all Class 1 water which the district is required to receive pursuant to the provisions of said Article 9(b). Such payments by the District shall be made on or before March 1 or such other date, prior to the time for commencement of delivery of such water, of the respective year as may be specified by the contracting officer in written notice to the District.

(d) In the event the District fails or refuses to accept delivery of the quantities of water available for delivery to and required to be accepted by it pursuant to this contract, or in the event the district in any year, commencing with the sixth year after the initial delivery date fails to submit a schedule for delivery as provided in Article 10(a) of this contract, said failure or refusal shall not relieve the District of its obligation to pay for said water and the District agrees to make payment therefor in the same manner as if said water has been delivered to and accepted by it in accordance with this contract.

(e) Water furnished to the District during any month designated in the schedule submitted by it pursuant to Article 9, for the furnishing of water to the District, shall be deemed to have been accepted as Class 1 water to the extent that Class 1 water is called for in said schedule for said month and all water furnished to the District in excess of the amount of Class 1 water called for in said schedule for said month shall be deemed to have been accepted as Class 2 water. Water available for furnishing to the District in accordance with the approved schedule and not accepted by the District shall be deemed to have been accepted by the District in accordance with the aforesaid schedule.

Analysis

The rate and method of payment for water furnished to the district pursuant to the contract is prescribed in this article.

(a) Subdivision (a) provides the mechanics for the establishment of the rates to be charged for the water furnished. Section 9(e) of the Reclamation Project Act of 1939, which was quoted above, states that the rates for water shall be such "* * * as in the Secretary's judgment will produce revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost and an appropriate share of such fixed charges as the Secretary deems proper, due consideration being given to that part of the cost of the construction of works connected with water supply and allocated to irrigation; and shall require payment of said rates each year in advance of delivery of water for said year." By virtue of this language the Secretary of the Interior is required to recover for the United States, at least within the useful life of the project, the operation and maintenance cost and the reimbursable construction cost of the irrigation features of the project. In lieu of entering into a contract which would require the repayment of these costs within a period of 40 years and the granting to the districts of a permanent right to the use of water for the project, the Secretary is authorized

under Section 9(e) to provide water service on an acre-foot basis. This permits the establishment of rates consistent with the irrigator's ability to pay at the time he uses the water and each district's obligation is based, not on a fractional part of the cost of the irrigation features of the project, but rather upon the amount of water which the particular district receives each year. The rates which have been established pursuant to such a procedure have been set in the contract at a maximum of $3.50 per acre-foot for Class 1 water and $1.50 per acre-foot for Class 2 water. It is provided that the rates for the respective class of water will be announced each year in advance of delivery of water for that year. Thus, the rate may be less than the maximum, but it never may be more under the contract. It is possible, therefore, that if the ability of water users to pay because of poor crop conditions, adverse economic conditions, or for any other reason is less than the maximum stipulated in the contract, machinery is available whereby the rate may be set at less than the maximum. Since the maximum rates will provide for recoupment by the United States of the reimbursable construction costs in a period less than the useful life of the project a decrease would only have the effect of extending the period of time during which a construction component would be included in the rate. In a letter dated November 21, 1947, the Department of the Interior notified the State Engineer that "It is the policy of the department that during any time the water rates under any such contract shall have returned to the United States an appropriate share of the cost of all facilities for the furnishing of water under the contract, the due consideration for the necessity of replacement, the rates will be adjusted to eliminate the construction component." The Department of the Interior, represented by the Secretary of the Interior and the Commissioner of Reclamation, has indicated that it would be in favor of the granting of statutory assurance to the districts of this fact and further has urged that the 40-year limitation on contracts be eliminated and the districts contracting under Section 9(e) be granted the assurance of a continued right to receive water under such a contract. In a hearing before the Subcommittee on Irrigation and Reclamation of the Committee on Public Lands of the House of Representatives, during the second session of the 80th Congress, the Commissioner of Reclamation in commenting upon H.R. 3914, which was a bill to amend the Reclamation Project Act of 1939, urged the granting of these objectives: The Commissioner of Reclamation on January 12, 1948, stated to that subcommittee:

> "* * * we do endorse and recommend these objectives, permanent water rights, credit of the payment for construction under a 9 (e) contract towards the eventual pay-off, discretion as to type, the old traditional 9 (d) or the service type, 9 (e) contract, and hope that this might be favorably considered by the committee and the Congress, and point out that the Congress is the only agency that has the authority and power to permit us to make the change that permits us to do what we want to do, and if this committee can find its way to do that they will again have performed a great service to the reclamation and development of the West." (See note re subsequent legislation on page 15.)

The maximum rates for water set forth in the contract have been based upon the cost allocation report for the Central Valley Project (House Doc. No. 146, 80th Cong., 1st Session).

(b) During the first five years of water deliveries the quantity of water for which the district is required to pay each year is the quantity designated in the schedule submitted by the district.

(c) After the five-year period just described the district will make payment for the specific quantities of water required to be accepted by it pursuant to Article 9 (b) of the contract. All payments for water are required to be made in advance each year before the delivery of water for that year. This is a requirement of Section 9 (e) of the Reclamation Project Act of 1939. Since the beginning of the water year, for the purposes of the contract, is set at March 1st, the annual payment must be made on or before March 1st.

(d) In the event the district fails or refuses to accept delivery of the water required to be accepted under the contract, or if at any time after the sixth year after the initial delivery date the district fails to submit a schedule, it still will be required to make the necessary payment. This provision makes firm the district's obligation to accept and pay for water if it is available. The obligation of the United States to furnish the water to the extent that it is available is fixed by Article 9.

(e) To the extent that Class 1 and Class 2 water is called for by the district in any schedule, deliveries of water will be deemed first to have satisfied Class 1 water and any quantity of water delivered in excess of the obligation for Class 1 water shall be deemed to have been Class 2 water. This is consistent with the theory that Class 1 water is the dependable supply and Class 2 the intermittent or undependable supply.

[NOTE: In 1956 Congress enacted legislation (Act of July 2, 1956, Ch. 492; 43 U. S. C. 485h-l et seq.) to provide that in administering subsections (d) and (e) of Section 9 of the Reclamation Project Act of 1939, the Secretary of the Interior must:

> (1) Include in any subsequent long term 9(e) contract (i.e., term of over 10 years), if requested, provision for renewal under stated terms and conditions mutually agreeable to the contracting parties. Such terms and conditions must provide for an increase or decrease in contract charges to reflect, among other things, increases or decreases in construction, operation, and maintenance costs and improvement or deterioration in the contracting district's repayment capacity.

(2) Include in any such long term 9(e) contract, if requested, provision for conversion of the contract to a 9(d) repayment contract at such time as, account being taken of the amount credited to return by the contracting district as hereafter provided, the remaining amount of construction cost properly assignable for ultimate return by it can probably be repaid within the term of a 9(d) contract.

(3) Credit each year to every district which has entered into or which shall enter into a long term 9(e) contract so much of the amount paid by it on or before the due date as is in excess of the share of the operation and maintenance costs of the project which the Secretary finds is properly chargeable to the district. Credit for payments made prior to the 1956 act must be established by the Secretary as soon after July 2, 1956, as is feasible. After the sum of such credits is equal to the amount which would have been for repayment by the district if a 9(d) contract had been entered into (which amount must be established by the Secretary upon completion of the project concerned or as far in advance thereof as is feasible), no construction component shall be included in any charges made for the furnishing of water and any charges theretofore fixed by contract or otherwise shall be reduced accordingly.

(4) Provide that a contracting district under a 9(d) or long term 9(e) contract shall, during the term of the contract and any renewal thereof and subject to fulfillment of all obligations thereunder, have a first right (to which right the rights of the holders of any other type of irrigation water contract shall be subordinate) to a stated share or quantity of the project's available water supply for beneficial use on the irrigable lands within, or owned by, the district, and a permanent right to such share or quantity upon completion of payment of the amount assigned for ultimate return by the district, subject to payment of an appropriate share of project operation and maintenance costs.

(5) Provide for payment of rates under 9(e) contracts in advance of delivery of water on an annual or semiannual basis.

(6) Include a reasonable construction component in the rates set out in any subsequent long term 9(e) contract prior to amortization of that part of the project construction costs which is assigned to be repaid by the contracting district.

The Secretary is also authorized to negotiate amendments to existing 9(e) contracts to conform said contracts to the provisions described above.]

Article 12 of Contract

Adjustments

12. The amount of any overpayment by the District by reason of the quantity of water actually available for the District during any year, as conclusively determined by the contracting officer, having been less than the quantity of such water which the district otherwise under the provisions of this contract would have been required to receive and pay for, shall be applied first to any accrued indebtedness arising out of this contract then due and owing to the United States by the District and any amount of such overpayment then remaining shall, at the option of the District, be refunded to the District or credited upon amounts to become due to the United States from the District under the provisions hereof in the ensuing year.

Analysis

In the event that the district has made payment to the United States for more water than it receives, the excess payment is to be credited first to any obligation of the district to the United States arising out of the contract, and any surplus remaining will be refunded to the district, or, at the option of the district, credited on amounts to become due to the United States from the district for water deliveries.

Article 13 of Contract

Point of Delivery, Measurement and Responsibility for Distribution of Water

13. (a) The water to be furnished to the District pursuant to this contract will be delivered at Friant-Kern Canal at such points as may be mutually agreed upon in writing by the contracting officer and the District: Provided, however, That in the event that the United States shall have reached the construction of the portion of the Friant-Kern Canal, which probably will embrace such points, and the location has not been so agreed upon such points shall be established at locations as, in the conclusive determination of the contracting officer will best serve the needs of the District.

(b) All water delivered pursuant to this contract shall be measured by the United States at each point of delivery established pursuant to (a) of this article and with equipment installed, operated, and maintained by the United States. Upon the request of the District, the accuracy of such measurements will be investigated by the contracting officer and any errors appearing therein adjusted.

(c) The United States shall not be responsible for the control, carriage, handling, use, disposal, or distribution of water which may be furnished to the District hereunder, outside the facilities then being operated and maintained by the United States, nor for claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water outside of such facilities: Provided, That the United States reserves the right to all waste, seepage, and return flow water derived from water furnished to the District hereunder and which escapes or is discharged beyond the District's boundaries and nothing herein shall be construed as an abandonment or a relinquishment by the United States of any such water, but this shall not be construed as claiming for the United States any right, as waste, seepage, or return flow, to water being used pursuant to this contract for surface irrigation or underground storage within the District's boundaries by the District or those claiming by, through, or under the District.

(d) Notwithstanding any provision of this contract to the contrary, the United States shall not be obligated to furnish either Class 1 or Class 2 water to the District pursuant hereto unless and until the construction by the United States of facilities to the extent required for furnishing of the respective class of

water to the District has been completed as conclusively determined by the contracting officer.

(e) The United States may temporarily discontinue or reduce the amount of water to be furnished to the District as herein provided for the purposes of such investigation, inspection, maintenance, repair, or replacement as may be necessary of any of the project facilities necessary for the furnishing of water to the District or any part thereof but so far as feasible the United States will give the District due notice in advance of such temporary discontinuance or reduction, except in case of emergency, in which case no notice need be given. In the event of any such discontinuance or reduction, the United States will, upon the resumption of service, attempt to approximate the quantity of water which would have been furnished to the District in the absence of such contingency.

Analysis

This article provides for the designation of the points of delivery and the measurement and responsibility for the water furnished.

(a) The delivery points will be such as are mutually agreed upon in writing by the district and the contracting officer. In the event that such an agreement is not reached at the time that the Friant-Kern Canal has been constructed to the points which will probably embrace the delivery points, the United States can provide the necessary turnouts from the canal at such locations as in the conclusive determination of the contracting officer will best serve the needs of the district. This latter proviso was inserted because it is more desirable as a sound engineering and construction matter and reduces costs if turnouts are located in the canal at the time of its original construction. If, therefore, an agreement has not been reached at the time that construction is ready to be performed, it is highly desirable that the contracting officer have the right to locate the turnouts at such points as he deems will best serve the needs of the district. Even without the existence of such a contractual provision the Bureau of Reclamation has consulted with and would consult with the engineers for the respective districts to determine the most desirable locations for such turnouts. This has been done in the case of the Orange Cove Irrigation district.

(b) The water is to be measured by the United States with equipment installed, operated, and maintained by and at the expense of the United States, and upon the request of the district the accuracy of the measurements will be checked and any inaccuracies adjusted. Under another article of this contract (Article 22) as well as this one, the district will have the right to examine the measuring and recording equipment.

(c) In effect, this subdivision states that the United States shall not be responsible for the control or handling of water furnished by the district, outside the facilities operated and maintained by the United States or for any damage caused by water outside those facilities. In other words, after control of the water has been turned over to the district, the responsibility for the handling of that water and any damage resulting therefrom lies with the district but until such time the responsibility is that of the United States.

The proviso to subdivision (c) of this article has caused much discussion and comment, primarily from a lack of understanding of its contents. The essence of the provision is merely to state, as is a common practice, that the furnisher of the water reserves the right to all waste, seepage, and return flow water which is not claimed by the district or any person entitled to the water claiming by, through, or under the district. Any right conferred upon the United States by this proviso is limited to water which escapes or is discharged beyond the district's boundaries. Any water underlying the lands of the district which the district chooses to claim or to which anyone else has a right cannot be claimed by the United States. In order to assert any claim to such water under the proviso, it would be necessary for the United States to establish: (1) That it was waste, seepage, or return flow water; (2) that it had escaped or was discharged beyond the district's boundaries; (3) that it was water to which no one was entitled as a matter of right under state law; and (4) that it was not being claimed or used by the district or those claiming by, through, or under the district. Frequently there have been projects where, because of drainage factors or because districts did not wish to recover the waste, seepage, or return flow water themselves, in a particular instance, it was desirable in the interest of conservation to recover such water for project uses, and that is the intention in this instance. It might also be pointed out that the United States could not, and would not, reclaim any water under this proviso unless it could put the water to some beneficial use and unless the cost of recovery should not be excessive.

(d) In the discussion of article 9(b) allusion was made to the fact that no Class 1 water would be furnished to the district and the district would not be obligated to accept and pay for any such water until the facilities necessary for furnishing it had been completed. This limitation was inserted for the purpose of establishing the point of time which the obligation of both the United States and the district would commence with the furnishing and acceptance of Class 1 water. Article 13(b) is repetitious of this and also states that the United States will not be obligated to furnish either Class 1 or Class 2 water until the facilities necessary for furnishing the respective class have been completed. In other words, a contract might be executed with a particular district along the Friant-Kern Canal at a time when that canal had not been completed to the point where the district could be served or, if completed

to that point, the furnishing of even Class 2 water to the district might interfere with the construction work on the remainder of the canal. It was provided, therefore, that there would be no obligation on the part of the United States to commence service until the contracting officer had conclusively determined that the necessary facilities had been completed. It should be emphasized that, once the service had been started, the contract would not permit the United States to discontinue the service upon the basis of a determination that the works had not been completed. We wish to emphasize also, as has already been indicated, that the secretary, as a matter of law even though his determination is said to be conclusive, may not be arbitrary, capricious, fraudulent, or grossly in error in arriving at his decision, and that his decision can be attacked upon those grounds if he acts improperly.

(e) This subdivision permits the United States to lessen or discontinue deliveries for the purpose of inspecting or repairing the facilities. Upon the resumption of service the United States is required to exercise due diligence to the end that deliveries thereafter will approximate those which would have been required to be made in the absence of the shutdown. Elsewhere in the contract (Article 14[a]) it is provided that if, as a result of the shutdown, less water is delivered to the district than the quantity to which it is entitled under the contract, a refund or credit will be made with respect to the payments previously made by the district.

Article 14 of Contract

United States Not Liable for Water Shortage

14. (a) There may occur at times a shortage during any year in the quantity of water available for furnishing to the District by the United States pursuant to this contract through and by means of the project and in no event shall any liability accrue against the United States or any of its officers, agents, or employees for any damage, direct or indirect, arising from a shortage on account of errors in operation, drought or unavoidable causes. In no event shall the United States (A) deliver from Friant Dam in any year any Class 2 water pursuant to this or any other contract heretofore or hereafter entered into involving the same project water supply, until the contracting officer shall have determined that the quantity of Class 1 water required to be delivered to the District from Friant Dam hereunder and to others under any such other contract will be available for delivery in said year, nor (b) execute contracts which, together with this contract, shall in the aggregate provide for furnishing during the life of this contract Class 1 water from Friant Dam in excess of 800,000 acre-feet per year. In any year in which there may occur a shortage from any cause, the United States reserves the right to apportion the available water supply among the District and others entitled, under existing and future contracts, to receive Class 1 water from Friant Dam in accordance with conclusive determination of the contracting officer as follows:

(i) A determination shall be made of the total quantity of Class 1 water agreed to be accepted during the respective year under all contracts then in froce for the delivery of Class 1 water through Friant-Kern and Madera Canals and the San Joaquin River from Friant Dam, the amount so determined being herein referred to as the Class 1 contractual commitments.

(ii) A determination shall be made of the total quantity of Class 1 water at Friant Dam which is available for meeting Class 1 contractual commitments, the amount so determined being herein referred to as the available supply.

(iii) The total quantity of Class 1 water agreed to be accepted by the District during the respective year, under Article 9 hereof, shall be divided by the Class 1 contractual commitments, the quotient thus obtained being herein referred to as the District's contractual entitlement.

(iv) The available supply shall be multiplied by the District's contractual entitlement and the result shall be the quantity of water required to be delivered by the United States to the District for the respective year, but in no event shall such amount exceed the total quantity of Class 1 water agreed to be accepted by the District pursuant to Article 9 hereof.

Insofar as determined by the contracting officer to be practicable, the United States will, in the event a shortage appears probable, notify the District of such determinations in advance of the irrigation season. In the event that in any year there is delivered to the District, by reason of any such shortage or apportionment, or any discontinuance or reduction of service as set forth in Article 13 (e) hereof, less than the quantity of water which the District otherwise would be entitled to receive hereunder, there shall be made an adjustment on account of the amounts paid to the United States by the district for Class 1 water for said year in a manner similar to that provided for in Article 12 hereof. To the extent of such deficiency, such adjustment shall constitute the sole remedy of the District or any one having or claiming to have by, through, or under the District, the right to the use of any of the water supply provided for herein. The United States does not guarantee the sale and delivery of any Class 2 water and such Class 2 water will be furnished and delivered to the District only if, as, and when said water is available for delivery to the District as conclusively determined by the contracting officer.

(b) The rights of the District under this contract are subjected to the terms of the Contract for Exchange of Waters dated July 27, 1939, between the United States and the San Joaquin and Kings River Canal and Irrigation Company, Incorporated, and

others, and recorded on the 18th day of September 1939, in the office of the County Recorder of

(i) Fresno County in Book of 1810 of Official Records at Page 50;

(ii) Stanislaus County in Book 704 of Official Records at Page 1;

(iii) Merced County in Book 623 of Offieial Records at Page 417;

(iv) Madera County in Book 247 of Official Records at Page 113.

Analysis

(a) By this subdivision the United States agrees that it will not execute contracts which in the aggregate will provide for the furnishing of more than 800,000 aere-feet of Class 1 water from Friant Reservoir. The district agrees that in the event of a shortage of water which arises from errors in operation, drought, or unavoidable causes, the United States will not be liable for damages arising from such shortage. In the event of any shortage, the United States will be obligated to apportion the available supply among the districts entitled to reeeive Class 1 water. The formula which the United States must follow for the apportionment is set forth in the same subdivision and states that eaeh distriet whieh has contracted for Class 1 water will be entitled to a portion of the available supply which bears the same ratio to that supply that the quantity to which it would have been entitled under the contract during the respective year bears to the total amount of Class 1 water whieh the United States would have been required to deliver to all contracting distriets had there been no shortage. The United States further agrees that it will deliver no Class 2 water in any year until the contracting officer determines that there will be suffieient water available to meet all Class 1 commitments for that year. It is provided also that in the event of a shortage and apportionment, a eredit or refund will be made to the district. The subdivision states, in addition, that Class 2 water will be furnished only, if, as, and when it is available. The following points should be borne in mind with reference to this article:

(1) That the United States cannot ereate a shortage, but that the shortage must arise from errors, in operation, drouth, or unavoidable causes, and that if the shortage arises from causes other than these, and which the United States eould, by reasonable prudence and foresight, have avoided, it will be liable;

(2) That the provision merely relieves the the United States of liability for failure to deliver for the causes mentioned, and does not permit the United States arbitrarily to refuse to deliver water if it is available; and

(3) That in the event of a shortage the United States must apportion the available supply in accordance with, and only in accordance with, the stated formula.

(b) On July 27, 1939, the United States executed a contract with the San Joaquin and Kings River Canal and Irrigation Company, Inc., for the exchange of water. This contract in part makes water from the San Joaquin River available for distribution from the Friant-Kern Canal. Article 7(k) of that contraet states that "* * * the United States further promises and agrees that with respect to any contract between it and third parties for the use of the water of the San Joaquin River, it will either notify said parties in writing, prior to the execution of said contract, of the rights reserved herein to the contracting companies, or will specifically provide for the reservation of said rights in any such contracts." Subdivision (b) of Artiele 14 of the Orange Cove contract was inserted in order to comply with the contract of July 27, 1939, and makes the Orange Cove contract subject to the 1939 contract.

Article 15 of Contract

Use of Water Furnished to District

15. The District agrees that water furnished to it by the United States pursuant to this contract will not be delivered or furnished by the District for any purpose other than agricultural purposes, including but not restricted to the watering of stock, or underground water replenishment without the written consent of the contracting officer.

Analysis

Seetions 7 and 9(a) of Reelamation Projeet Act of 1939 require that allocations of cost be made to the respective features or uses of the project. After those allocations or divisions have been made, water rates are based for each use upon the allocation of reimbursable cost made with respect to the particular feature or use. For example, municipal and industrial water rates are based upon the allocation of a portion of the total construction cost of the project to municipal and industrial supply and computed pursuant to Seetion 9(e) of the Reclamation Project Act of 1939. Irrigation water rates are based upon the allocation to irrigation supply, and computed upon the basis of Section 9(e) of that act. Thus, in a contract providing for the furnishing of irrigation water and involving only a payment of the irrigation water rate, it is neeessary to restrict the use to agricultural or irrigation purposes. If, however, the same district were to desire water for municipal and industrial uses, as well as irrigation purposes, such uses would be permitted and language would be included to insure the payment of appropriate rates based upon the particular uses. The language presently contained in Article 15 should not be understood to preclude

the use of water for domestic purposes on the farm. The words "agricultural purposes" were used in order to permit such a use. The purpose of the article was to insure that water furnished by the district to customers solely for domestic, municipal, or industrial uses would be charged to the district at the rate established for that use.

Article 16 of Contract

Agreed Charges, A General Obligation of the District

16. The District as a whole is obligated to pay to the United States the charges becoming due as provided in this contract notwithstanding the individual default in the payment to the District by individual water users of assessments, tolls or other charges levied by the District.

Analysis

This article is a statement of the joint liability of the district. The individual defaults by landowners in the payment of assessments and tolls does not relieve the district of its obligation to pay the United States. Section 9 of the act of 1939 requires a joint obligation of the district.

Article 17 of Contract

All Benefits Conditioned Upon Payment

17. Should any assessment or assessments required by the terms of this contract and levied by the District against any tract of land or water user in the District be judicially determined to be irregular or void or should the District or its officers be enjoined or restrained from making or collecting any assessments upon such land or from such water user as provided for herein, then such tract shall have no right to any of the benefits of this contract, and no water made available by the United States pursuant hereto be furnished for the benefit of any such lands or water users, except upon the payment by the landowner of his assessment or a toll charge for such water, notwithstanding the existence of any contract between the District and the owner or owners of such tract. Contracts, if any, betwen the District and the water users involving water furnished pursuant to this contract shall provide that such use shall be subject to the terms of this contract. It is further agreed that the payment of charges at the rates and upon the terms and conditions provided for herein, is a prerequisite to the right to water furnished to the District pursuant to this contract; and no irregularity in levying taxes or assessments by the District, nor lack of authority in the District, whether affecting the validity of District taxes or assessments or not, shall be held to authorize or permit any water user of the District to demand water made available pursuant to this contract, unless charges at the rates and upon the terms and conditions provided for herein have been paid by such water user.

Analysis

This article provides that in the event any assessment levied by the district in order to meet its obligations under the contract is declared by a court to be irregular or void the water user may not receive any benefits of the contract unless he pays for the service he receives. In other words, no water user will be entitled to receive project water made available by the contract if he refuses to make the payments to the district which are necessary for the district to meet its financial obligations to the United States. The article also states that any contract between the district and the water users shall include provisions to the same effect.

Article 18 of Contract

Levy of Taxes and Assessments-Fixing of Rates and Tolls

18. The District will cause to be levied and collected all necessary taxes and assessments and will use all of the authority and resources of the District to meet its obligations hereunder, to make in full all payments to be made pursuant to this contract on or before the date such payments become due and to meet its other obligations under this contract. The District may, either or both, require the payment of toll charges or levy assessments for such water or service. All assessments levied by the District to meet the obligations accruing under this contract shall, unless otherwise determined by the board of directors of the District, be upon an ad valorem basis.

Analysis

Under the terms of this article the district agrees to use all of its powers including the power to assess or to make toll charges in order to meet its payments to the United States. The choice of the various methods is left to the district. This also is covered, in connection with contracts between irrigation districts and the United States, in Section 23240 of the Water Code of California. The last sentence of Article 18 of the contract states that, unless the board of directors determines otherwise, any assessments levied by the district shall be on an ad valorem basis. Section 23240 of the Water Code of California provides that assessments necessary for raising revenues to meet obligations to the United States under the contract will be on a benefit basis. There is a question as to whether assesments could be on an ad valorem basis unless specifically provided for in the contract. The last sentence of Article 18 is intended to permit the district to assess either on a benefit theory or on an ad valorem basis. The choice is left to the board of directors.

Article 19 of Contract

Refusal of Water in Case of Default

19. No water shall be furnished to the District or by the District to or for the use of any lands or

parties therein during any period in which the District may be in arrears in the advance payment of charges accruing under this contract. No water shall be furnished to or by the District pursuant to this contract for lands or parties which are in arrears in the payment to the District of any assessments, rates, tolls, or rental charges of the District levied or established by the District and necessary for the purpose of raising revenues to meet the payment by the District to the United States of the District's obligation under this contract. The provisions of this article are not exclusive and action taken pursuant hereto shall not prejudice or preclude the United States from exercising any other remedy to enforce collection of any amounts due hereunder.

Analysis

This article is required by Section 6 of the Reclamation Project Act of 1939. The article states that the United States will not furnish water to the district if the district is in arrears in the advance payment of charges accruing under the contract. The district agrees that it will not furnish project water to any water user if he is delinquent in any payment to the district of funds *which are necessary to the district for the purpose of meeting its obligations to the United States under the contract.* This would not prevent the district from "carrying" a delinquent water user if the payment was not necessary in order for the district to meet its obligations to the United States.

Article 20 of Contract

Penalty Upon Delinquency in Payment

20. Upon each charge to be paid by the District to the United States pursuant to this contract which shall remain unpaid after the same shall have become due and payable, there shall be imposed a penalty of one-half ($\frac{1}{2}$) of one (1) percent per month of the amount of such delinquent installment from and after the date when the same becomes due until paid, and the District hereby agrees to pay said penalty: Provided, That no penalty shall be chargeable against the net amount of any adjustment made pursuant to Article 12 hereof.

Analysis

A penalty of one-half of 1 percent per month on each delinquency of the district in payments to the United States is provided by this article. The penalty is required by Section 6 of the Reclamation Project Act of 1939.

Article 21 of Contract

District to Keep Books and Records and Report Crop and Other Data

21. The District shall establish and maintain account and other books and records sufficient to enable it to furnish, insofar as the District is permitted to do so by the laws of the State of California, to the Bureau of Reclamation reports and statements to such extent and in such manner and form as may be prescribed by the United States as to information pertaining to (a) accounts and financial transactions of the District, insofar as such information pertains to this contract and operations thereunder, (b) crops raised and agricultural and livestock products produced on the lands within the District, a report thereon to be furnished to the contracting officer annually on or before December 31.

Analysis

This article, inserted pursuant to Section 6 of the Reclamation Project Act of 1939, requires the district to maintain account books and other records sufficient to enable it to furnish to the United States information, requested on forms furnished by the United States, relating to financial accounts and transactions of the district insofar as the information is pertinent to the contract and as to crops and agricultural products produced within the district. The district is not required to follow any prescribed procedure or to maintain any specific kind of accounting system. It will be recalled in connection with the discussion of Article 11 that the rate for water service is to be announced each year and may not be above a stated maximum, thus permitting the setting of the rate at a point which is commensurate with the ability of the water users to pay. In order to ascertain each year what this rate should be and what represents the farmers' ability to pay for water, it is necessary that the United States have information available as to crops and livestock produced within the district.

Article 22 of Contract

Inspection of Books and Records

22. Subject to applicable Federal laws and regulations, the proper officers or agents of the District shall have full and free access at all reasonable times to the project account books and official records of the Bureau of Reclamation, insofar as the same pertain to the matters and things provided for in this contract, with the right at any time during office hours to make copies thereof, and the proper representatives of the United States shall have similar rights in respect to the account books and records of the District.

Analysis

This article permits each party, that is, the district as well as the United States, to the contract to examine the books and records of the other contracting party to the extent that the books and records pertain to matters with which the contract is concerned.

Article 23 of Contract

Changes in Organization of District

23. (a) While this contract is in effect no change will be made in the District either by inclusion or exclusion of lands, by partial or total consolidation or

merger with another district, by procedings to dissolve, or otherwise, except upon the contracting officer's written assent thereto.

(b) In the event lands are annexed to the District as provided herein, the parties hereto may be supplemental agreement increase the quantity of water which is to be furnished by the United States to the District and which the District is required to receive and pay for pursuant to this contract.

Analysis

Section 23202 of the Water Code of California requires that when a district has contracted with the United States under the Federal reclamation laws, the district may not be dissolved, and no land may be annexed to or excluded from the district without the written consent of the Secretary of the Interior, filed with the district. Article 23 of the contract makes the same provision. When the contract is executed with the United States all lands in the district are jointly liable for the payment of the amounts due under the contract. An exclusion of lands from the district could lessen the security of the United States, and additions to the district might spread the available water supply so thin that the district as a whole could not support the payments. The provision is not unlike the legal requirement that the mortgagor may not dispose of, reduce, or change the security for the debt without the consent of the mortgagee.

Articles 24 to 27, inclusive, of Contract

Land Not to Receive Water Furnished to District by United States Until Owners Thereof Execute Certain Contracts

24. No water made available pursuant to this contract shall be furnished to any excess lands as defined in Article 26 hereof unless the owners thereof shall have executed valid recordable contracts in form prescribed by the United States, agreeing to the provisions of Articles 24, 25, and 26 of this contract; agreeing to the appraisal provided for in Article 25 hereof and that such appraisal shall be made on the basis of the actual bona fide value of such lands at the date of the appraisal without reference to the construction of the project, all as hereinafter provided; and agreeing to the sale of his excess lands under terms and conditions satisfactory to the Secretary and at prices not to exceed those fixed as hereinafter provided. No sale of any excess lands shall carry the right to receive water made available pursuant to this contract unless and until the purchase price involved in such sale is approved by the contracting officer, and upon proof of fraudulent representation as to the true consideration involved in such sale the United States may instruct the District by written notice to refuse to furnish any water subject to this contract to the land involved in such fraudulent sales and the District thereafter shall not furnish said water to such lands.

Valuation and Sale of Excess Lands

25. (a) The value of the excess irrigable lands within the District, held in private ownership of large landowners as defined in the next succeeding article hereof, for the purposes of this contract, shall be determined, subject to the approval thereof by the Secretary, by three appraisers. One of said appraisers shall be designated by the Secretary and one shall be designated by the District and the two appraisers so appointed shall name the third. If the appraisers so designated by the Secretary and the District are unable to agree upon the appointment of the third, the presiding justice of the Fourth District Court of Appeals of the State of California shall be requested to designate the third appraiser.

(b) The following principles shall govern the appraisal:

(i) No value shall be given such lands on account of the existing or prospective possibility of securing water from the Project.

(ii) The value of improvements on the land at the time of said appraisal shall be included therein, but shall also be set forth separately in such appraisal.

(c) The cost of the first two appraisals and each subsequent appraisal requested by the United States shall be paid by the United States.

(d) Any improvements made or placed on the appraised land after the appraisal herein above provided for prior to sale of the land by a large landowner may be appraised in like manner.

(e) Excess irrigable lands sold by large landowners within the District shall not carry the right to receive water made available pursuant to this contract for such lands and the District agrees to refuse to furnish such water to lands so sold until, in addition to compliance with the other provisions hereof, a verified statement showing the sale price upon any such sale shall have been filed with the District.

(f) The District agrees to take all reasonable steps requested by the contracting officer to ascertain the occurrence and conditions of all sales of irrigable land of large landowners in the District and to inform the United States concerning the same.

(g) A true copy of this contract and of each appraisal made pursuant thereto shall be maintained on file in the office of the District and like copies in such principal office of the Bureau of Reclamation as may be established hereafter in connection with the Project and shall be made available for examination during the usual office hours by all persons who may be interested therein.

Excess Lands

26. (a) As used herein the term "excess land" means that part of the irrigable land within the District in excess of 160 acres held in the beneficial ownership of any single person, or in excess of 320 acres held in the beneficial ownership of husband and wife jointly, as tenants in common or by the entirety, or as community property; the term "large landowners"

means an owner of excess lands and the term "nonexcess land" means all irrigable land within the District which is not excess land as defined herein.

(b) Each large landowner as a further condition precedent to the right to receive water made available pursuant to this contract for any of his excess land shall:

(i) Before any water is furnished by the District to his excess land, execute a valid recordable contract in form prescribed by the United States, agreeing to the provisions herein contained in Articles 24, 25, and 26 agreeing to dispose of his excess land in accordance therewith to persons who can take title thereto as nonexcess land as herein provided and at a price not to exceed the approved, appraised value of such excess land and within a period of ten years after the date of the execution of said recordable contract and agreeing further that if said land is not so disposed of within said period of ten years the Secretary shall have the power to dispose of said land subject to the same conditions on behalf of such large landowner; and the District agrees that it will refuse to furnish said water to any large landowner other than for his nonexcess land until such owner meets the conditions precedent herein stated.

(ii) Within thirty days after the date of notice from the United States requesting such large landowner to designate his irrigable lands under the project which he desires to designate as nonexcess land, file in the office of the District, in duplicate, one copy thereof to be furnished by the District to the Bureau of Reclamation, his written designation and description of lands so selected to be nonexcess land and upon failure to do so the District shall make such designation and mail a notice thereof to such large landowner, and in the event the District fails to act within such period of time as the contracting officer considers reasonable, such designation will be made by the contracting officer, who will mail a notice thereof to the District and the large landowners. The large landowner shall become bound by any such action on the part of the District or the contracting officer and the District will furnish said water only to the land so designated to be nonexcess land. A large landowner may, with the consent of the contracting officer, designate land other than that previously designated as nonexcess land: Provided, That an equal acreage of the land previously designated as nonexcess land, upon such new designation, become excess land thereafter subject to the provisions of Article 24, 25, and 26 of this contract and shall be described in an amendment of such recordable contract as may have been executed by the large landowner in the same manner as if such land had been excess land at the time of the original designation.

Amendment of Federal Reclamation Laws

27. In the event that the Congress of the United States repeals the so-called excess land provisions of Federal reclamation laws, Articles 24, 25, and 26 of this contract will no longer be of any force or effect, and, in the event that the Congress amends the excess-land provisions or other provisions of the Federal reclamation laws the United States agrees, at the option of the District, to negotiate amendments of appropriate articles of this contract, all consistently with the provisions of such repeal or amendment.

Analysis

These articles are the so-called excess land provisions of the contract and the provisions dealing with possible changes in the Reclamation Law. Articles 24, 25, and 26 are included pursuant to Section 46 of the Omnibus Adjustment Act of 1926 (44 Stat. 649, 650, 43 U.S.C. 423(e)). Article 26 defines the term "excess land" to mean all irrigable land in excess of 160 acres which is beneficially owned by an individual. It should be borne in mind that this applies only to irrigable land and only to the acreage in excess of 160 acres. It does not include the first 160 acres of irrigable land owned by any person. For the purpose of clarification reference is made in the contract to cases of a joint tenancy, tenancy in common, tenancy by the entirety, or property held as community property by husband and wife. Each co-tenant owns a beneficial interest in the entire property, and therefore the excess land in such interest is that which is in excess of 160 acres for each individual or in the case of husband and wife, 320 acres. The same would be true of those types of interest owned by individuals jointly who are not husband and wife. Article 24 provides that the district will furnish no water to excess land unless the owner executes a recordable contract prescribed by the United States, and which provides that the landowners signing the contract agree: (1) To the terms and conditions of the excess land provisions contained in Articles 24, 25, and 26 of the contract; (2) that the excess land will be appraised in the manner provided in Article 25 of the contract between the district and the United States; (3) that he will dispose of the excess land as provided in the district-government contract and the recordable contract; and (4) if he has not disposed of the excess land within 10 years the Secretary of the Interior may sell such land for him. The excess land of the district will be appraised by three persons. One appraiser will be appointed by the United States, one by the district, and the two so named will designate the third. If the first two cannot agree the Presiding Judge of the District Court of Appeals of the State of California for the particular district will be requested to designate the third. While the appraisal is subject to the approval of the secretary as bound

by the principles and procedures set forth in the contract, the appraisal under the contract must represent the actual bona fide value of the land exclusive of any value attributable to the existing or prospective possibility of the land receiving project water. The value of improvements is included, but is required to be set forth separately in the appraisal, and any improvements placed upon the land subsequent to the appraisal will be appraised and their value added to the appraised valuation. Thus, if a landowner wishes to secure water for his excess land, he must execute a recordable contract before the district may furnish water to that land. Before he executes the recordable contract, however, the appraisal will have been made in the manner previously described. If he does not like the manner in which the appraisal has been made or the valuation determined by the apraiser, or if, for any other cause, he does not wish to sign the recordable contract, he is not obligated to do so, and he may still receive water for 160 acres of his land. If the excess landowner does not sign a recordable contract he is required to designate the land which is to be nonexcess and with respect to which he will be eligible to receive project water. If he does not designate the nonexcess land within thirty days after a request for designation has been furnished to him by the United States, the district agrees to make the designation and if the district fails to act within a reasonable time the designation may be made by the United States. Thereafter, until the designation is changed, project water may be put only upon the designated land. The landowner may keep the excess land, and if he so desires use his independent water supply upon it. If excess land is sold for more than the appraised valuation the district is required to furnish no water to it. A verified statement showing the sales price must be furnished to the district in the case of sales of excess land before the land will be entitled to receive project water. The district agrees to take all reasonable steps to ascertain the terms and conditions of sales of excess land within the district. Summarized, the rights and duties of the various parties under the excess land provisions of the contract are as follows:

A. The Excess Landowner

1. *Rights*

(a) He may receive project water for 160 acres of irrigable land without any action with reference to his excess land;

(b) He may receive water for his excess land if he executes a recordable contract;

(c) If he does not execute a recordable contract he may designate his nonexcess land which will be entitled to receive project water;

(d) He may retain his excess land and utilize his own water supply upon it;

(e) If the Secretary of the Interior fails to take any action on the appraisal made by the three appraisers, the exeess landowner may sell his land as he sees fit;

(f) He may see the appraised valuation before he signs the recordable contract;

(g) He may insist that sales made by the secretary under the recordable contract after the 10-year period has elapsed be for cash or terms satisfactory to the owner.

2. *Obligations*

(a) If he executes a recordable contract he agrees to sell his land at no more than the appraised valuation;

(b) If he does not sell his excess land within 10 years after he executes the recordable contract, he authorizes the Seeretary of the Interior to dispose of it for him at not less than the appraised valuation;

(c) If he does not execute a recordable contract and does not designate his nonexcess land which is to receive water, the designation may be made for him by the district or the United States.

B. The District

1. *Rights*

(a) It may designate one of the appraisers;

(b) It may designate the nonexcess land of the landowner who fails to do so;

(c) If the excess land provisions of the law are repealed by the Congress the district is relieved of its obligation to comply with those provisions in the contract;

(d) If the excess land provisions of the Reelamation Law are amended the district is entitled to a renegotiation of the excess land provisions in the contract.

2. *Obligations*

(a) It must refuse to furnish project water to exeess land unless a recordable contract has been executed;

(b) It must refuse to furnish water to excess land sold at a price above the appraised valuation;

(c) It must refuse to furnish project water to excess land sold until it has been furnished a verified statement showing the sale price;

(d) It agrees to take such reasonable steps as have been requested by the United States to ascertain the terms and conditions of sale of excess land within the district;

(e) It agrees to maintain in its files a copy of its contract with the United States and a copy of each appraisal.

C. The United States

1. *Rights*

(a) It may insist that no water be furnished to the excess land of any landowner unless a recordable contract is executed;

(b) It may designate one of the appraisers;

(c) It may review the appraisal, subject, however, to the standards set forth in the contract and those set forth by the courts for the determination of "actual bona fide value";

(d) It may prescribe the form of recordable contract;

(e) It may request the district to take reasonable steps to ascertain the conditions of sales of excess land in the district;

(f) It may designate the nonexcess land of an excess landowner if both he and the district fail to do so;

(g) In case of fraudulent sales with reference to the appraised price it may instruct the district to furnish no water to the land involved in such sale;

(h) It may dispose of the excess land subject to the recordable contract if that land is not sold by the excess landowner within 10 years after the execution of the recordable contract.

2. *Obligations*

(a) It must permit the delivery of project water to each ownership of 160 acres whether or not a recordable contract is executed and whether or not the owner agrees to dispose of his land in excess of 160 acres;

(b) It must pay for the first two appraisals and all subsequent appraisals requested by the United States;

(c) It must permit the furnishing of water to excess land if a recordable contract is executed by the owner of the land;

(d) It must furnish a form of recordable contract;

(e) If the power of attorney is exercised to sell excess land the United States must sell the land at no less than the appraised valuation and for cash unless other terms are agreed to by the excess landowner;

(f) If the excess land provisions are repealed by the Congress, the United States must dispense with the enforcement of the excess land provisions of the contract;

(g) If the excess land provisions of the law are amended it must negotiate amendments of the excess land provisions of the contract upon the request of the district.

Article 28 of Contract

Contingent Upon Appropriations or Allotments of Funds

28. The expenditure of any money or the performance of any work by the United States herein provided for which may require appropriations of money by the Congress or the allotment of funds, shall be contingent upon such appropriations or allotments being made. The failure of the Congress so to appropriate funds or the failure of an allotment of funds shall not relieve the District from any obligations then accrued under this contract and no liability shall accrue to the United States in case such funds are not appropriated or allotted.

Analysis

This article is one which is included in practically all government contracts. The contract here under discussion has a term of 40 years. It is a basic principle of law that one Congress cannot bind succeeding Congresses and there is no assurance that in future years the Congress will make available the funds that are necessary for the continued operation or completion of the project. The so-called Anti-deficiency Act (34 Stat. 49) prohibits the incurring of obligations for involving expenditures for a period longer than that for which the Congress has appropriated funds.

Article 29 of Contract

Officials Not to Benefit

29. No member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, but this restriction shall not be construed to extend to this contract if made with a corporation or company for its general benefit.

Analysis

This article is required pursuant to Section 22 of Title 41 of the United States Code.

Article 30 of Contract

Notices

30. Any notice or announcement which the provisions hereof contemplate shall be given to one of the parties hereto by the other shall be deemed to have been given if deposited in the United States Post Office, on the part of the United States in a franked envelope addressed to the District at its office and on the part of the District in a postage prepaid envelope addressed to the Bureau of Reclamation, Department of the Interior, Sacramento, California, or such other address as from time to time may be designated by the contracting officer in a written notice to the District: Provided, however, That this article shall not preclude the effective service of any such notice or announcement by other means.

Analysis

Provision is made here for the furnishing of notice to either party and is self-explanatory.

Article 31 of Contract

Assignment Prohibited: Successors and Assigns Obligated: Default

31. The provisions of this agreement shall apply to and bind the successors and assigns of the respective parties, but no assignment or transfer of this contract or any part thereof or interest therein shall be valid until and unless approved by the United States. Any waiver at any time by either party to this contract of its rights with respect to a default, or any

other matter arising in connection with this contract, shall not be deemed to be a waiver with respect to any subsequent default or matter. All rights of action for breach of this contract are reserved to the United States as provided in Section 3737 of the Revised Statutes of the United States as amended (41 U.S.C. 15).

Analysis

Section 3737 of the Revised Statutes prohibits the assignment of any contract executed to the United States without the consent of the United States, and Article 31 of the contract provides for notice of the effect of any attempted assignment by the district.

Article 32 of Contract

Assurance Relating to Validity of Contract

32. Promptly after the execution and delivery of this contract the District shall file and prosecute to a final decree, including any appeal therefrom to the highest court of the State of California, in a court of competent jurisdiction a special proceeding for the judicial examination, approval, and confirmation of the proceedings had for the organization of the District and the proceedings of the District Board of Directors and of the District leading up to and including the making of this contract and the validity of the provisions thereof, as provided for by Section 23225 of the Water Code of California (St. 1943, Ch. 368, Div. 11, Part 6, Chap. 2, Art. 3, Sec. 23225, approved May 13, 1943); and this contract shall not be binding on the United States until said District organization, proceedings, and contract shall have been so confirmed by a court of competent jurisdiction or pending appellate action if ground for appeal be laid.

IN WITNESS WHEREOF, The parties hereto have hereunto affixed their names the day and year hereinabove written.

THE UNITED STATES OF AMERICA
By_____

ORANGE COVE IRRIGATION DISTRICT
By_____

(SEAL)

Attest

_____

Analysis

This article requires the confirmation of the contract by a court of competent jurisdiction. The procedure is contemplated by and machinery is provided in Section 23225 of the Water Code of California. The contract will not be binding upon the United States until such confirmation has been obtained.

APPENDIX V

The committee was furnished with a copy of a proposed draft of subjects to be covered by a contract between the State Department of Water Resources and the counties to be served by the South Bay Aqueduct. It is reproduced here to show the breadth of subject matter involved in a contract for delivery of water from the proposed state facilities.

RECOMMENDED PRINCIPLES FOR CONTRACTING FOR WATER SERVICE FROM THE STATE OF CALIFORNIA THROUGH THE SOUTH BAY AQUEDUCT AND FOR REPAYMENT OF AQUEDUCT CONSTRUCTION AND WATER SERVICE COSTS BY WATER USERS AND OTHERS BENEFITING

Section I. "Principles of Cost Distribution on Which to Base Repayment Contracts," recommends that repayment be divided into two parts:

A. Fixed annual charges for retirement of capital costs of works in the South Bay Zone and such portion and proportion of the California Aqueduct System as is used to serve this zone.

B. Water service charges for contracted amounts of water, under the following provisions:

1. The water service charge should be stated as a separate unit price for water (a) to the Delta (b) across and from the Delta (c) from the California and South Bay Aqueduct Systems.
2. The water service charge should include allowances for reimbursement of the following costs:
   a. Capital investment in upstream storage and conveyance works to and across the Delta, including seepage control and, if necessary, physical barriers to control intrusion of saline Bay waters.
   b. Interest on such capital investment even though funds used may be interest free to the State.
   c. Operating, maintenance, replacement and pumping costs for the delivery of water to South Bay Aqueduct users, including the fair market value of System power used for pumping, and releases of water to repel saline Bay waters, or provision of a substitute Delta water supply, if either are used.

C. The following costs should not be reimbursable: flood control, San Joaquin Valley drainage, recreation and wildlife enhancement and fisheries preservation.

D. New power revenues from generation at major dams above the Delta should be applied to reduction of the water service charges at the Delta.

Section II. "Types of Contracts," recommends three categories of contracts that could be executed by the Boards of Supervisors, acting for all interests in the South Bay Zone:

A. A primary contract requiring the State to deliver quantities of water to the South Bay Zone on specified schedules under commitments to maintain quality and continue development of adequate upstream supplies to meet these obligations.

B. An ancillary contract between the Boards of Supervisors allocating quantities of water and distributing responsibility for meeting annual charges through a combination of fixed annual payments, water tolls, and taxes, assessments or other sources.

C. Contracts with water using agencies within each county assigning to them quantities of water received under the primary contract and setting forth obligations to repay costs.

Section III. "Recomputation, Review and Adjustment of Reimbursable Costs," recommends that the State compute charges on a 50-year basis, terminate South Bay Zone fixed annual charges at the end of the payout period, allocate additional California aqueduct construction costs proportionately, review costs periodically and adjust charges to reflect cost changes, and give notice of impending increases in charges.

I. *Principles of Cost Distribution on Which to Base Repayment Contracts*

The State's reimbursable costs for construction of the South Bay Aqueduct and for water service from the Aqueduct should be repaid in two parts: (1) fixed annual charges for retirement of capital costs allocated to the South Bay Zone and (2) a water service charge for contracted amounts of water.

A. *Fixed Annual Charges*

1. The fixed annual charges should retire the following costs of California Aqueduct construction and South Bay Zone construction over a 50-year payout period:
   a. Capital expenditures allocated to the South Bay Zone, including South Bay Aqueduct costs and a proportionate share of California Aqueduct costs between Pumping Plant No. 1 (California Aqueduct intake) and the South Bay Aqueduct intake.
   b. Interest on such capital expenditures whether funds derive from:
      (1) California Water Fund.
      (2) California Water Resources Development Bond Fund.

B. *Water Service Charges*

1. The water service charge should be stated separately as a price per unit of water conveyed:
   a. To the Delta.
   b. Across the Delta to Pumping Plant No. 1.
   c. From Pumping Plant No. 1 to turnouts along the South Bay Aqueduct.
2. The water service charge should include the following reimbursable cost components allocable to South Bay Zone users:
   a. Capital investment in upstream storage and conveyance works to Pumping Plant No. 1, including:
      (1) Seepage control works made neeessary by construction and operation of the California Water Resources Development System.
      (2) Physical barriers to control intrusion of saline Bay waters in the Delta, if necessary.
   b. Interest on such capital investments whether funds derive from:
      (1) California Water Fund.
      (2) California Water Resources Development Bond Fund.
   c. Operating, maintenance, replacement and pumping costs allocable to the delivery of water to South Bay Zone users, including:
      (1) Electrical energy for pumping, including:
         (a) Actual purchases of energy.
         (b) Fair market value for use of energy produced above the Delta in conjunction with storage or conveyance of water for delivery in the South Bay Aqueduct.
      (2) Releases of repulsion water from upstream storage to maintain the hydraulic barrier to saline intrusion in the Delta, if necessary.
      (3) Provision of a substitute water supply for Delta users in compliance with S.B. 1327 (Sec. 12202) and S.B. 1106 (Sec. 12934 (f) (3)), if necessary.

C. *Non-reimbursable Costs*

Costs for construction of facilities for the following purposes are not to be reimbursed by South Bay Zone water users:

1. Protection against flood or subsidence damage where the danger already exists and does not result from construction or operation of the California Water Resources Development System.
2. Diversion of poor quality return flow from irrigation of presently cultivated or new lands in the San Joaquin Valley to prevent degradation of water in the Delta.
3. Recreation and wildlife enhancement and fisheries preservation.

D. *Credit Against Water Service Charges*

Revenues from the generation and sale of electrical energy in conjunction with storage or conveyance of water for delivery in the South Bay Aqueduct should be applied to the reduction of the water service charge at the Delta, to the extent that such revenues are in excess of costs properly allocable to the generation and sale of electrical energy. Power revenues should include:

1. Receipts from the sale or exchange of energy.
2. The fair market value of System-produced energy used for pumping and charged as a reimbursable cost to be repaid by contractual water users.

II. *Types of Contracts*

The Boards of Supervisors of Alameda, Contra Costa and Santa Clara Counties, acting for all interests within the area to be served from the South Bay Aqueduct, could contract for water delivery from the Aqueduct by executing contracts in three classifications:

A. A primary, trustee-type contract with the State for delivery of water from the South Bay Aqueduct and for repayment of capital costs for aqueduct construction plus water service costs to and through the aqueduct.

1. The primary contract should provide for delivery of water from the South Bay Aqueduct by the State under the following conditions:
   a. Agreement by the State to be prepared to deliver water in quantities and at times specified in a contract schedule.
   b. Agreement by the State to:
      (1) Maintain in the Delta a supply of good quality water in sufficient quantity to meet entitlements in the Delta as well as contract schedules for export.
      (2) Deliver water of a specified quality in terms of parts per million of chlorides at the South Bay Aqueduct intake.
2. The primary contract should make available to the Boards of Supervisors all reports, plans, estimates and accounts relative to the delivery of water in the South Bay Aqueduct and the allocation of costs therefor and, further, reports to the Boards on the availability of water supplies to meet the State's contractual and statutory obligations by reason of:

a. Provision of sufficient upstream storage and conveyance facilities.
b. Integrated construction, management and operation of all related upstream storage and conveyance facilities constructed by Federal, State or other agencies.

3. The Primary contract should contain provisions that waters provided under the primary contract may be exchanged or assigned for the benefit of any water using agencies within the South Bay Zone, with a corresponding exchange or assignment or repayment responsibilities.

B. An ancillary contract between the Boards of Supervisors for distributing responsibility for repayment and allocating quantities of water between the three counties.

1. The ancillary contract should provide that funds to pay total annual costs under the primary contract may be derived from the following sources, in proportions to be negotiated or set by the Boards of Supervisors:
   a. Fixed, equal, minimum, annual payments of at least $25,000 by each County.
   b. Water tolls on deliveries from the Aqueduct, at a rate to be set by agreement between the Boards of Supervisors.
   c. Payment of any balance due the State annually, after application of the fixed, equal, annual payments and of water tolls, by the counties according to the assessed valuation of areas within each county benefitting from the delivery of water from the South Bay Aqueduct.
2. The ancillary contract should provide that water deliveries may be allocated within the South Bay Zone in accordance with the following principles:
   a. Deliveries of specified quantities of water at specified times should be shown in a contract schedule.
   b. Scheduled allocations in excess of one agency's needs or capacity to store during any season should be made available, pro rata, to the other agencies.
   c. There should be permissive authority for inter-agency underground or surface storage and withdrawal on mutually acceptable terms.

C. Contracts with water using agencies within each county assigning to them water received under the primary contract and setting forth obligations to repay costs.

1. Contracts with water using agencies should include provisions to:
   a. Guarantee to such water using agencies that they will receive scheduled quantities of water and set forth their obligations to repay costs in accord with provisions of the primary and ancillary contracts.
   b. Leave to the local agencies the determination of end-use pricing and its relationship to assessments or taxes in the agencies' payments complexes.

III. *Recomputation, Review and Adjustment of Reimbursable Costs*

A. A 50-year period should be used as the basis for computing and recomputing annual principal and interest payments and components of the water service charge.

B. Fixed annual charges for retirement of capital costs for construction in the South Bay Zone and, proportionately, the California Aqueduct between Pumping Plant No. 1 and the South Bay Aqueduct intake should terminate at the end of the payout period.

C. Costs of construction of additional aqueduct capacity between Pumping Plant No. 1 and the South Bay Aqueduct intake should be reimbursed in proportion to allocation for use by each downstream beneficiary on the California Aqueduct.

D. Actual reimbursable costs should be reviewed by the State at least every five years and annual charges adjusted to reflect:
   1. Increases in accumulated, unretired capital costs as new upstream storage and conveyance works are brought into the System, or decreases as bonds are retired.
   2. Increases or decreases in costs of operation, maintenance, replacement and pumping.

E. Five years' notice of impending increases in the water service charge at the Delta should be given by the State to contractual water users.

APPENDIX VI

In seeking to determine some general measure of prospective water users' ability to pay for water delivered from a state system, the committee was mindful of the fact that many water-user agencies would mingle the state-supplied water with their present supplies of other sources. A number of witnesses were asked to supply information on present sources and costs of water they are presently using. A typical letter addressed to witnesses and the replies received follow.

October 15, 1959

MR. J. H. TURNER, *General Manager*
San Francisco Water Department
San Francisco, California

DEAR MR. TURNER: I want to express my appreciation for the testimony presented by you to the committee last week. It was helpful and informative.

As you may remember, I had some additional questions on which I requested that answers be submitted.

Could you furnish the committee the following supplemental information for the district or districts you represent or the area of which you have knowledge? Please break the information down by subareas if prices and/or supplies vary within the general area.

1. What is the total water supply in acre-feet presently available?
   (a) From ground water sources.
   (b) From other sources (please specify).
2. What is the average cost of this water, by area or subarea?
3. What is the amount of water your area would seek to obtain from a state system?
4. What do you estimate the cost of this state water will be?
5. What do you estimate the overall cost per acre-foot will be of mingled water from state and other sources, considering the prices and proportions listed above?

Thank you again for your co-operation.

Sincerely yours,

STEPHEN P. TEALE, Chairman

CITY AND COUNTY OF SAN FRANCISCO
PUBLIC UTILITIES COMMISSION
October 29, 1959

Subject: California State Water Plan
HON. STEPHEN P. TEALE, *Chairman*
Senate Fact-finding Committee on Water
Room 4062, State Capitol
Sacramento 24, California

DEAR SENATOR TEALE: The following answers to questions contained in your letter of October 15, 1959, are submitted as supplemental information to that contained in the testimony presented to your committee on October 9, 1959, and pertains to the San Francisco water supply system as operated by the San Francisco Public Utilities Commission:

Question No. 1: What is the total water supply in acre-feet presently available?

Answer: Present plans contemplate the development of 400 million gallons daily (448,000 acre-feet per year) from the Tuolumne River sources by present and future construction of the Hetch Hetchy system. Ultimately, however, this system may be developed to an amount in exeess of 500 million gallons daily (560,000 acre-feet per year). Facilities such as dams, tunnels, pipelines, etc. are currently constructed of a size sufficient to bring to San Franeiseo's service area from Hetch Hetchy sources 164 million gallons daily (184,000 acre-feet per year).

In addition to the water available from Hetch Hetchy sources the Bay area water production facilities of San Francisco are considered to have an average yield of about 50 million gallons daily (56,000 acre-feet per year).

The quantity of water available from ground water sourees used by San Francisco is negligible in relationship to the amount of water available from other sources.

Question No. 2: What is the average cost of this water, by area or subarea?

Answer: The water and power systems of San Franciseo operate on what may be termed an "annual cash" basis. In other words, charges for all water and power sold to consumers is fixed under rate schedules designed to provide an annual income sufficient to cover the total annual costs of the department. These costs include all of the costs for operation and maintenance, bond interest and redemption and the eost of necessary annual additions and betterments, and reconstruction and replacements. Therefore, the selling price of water may be considered the cost of water. It should also be mentioned that in fixing this cost substantial annual funds from the sales of real and personal property, and all rentals are credited to the accounts.

The water rate schedule of the department follows common practice in the use of a sliding seale predicated on the volume of usage, which accounts for variations in the rates between the many classes of service and contain a small differenee in the rates for inside and outside of San Francisco.

Charges for water, and hence the cost of water, for various services are made at the rates specified in the attached schedule.

Question No. 3: What is the amount of water your area would seek to obtain from a state system?

Answer: San Francisco does not now plan to eontract for any service from the state water facilities.

Question No. 4: What do you estimate the cost of this state water will be?

Answer: There are too many variables and unknowns involved in the preparation of such an estimate on our part at this time—hence no useful answer can be given.

Question No. 5: What do you estimate the over-all cost per acre-foot will be of mingled water from state and other sources, considering the prices and proportions listed above?

Answer: Same as answer No. 4.

Very truly yours,

J. H. TURNER
General Manager and Chief Engineer

H. E. LLOYD
Manager and Chief Engineer
Hetch Hetchy Water Supply Power and
Utilities Engineering Bureau

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
LOS ANGELES 13, CALIFORNIA
February 16, 1960

SENATOR STEPHEN P. TEALE
Chairman, Senate Fact-finding
Committee on Water
Sacramento, California

DEAR SENATOR TEALE: This is in response to your letter in which you ask five questions concerning the quantity and cost of the present and future water supplies of the Metropolitan Water District of Southern California.

Question No. 1: What is the total water supply in acre-feet presently available?

Answer: For the Southern California Coastal Plain area of Los Angeles, Orange, Riverside, San Bernardino and San Diego Counties, the potential safe annual yield is:

Source	*Acre-feet*
Local sources	850,000
Los Angeles Owens River Aqueduct	320,000
M.W.D. Colorado River Aqueduct	1,210,000
Total	2,380,000

Question No. 2: What is the average cost of this water, by area or subarea?

Answer: (For Colorado River Aqueduct water delivered by the Metropolitan Water District of Southern California) Cost, including taxes, with the aqueduct in 1959 operating at one-half its capacity, approximately $35 per acre-foot.

Cost, including taxes, with the aqueduct operating at full capacity (1,210,000 acre-feet per annum), approximately $25 per acre-foot.

Question No. 3: What is the amount of water your area would seek to obtain from a state system?

Answer: The Metropolitan Water District has not filed with the State a request for any specific quantity of water; it awaits notification by the State as to the quantity of northern water available for delivery to service areas of the district.

Question No. 4: What do you estimate the cost of this state water will be?

Answer: The district does not have available from the State the firm capital and operation and maintenance costs upon which to base such an estimate.

Question No. 5: What do you estimate the over-all cost per acre-foot will be of mingled water, from state and other sources, considering the prices and proportions listed above?

Answer: This question cannot be answered for the reasons indicated above.

Sincerely,

JOSEPH JENSEN, *Chairman*

MARIN MUNICIPAL WATER DISTRICT
SAN RAFAEL, CALIFORNIA, January 4, 1960

SENATOR STEPHEN P. TEALE, *Chairman*
Senate Fact Finding Committee on Water
California Legislature, State Capitol
Sacramento 14, California

Re: Information for Senate Fact Finding Committee on Water—File 529.14

DEAR SENATOR TEALE: Following are the answers to questions in your letter of October 15, 1959:

1. *Water Supply*

All major supply in Marin County is from rainfall and the resulting runoff stored in reservoirs.

Agency	*Reservoir Supply*	*Net Safe Yield*
Marin Municipal Water District	30,000 AcFt	15,200 AcFt
North Marin County Water District	4,430 AcFt	1,910 AcFt

2. *Average Cost of Water*

Marin Municipal Water District ——— $25/AcFt Average Cost

3. *Amount of Water Required*

Agency	*Estimated supplemental supply Required from new sources*			
	1970 *AcFt**	'80 *AcFt**	'90 *AcFt**	2000 *AcFt**
M.M.W.D.	14,600	22,700	28,800	33,600
N.M.C.W.D.	4,900	9,400	14,900	22,100

*These requirements will be reduced by 15,000 Acre Feet upon completion of the Nicasio Dam Project currently planned by the Marin Municipal Water District for 1960-61 construction.

4. We have estimated the cost of untreated water from the North Bay Aqueduct to be about $35 per acre foot at the Terminal Reservoir in Novato. This estimate is based upon data presented by the Division of Water Resources, and there will be an additional cost of $10-15 per acre foot to deliver this supply to the Marin Municipal Water District.

5. The overall cost per acre foot of mingled water will probably be around $40-50 per acre foot although this is a pretty rough estimate since there are many details and cost factors that are not known at the present time.

There is one particular point which I would like to mention relative to the information presented as well as statements that I have made relative to the water supply situation in Marin County. I assume that the boundaries of the district were known, but from conversation I have had I suspect that there might be some question. There are two major municipal districts in Marin County, these being the Marin Municipal Water District and the North Marin County Water District. The areas within the two districts comprise about 40 percent of the county and presently serve about 90 percent of the existing population.

Attached to this letter is a sketch showing the two districts and their locations in the county.

I wish to point out that the information presented in this letter generally depicts the water requirements for these two districts but does not touch upon requirements for the remaining areas of Marin County. It should be noted that there undoubtedly is an additional need for water for the rest of the county lying outside the jurisdiction of the two districts both for rural and urban usage.

I trust the above data will be of some assistance and if I can be of further help, please do not hesitate to call on me.

Very truly yours,

MARIN MUNICIPAL WATER DISTRICT
By BILL SEEGER
General Manager and
Chief Engineer

COUNTY OF ALAMEDA
PUBLIC WORKS DEPARTMENT
December 29, 1959

SENATOR STEPHEN P. TEALE, *Chairman*
Senate Fact Finding Committee on Water
Sacramento 14, California

DEAR SENATOR TEALE: Please refer to your letter of October 15, requesting certain specific information regarding water uses and costs in Alameda County. It is regretted that such a long time has lapsed since receipt of your letter; but the data that you requested was very specific and it was necessary to contact each water service agency in the county. Following receipt of the local agency data, it was necessary to compile it on a countywide basis.

The specific answers to your questions are enclosed. If I can be of any further assistance to you in this matter, please contact me at your convenience.

Very truly yours,

HERBERT G. CROWLE
Director of Public Works

December 1959

1 What is the total water supply in acre-feet presently available?

a From ground water sources

The present total annual pumpage from ground water in Alameda County is estimated to be 73,000 acre-feet. The safe yield of the ground water basins is estimated to be 44,000 acre-feet.

b From other sources (please specify)

(1) The East Bay Municipal Utility District supplied in Alameda County, from local and imported sources, 92,000 acre-feet in 1958. The estimated ultimate consumption of water in the E.B.M.U.D. service area in Alameda County is estimated to be 242,000 acre-feet annually. This water is available under existing water rights of the E.B.M.U.D. in the Mokelumne River and the local watersheds.

(2) The City and County of San Francisco serves supplemental water from the Hetch-Hetchy Aqueduct to two agencies in Alameda County. The City of Hayward purchased approximately 5,400 acre-feet in 1958, and the Alameda County Water District purchased approximately 1,000 acre-feet during 1958.

2 What is the average cost of this water by area and sub-area?

The cost of water varies throughout the county. Table I shows the cost of water at the source and to the consumers for the various areas in the county. The cost of ground water at the source is at the well, and the cost of imported water is at the aqueduct. Neither of these costs reflect the distribution costs, which must be added.

The cost of water to the customer is based upon the rate schedule of each individual agency. Service charges and tax rates are also shown. It is difficult to determine the exact cost per acre-foot because the schedules are based upon sliding rates dependent upon quantity of water purchased. In order to determine the cost of water to the individual homeowner, Table II was prepared to represent the cost for an average situation.

The farmers in Alameda County obtain irrigation water from wells located on their property. It is estimated that it costs the farmers approximately $8.00 to $10.00 per acre-foot to obtain water in this manner. Approximately 55 percent of the water pumped from ground water is used by agriculture.

3 What is the amount of water your area would seek to obtain from a State System?

The amounts of water required from State water facilities for Alameda County, in accordance with the most recent estimates, are as follows:

Year	*Acre-feet*
1960	16,000
1980	71,000
2000	130,000
Ultimate	511,000

4 What do you estimate the cost of this State water will be?

Approximately $20.00 per acre-foot for untreated water at the aqueduct.

5 What do you estimate the over-all cost per acre-foot will be of mingled water from State and other sources, considering the prices and proportions listed above?

The average cost of water presently being obtained from the ground water basin is estimated to be $14.00 per acre-foot. The average cost of the imported water presently being used in southern Alameda County is $76.00 per acre-foot. In 1980, it is estimated that 71,000 acre-feet annually will be required from the State system. The composite costs of this State water, mingled with the ground water and other sources in the same portions of Alameda County, will be approximately $22.00 per acre-foot at the source. The cost of treating and distributing the water would probably remain about the same as now. Therefore, the costs of the mingled water to the customers in the various water service agencies would probably not change materially from the existing costs. It should be recognized, however, that increasing construction and maintenance costs may have a tendency to raise the water prices to the consumers in the future.

DEPARTMENT OF WATER AND POWER
THE CITY OF LOS ANGELES
LOS ANGELES 54, CALIFORNIA, November 16, 1959

SENATOR STEPHEN P. TEALE, *Chairman*
Senate Fact Finding Committee on Water
California Legislature, State Capitol
Sacramento 14, California

DEAR SENATOR TEALE: In your letter of October 15 information is requested concerning the current cost of water and estimated future needs for water in our community. I respectfully offer the following information in answer to your five questions.

Los Angeles has available two sources of water owned and controlled exclusively for its use. From its local sources, which are principally underground waters, approximately 100,000 acre-feet annually is developed. The City's Owens River Aqueduct delivers 320,000 acre feet annually. Both of the above sources are used to the full capacity of the facilities and, in addition, increasing quantities of Colorado River water are being used. Under The Metropolitan Water District Act the City of Los Angeles has currently a preferential right to approximately 400,000 acre-feet annually of Colorado River water through the aqueduct system of The Metropolitan Water District of Southern California. This right to water fluctuates depending upon the total of all taxes and assessments paid in by the various members of the District.

COUNTY OF ALAMEDA
PUBLIC WORKS DEPARTMENT
December 1959

TABLE I—ESTIMATED COST OF WATER IN ALAMEDA COUNTY

Area	*Source*	*Cost at source (dollars per acre-foot)*			*Cost to customer (Dollars)*			
		Min.	*Max.*	*Avg.*	*Min. (Per acre-foot)*	*Max. (Per acre-foot)*	*Service Charge (Per Month)*	*Tax Rate (Per $100.00 valuation)*
Northern Alameda County	Local surface and imported	----	----	----	39.00	87.00	1.00	0.20
Southern Alameda County	Ground water	8.00	30.00	----	61.00	153.00	0.50-0.80	0-0.125
	Imported	74.00	130.00	76.00	92.00	153.00	0.50-0.80	0-0.125
Eastern Alameda County	Ground water	8.00	30.00	----	52.00	174.00	0-2.00	0.07-0.46

COUNTY OF ALAMEDA
PUBLIC WORKS DEPARTMENT
December 1959

TABLE II—ESTIMATED ANNUAL COST OF WATER TO AN AVERAGE HOMEOWNER IN ALAMEDA COUNTY

Area	*Water charge*		*Tax charge*		*Total cost*	
	Min.	*Max.*	*Min.*	*Max.*	*Min.*	*Max.*
Northern Alameda County	$52.60	$52.60	$6.00	$6.00	$58.60	$58.60
Southern Alameda County	53.42	69.90	0	3.75	57.17	73.65
Eastern Alameda County	58.00	59.99	2.10	13.80	60.10	72.79

NOTE: Costs based on water demand of 20,000 cu. ft. and an assessed valuation of $3,000 for house and lot.

The average cost to the Department of Water and Power of the water from the above three sources is less than $25 an acre-foot.

As to future water needs by the City of Los Angeles, it is estimated currently that ultimately more than 100,000 acre-feet annually will be required above and beyond the three sources now available for its use.

Respecting the questions on cost of State Water and resultant overall cost of mingled water from the State and our own sources, we are mindful of the cost data developed by the State Department of Water Resources in its recent Bulletin No. 78. This information seems to be the best that is available in answer to the last two questions of your letter.

I hope that the above information is helpful in your committee activities which are on a subject of great importance to the Southern California area.

Respectfully,

WM. S. PETERSON
General Manager and Chief Engineer

SAN DIEGO COUNTY WATER AUTHORITY
SAN DIEGO 3, CALIFORNIA, November 12, 1959

SENATOR STEPHEN A. TEALE, *Chairman*
Senate Fact Finding Committee on Water
Sacramento, California

DEAR SENATOR TEALE: Mr. Jennings has handed me your letter dated October 15, 1959 addressed to him and has requested me, so far as possible, to furnish you with the information asked for in the letter.

In the following paragraphs, I have attempted to answer the questions from the authority's viewpoint. It is impossible for me to answer the questions as they might relate specifically to the 18 member agencies of the authority.

(1) The water supply available to agencies of the County Water Authority comes from two major sources:

(a) *Local sources.* Includes streamflow conserved in 10 major reservoirs owned and operated by member agencies, and water from underground supplies. These supplies have been assumed to yield about 94,000 acre-feet per year but this amount is being revised downward as a result of the low stream flows during the present drought period.

(b) *Colorado River.* Available to the authority area through its membership in Metropolitan Water District of Southern California. The preferential right portion of the act under which Metropolitan Water District is organized gives the authority at present, a minimum supply of 7.43 percent or about 90,000 acre-feet per year of the district's water rights to 1,212,000 acre-feet per year in the Colorado River. This minimum amount would be maintained only if all other member agencies of Metropolitan Water District demanded and could use within their respective areas, their corresponding rights. Whenever an agency does not use all of the water to which it has a right, such surplus water is available for other member agencies who can use it. This condition now exists in Metropolitan Water District and the County Water Authority is now receiving water at the rate of about 140,000 acre-feet per year.

(2) The County Water Authority has no figures as to the cost of local supplies since water from these sources is produced and distributed by the member agencies and County Water Authority has nothing to do with these supplies.

Payments for Colorado River water delivered to the authority's member agencies is made in two ways:

(a) The County Water Authority pays Metropolitan $15 per acre-foot for the water delivered to the authority and the authority in turn charges $17 per acre-foot for water when delivered to its member agencies. The $2 override is used to meet the County Water Authority's operation and maintenance expenses. A rebate of $3 per acre-foot is allowed by Metropolitan to the authority for Colorado River water used for agriculture within its area, which amount is passed on by the authority to the several agencies who have certified to the quantity of water used for agriculture within their respective areas. The per acre charge from Metropolitan has varied over the years from $8 to $15.

(b) In addition to the payments made per acre-foot for water when delivered as described in (a) above, the County Water Authority and Metropolitan levy each year taxes on all taxable property within their respective areas. The taxes are levied primarily to meet capital expenditures. The tax levies include (1) a regular tax on all taxable property within the area of each, which, in 1958-59 was 18 cents per $100 assessed valuation for Metropolitan, and was 10 cents per $100 for the County Water Authority; and (2) a special tax levy of varying rate on the taxable property within those agencies having outstanding annexation charges to be paid over a period of years.

The total amount of taxes paid by taxpayers of the authority to the County Water Authority and to Metropolitan since the authority's organization in 1944, and related sums, is as follows:

Taxes paid County Water Authority	$8,367,713
Taxes paid Metropolitan	24,886,873
Total	$33,254,586

The County Water Authority has received from Metropolitan and has delivered to its member agencies a total of 1,022,050 acre-feet of Colorado River water since delivery was first made on November 27, 1957 to June 30, 1959. The average cost of Colorado River water to the taxpayers of the authority for the total quantity of water delivered was, therefore, $32.50 per acre-foot.

The cost of water to the users and to taxpayers as outlined above covers only the delivery of water to the distributing agencies when delivered at a point on the authority system. There are additional costs for transmission and distribution by each agency before the water is delivered to the consumer, so water costs to consumers are somewhat higher.

(3) Bulletin 61 of State Department of Water Resources gives the requirement for the area to be served with water from the San Diego Aqueduct in the year 2000, as 839,100 acre-feet per year. The estimated requirement of northern water in 2000 on this estimate would be:

Estimated total requirement		839,000 acre-feet
Available supply from present sources		
a. Local supplies	110,000	
b. Colorado River	100,000	210,000
Supplemental water required from the north		629,000 acre-feet

A report to the County Water Authority directors, prepared by me in 1955, estimates that the ultimate need (year 2000) for imported water would be 681,500, which, if Colorado River water were deducted, would leave 581,500 as the quantity of water required from northern sources. It would appear from these studies that the authority area should seek an ultimate supply of about 600,000 acre-feet from the state system.

(4) The County Water Authority has made no estimate of the cost of state water when delivered to its area. Bulletin 78 gives a value of $43 as the average cost per acre-foot delivered to Southern California. In the early years, with low flows, the cost would probably be much higher. The cost delivered to the authority system would probably be somewhat higher, depending on the method of delivery from terminal reservoir at Perris, whether direct to the authority or through Metropolitan.

(5) Because of the uncertainty stated in (4) above, no answer can be given to this question.

I trust that the above information will be helpful to your committee in its consideration of the water problems of California. If there is other information desired, I will be glad to try to get it for the committee.

Very truly yours,

RICHARD S. HOLMGREN
General Manager and Chief Engineer

APPENDIX VII

The committee sought expert testimony on economic problems involved in measuring value enhancement resulting from furnishing water to land. Two statements prepared by Dr. Michael Brewer, Assistant Professor of Agricultural Economics at the University of California follow.

STATEMENT OF MICHAEL BREWER BEFORE THE SENATE FACTFINDING COMMITTEE ON WATER LOS ANGELES, CALIFORNIA NOVEMBER 19, 1959

My name is Michael Brewer. I am an assistant professor in the Department of Agricultural Economics and on the staff of the Giannini Foundation, University of California, Berkeley, California. This presentation is made at the invitation of this committee's chairman. I appear as an individual agricultural economist interested in water resources development. The University of California is in no way responsible for the statement I shall present.

Statement Summary

The questions at issue are:

(1) To what extent does an unearned increment emerge from the California Water Plan?
(2) How may its size and distribution be analyzed?
(3) What are the policy implications of unearned increment?

Unearned increment refers to the private benefits in excess of costs resulting from a public investment. The effect of the proposed California Water Plan on private benefits in agriculture result from its relationship to the cost of irrigation water and changes in cropping pattern on the one hand, and the value of land on the other.

The size of net benefits accruing to agriculture may be indicated by use of budgeting methods and the analysis of land sales data. Changes in water costs and altered cropping patterns will be reflected in net farm returns and may be approximated by techniques of farm budget analysis. Changes in the value of land associated with an altered expectation of its future use tend to be reflected in the land market. Examination of differential market prices of land with various degrees of water supply available may provide an index for expressing the change in value associated with the California Water Plan in quantitative terms.

The incidence of such private benefits accruing to agriculture within a particular area may be ascertained by an analysis of the size of land holdings in that area and associated examination of prevalent land tenure practices.

Policy implications of private benefits center on the degree of conformity of their size and distribution with relevant equity criteria. These criteria cannot be ascertained at the present time, as state policy has not been expressed with sufficient precision. Should income redistribution measures become necessary, a number of alternative methods are available, of which acreage limitation is one. These likewise cannot be evaluated in the absence of clearly defined state policy.

"Unjust Enrichment"—Its Meaning and Analysis

I. Introduction. Discussions of the current water development and distribution proposals of the state, which will be called the California Water Plan, have involved a number of ambiguous terms. "Subsidy" has been pointed to as a primary objective and as a consequence to be avoided. "Enrichment" has been alleged with reference to as yet undefined criteria of justice. Definition of revenues and costs have been confused, yet they are cited as socially important lest they be "unearned" by those upon whom they are incident.

The purpose of this statement is to develop a set of consistent terminology and underlying concepts by which it will be possible to examine systematically the economic relationship between the California Water Plan and private economic benefits in agriculture. Private benefits accrue to particular individuals or firms. Their size and distribution may make desirable some form of income redistribution among individuals, local organizations, and the state.

To analyze this problem, it is necessary to:

(1) Identify the types of private benefits that might occur.
(2) Analyze their relationship to the California Water Plan.
(3) Suggest methods to measure their size and incidence.
(4) Suggest possible criteria for policy.
(5) Determine whether income redistribution methods are necessary under these criteria.

I shall discuss the first three points and make a few concluding comments regarding the types of criteria that might be relevant and possible methods for redistributing income. I do not intend to enunciate policy objectives or to recommend specific administrative procedures.

II. The Setting of the Private Benefit Problem. I shall call the set of economic issues sometimes considered "unjust enrichment" or "unearned increment" the private benefit problem. For purposes of planning, the determination of the physical features of a project system, its financing, and administration constitute a closely interrelated problem within which benefits play an important role. These relations can be appraised only after specification of the objectives of the California Water Plan.

A primary economic objective has been stated as "securing the maximum benefit to all areas and peoples of the State."[1] This statement is at best a questionable economic criterion for public investment. If we maximize benefits to one area or one person, can we simultaneously do so for another? If we are to find an operational economic criterion, we must look to a more relevant construct. The real income of the State is suggested as such a relevant concept.

All public projects compete for the capital and credit resources of the State. The project selected for implementation should result in a larger increase in the real income of California than other alternatives. Real income of the State is similar in meaning to the gross national product. It represents the market value of the output of California over a given accounting period. In terms of this criterion it is of little consequence to a particular investment alternative, if all it accomplishes is the transfer of income among individuals or groups internal to the accounting area. On the other hand, contribution to the real income of the State is a relevant consideration in ranking investment alternatives. Actual ranking, of course, will depend also on social and political norms.

State real income and project income, or its revenues in an accounting sense, are separate entities. An increase in state real income anticipated as a result of a project is relevant to questions of project selection, or economic justification. On the other hand, project revenues, or payments to the project authority, are important to the issue of its financial feasibility. These revenues may take the form of receipts from sales of project services, assessment receipts, fund transfers, and so forth. For the present discussion, real income is the relevant concept, as this establishes the relative efficiency of particular project alternatives.

Accompanying issues of efficiency are those of equity, which relate to the distribution of project benefits and costs among regions and individuals. The analysis of private benefits arising from the California Water Plan involves a major equity question: Is some form of income redistribution needed to make the size and incidence of private net benefits acceptable under prevailing equity norms?

State resource development and management are undertaken for public purposes and thus are subject to and conditioned by prevailing social and political values. These determine the extent to which sectional benefit and the degree of partisan control of resources through a concentration of power is tolerated. Although these have manifestations other than economic, income redistributive measures have been widely adopted to impose limits dictated by these values.

Conditional requirements of income redistribution may alter the size of the increment to the State's real income derived from any project. The realized magnitude of this increment depends not merely upon the engineering and financial aspects of a project, but also upon the entire socio-economic setting within which it is undertaken.

Such income redistributive measures, of which taxation is one, may be invoked to such an extent that an entire type of benefit might be destroyed because the inducement to undertake certain lines of economic activity is removed. The "social cost" of income redistribution programs must be recognized. It is one of the fundamental reasons why the project planning organization be designated to determine the administration of a project as well as its physical dimensions. Both are related to total benefits. As a result, they cannot be calculated in the absence of a specified administrative program.

The water to be made available by the proposed California Water Plan will increase the supply of an important productive resource. It also will make possible the recombination of existing resources in a more productive manner, as individuals and firms adjust to their altered economic environment. An important incentive for this adjustment process is the expectation of realizing larger net returns. These changes in productive processes cannot be instantaneously accomplished, but require time. This dynamic aspect of the impact of resources development on the growth of a regional economy is a major difficulty in identifying and valuing particular benefits.

III. Private Benefits and the California Water Plan. There are two basic ways in which the California Water Plan may affect the private benefits realized by individuals within the agricultural sector of the state economy: through the returns from production, and land values.

The plan will make available water to individuals in various regions of California. This will be facilitated by providing water to local distributive agencies under contractual arrangements that stipulate cost and tenure conditions. They in turn will distribute this water to individuals within their jurisdiction by their own facilities. The basic accounting unit in assessing private agricultural benefits is the individual farm operator or the farm firm, including landowning units that are not presently engaged in agricultural production. The relevance of this extended definition will become evident below.

Private benefits in excess of private costs incident upon the basic unit as a consequence of the California Water Plan constitute the primary equity issue. These benefits may be considered one component of change in the overall net worth[2] of the basic unit. There are two ways in which it may change between different points of evaluation that are of present significance: first, by the receipt of returns; and second, by changes in the value of an individual's capital assets. Within this framework, we may trace out certain relationships between the California Water Plan and private benefits.

[1] California Department of Water Resources, *The California Water Plan* (Sacramento: State Print. Off., May, 1957), p. XXV. (California Department of Water Resources Bulletin No. 3.)

[2] The net worth of an individual records his economic value as of the instant of calculation. More precisely, it is the sum of the values of the things to which he has title less the sum of the values of claims which others have against him.

Returns From Production

The basic production system in agriculture may be visualized as one into which inputs are introduced and from which a product is forthcoming. There are basically three ways in which the economic dimension of the system (its costs and revenues characteristics) might be altered. First, the cost of inputs may change; second, the price paid for the product forthcoming may alter; and third, the processes may be altered in a technical sense—that is, a fundamental change in the basic physical input-output relationship.

So long as water is a productive factor, its cost of acquisition and application must be deducted, along with the relevant cost of other factors, in the calculation of net farm returns. For farms currently engaged in irrigated cultivation, net returns will be increased if these costs are reduced by the California Water Plan. Thus, if the contracting policy of the State makes available water to local agencies who, in turn, can and do subsequently distribute it to individual irrigators at a cost less than that which they presently pay, net returns will be enhanced accordingly. Considering the production process over a period of years, the flow of net returns would also be correspondingly higher. However, the California Water Plan also anticipates a material increase in irrigated acreage. To the extent that the net returns per dollar of investment from irrigation exceed those from dry farming, a conversion in types of cultivation also enhances the net return stream to the new irrigators, who thus would incur a private benefit.

This merely means that the excess of the value of water for use in agricultural production over its price constitutes a benefit to the farmer—or his consumer's surplus, to use the appropriate economic term. The size of the surplus depends on the value of water and the costs associated with its use—the latter of which will be dictated largely by the pricing policy eventually adopted by the State.

The Value of Capital Assets: A capital asset—be it land, a machine, or in other forms—has a value by virtue of the stream of income that it is expected to generate over its relevant life and its disposal value. This is the value of the asset at the point in time at which the current owner disposes of it. The disposal of land differs from that of a machine. Disposal of the latter usually occurs when the cost of its maintenance and operation exceeds the value of its productive contribution, whereas the disposal of land usually occurs with a change in its form of use. This need not imply a decline in its subsequent value; in fact, we are primarily concerned with its enhancement.

The future nature of the revenue stream and disposal value account for much of the difficulty in imputing a present value to land. Future annual revenues are uncertain. They depend upon the costs of other inputs, the price received for outputs, and unforeseen influences on the physical production relationship—which must be estimated, as must the disposal value. The expected disposal worth is related to anticipated demand for the capital asset—whether it be for agricultural use, for domestic subdivision, or for highway, reservoir, and other purposes.

What, then, is the probable influence of the California Water Plan on the value of the capital asset, land? Insofar as the stream of agricultural revenues are concerned, we find that the net return from agricultural production, discussed above, is the basic influence. That is, if the plan will enable either already irrigated land or currently dry farmed land to yield a higher net return, the value of the asset is enhanced as a result of the potentially enlarged income stream expected therefrom.

The influence of the California Water Plan on the disposal value of land, however, is somewhat different. If the anticipated future use is changed thereby, its present value likewise will tend to change. In this connection, the value of agricultural land in many parts of California have changed rather markedly as a result of urban expansion, mineral discoveries, and even in the anticipation of condemnation for public use.

The delivery of supplemental supplies of surface water into an area undoubtedly will affect its future economic development. Surface water is a transportable resource only by undergoing the relatively high capital cost of constructing a distribution system. This fact and the customarily long contracts for water delivery tend to render it regionally fixed. Under such circumstances, surface deliveries to a region will reduce the uncertainty surrounding the adequacy of future water for domestic and industrial use, even though its present use is agricultural. A reduction of uncertainty of future water supply makes the recipient region relatively advantageous for future uses requiring water. Today in several foreign countries this relative advantage is being relied upon to induce future development of water-using activities in certain regions. Their future economic development is in this way "planned" by state water distribution. Anticipated changes in future use are reflected in the land market.

Thus, the private benefits about which we are concerned result from the production cost-revenue structure of irrigation cultivation on the one hand, and changes in the value of the capital asset, land, on the other. Some measurement of these changes is prerequisite to analyzing the consequences of the California Water Plan with regard to these private benefits. Only by such measurements can we proceed objectively to discuss these benefits in relation to equity criteria.

IV. Measuring Changes in Net Worth. Farm budgeting methods can give reasonably accurate measures of changes in net farm returns from presently irrigated areas expected to be associated with deliveries of water from the state plan. Basically, this entails setting forth the productive inputs of the individual farm in physical terms, assigning them costs, summing these, and deducting the sum from the physical quantity of product times the expected prices received. To use this system of calculation for determining an increase in net returns, the cost estimates

for irrigation water need to be adjusted by the appropriate amount and the net farm returns rebudgeted. The essential information is the cost to the farmer of securing a supply of irrigation water after delivery contracts have been executed between the State and local agencies.

The surface water supply of most districts is supplemental to ground water. A district member will select that combination of available sources that results in the least cost. If delivery contracts with the State affect the ratio of costs of water from different sources, the least-cost combination will be different than previously. It clearly is impossible to make any quantitative estimate of the change of net farm returns without an assumption of the retail water cost resulting from these contracts. This means the costs as determined by local distribution agencies incident upon their members.

These frequently are tricky to calculate, as individuals make different types of payments to these local organizations—assessments (fixed costs determined on an unimproved property value base), and water tolls (usually variable with the quantity of water "bought"). For present purposes, the appropriate budget cost entry would be an average of the total payments made to the local organization by a member. The extent to which the local organization alters its schedule of member payments as a result of the additional contracted water is, of course, locally determined. However, it is possible that resale conditions be written into the state water contracts. The difference between the weighted averages of cost to the district of its present supply and potential supply (including water from the California Water Plan) may be an adequate approximation for budgeting purposes.

A further complication arises from the fact that local districts may change the fixed cost and variable cost components of the total payment charged their members. A member will prefer to use water from his district so long as its variable cost is less than that from alternative sources. If a district increases the fixed cost to members as a result of the California Water Plan, the total cost of water may be higher than that of the initial combination of sources. Thus, the consequences of additional water from the state project may be to reduce the net returns per acre irrigated for irrigation districts. On the other hand, some commensurate benefit must be present to induce the local agency to participate. Frequently, this is in the form of an increase in the certainty of future supplies—either in terms of reducing annual variation in quantity or in terms of a longer period of time for which a given quantity of water is committed to their use. Thus, through the district organization, an entire area is able to pursue water management activities generating benefits either so broad in their incidence or so future in their anticipated realization that individuals on their own initiative would not undertake them.

For areas expected to be irrigated, but not so cultivated at present, the measurement of change in net farm returns is more difficult. Basically, the same approach appears valid; however, the net returns from two entirely different forms of production, entailing a different cropping pattern, have to be budgeted. Imputation of the payment schedule of local distribution agencies also is more difficult, as a distribution system presumably would have to be constructed and financed, incurring capital costs in addition to the contract cost of water. Cost data of systems recently constructed in comparable areas, engineering estimates, and similar types of information would be useful in estimating the capital cost portion of the total payment required.

In the above estimates, it is important to distinguish between data on a per-farm and a per-acre basis. Requirements of data comparability suggest per-acre figures as a more desirable form. These may be used in calculating the private benefits per farm of any particular size. In this connection, farm cost and revenue data sometimes evidence economies of scale and may need to be adjusted accordingly. This means that the per-acre (or per-unit of output) cost of large-scale production is less than that of small-scale production, in terms of the inputs involved. A necessary condition for such economies is that there are physically indivisible factors of production. Frequently, excess capacity in farm power units accounts for such economies. Half a tractor cannot be used in farm operations. The amortization of the acquisition and operation, maintenance, and repair cost of large equipment over many acres frequently results in lower per-acre cost for power inputs than the smaller units necessary on smaller farm sizes.[1] Appropriate adjustment in the per-acre cost data would have to be made in analysis of farm units of a designated acreage.

Turning from the current income component of net worth to the value of the capital asset, land, the job of measurement is more difficult. The capitalized future income flow may be measured by relating various rates of discount and budgeted estimates of per-acre revenues. In California, however, irrigated land generally commands a market price that indicates a high disposal value. It is recalled that the present value of the asset reflects the capitalization of both the flow of future income and the disposal value. If the California Water Plan reduces uncertainty surrounding the conversion of agricultural land to other uses having relatively higher present values, the present value of that agricultural land will increase because of the enhancement of the disposal value. Thus, individual expectation is a fundamental determinant in attempting to

[1] It has been estimated that constant returns to scale will become established for an irrigation operating unit substantially less than 320 acres. (See letter from Cochrane, Willard W., included in Hearings Before the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, United States Senate, April 30 and May 1, 1958, p. 239.) In the service area of the Columbia Basin Project, the 70-89 irrigated acres size class contained the largest percentage of operating farms in 1955. It is interesting to note that an acreage limitation of 40 acres on this federal project did not preclude operating units of substantially larger size through rental arrangements. (See Figure 4 in Franklin, E. R., W. U. Fuhriman, and B. D. Parrish, *Economic Problems and Progress of Columbia Basin Project Settlers* (Pullman: January 1959), p. 11. (Washington Agricultural Experiment Station Bul. 597.)

measure the increase in present net worth of land associated with the California Water Plan. Because of this highly subjective element of individual expectation, one cannot proceed to estimate an assumed effect by budgeting procedures with any known degree of accuracy. Rather, a pragmatic approach suggests itself, wherein a comparison of market prices actually paid in various parts of California are studied to detect differences in the purchase price of lands previous to and following their provision with a supply of irrigation water.[1]

Water delivery contracts will influence directly the sales value—both in terms of prices charged and conditions of tenure. Cheap water guaranteed in perpetuity obviously will result in a higher present value of land in a service area than a higher price and a conditional contract that implies a reduced certainty of future supply.

The methods of measurement discussed above may be used as guides to the size of anticipated changes in the net returns from agriculture and the net worth of land on a per-acre basis. The ownership and land tenure relationships prevalent in a designated area must be examined to determine to whom these changes accrue. Conditions of land tenure contracts may result in the owner, the lessee, or both receiving any increase in private net benefits that may result from the California Water Plan.

V. Conclusions. What is the relationship between the preceding discussion of private net benefits and acreage limitation?

The federal government has employed acreage limitation restrictions in connection with its land use policy in areas provided water from federal reclamation projects. This restriction was purposively used as a tool to achieve a primary objective of federal irrigation activity—to create farm homes on which the owning family lives, works, and earns an acceptable living. As initially invoked, it was reasonably effective in providing for a large number of such homes. Later, it came to be used to achieve a broad distribution of private benefits to farmers resulting from federal projects. As reclamation project eligibility requirements had shifted from the small farm ownership per se to a per capita basis, the limitation was not an illogical device for achieving this end.

But in the instance of the California Water Plan, what are the policy objectives which the acreage limitation might achieve? Does the California Water Plan espouse the above-mentioned position of federal policy? Is the financial basis of the plan such that it is necessary to capture a designated portion of private net benefits and apply them toward the construction and interest costs of the plan? Does state policy envisage making this increment available to capture by local agencies for the furthering of more local objectives? There are several possibilities of state policy. It would be possible to evaluate the efficacy of the acreage limitation within the framework of each.

In this connection, it is important to note that there are several methods of securing the above-listed objectives other than acreage limitation. Taxation, both on an income and property base, has been an effective method for obtaining certain goals of income redistribution in the past. Various methods of water pricing at the retail level also may be used effectively to capture some of the private net benefits resulting from the proposed program of state water development and distribution. Indeed, as we have seen, the costs at which supplies of water are available for irrigation is itself a primary determinant of the consumer's surplus anticipated from the program.

By these remarks I do not intend to indicate a particular policy objective as most desirable—indeed, the California Legislature, representing the public interest of the State and not private citizens, landowners, or otherwise, is the appropriate body to lay down such policy terms. It is irrelevant to attempt evaluation of a method of achieving a policy objective without first specifying the objective in sufficient detail so that evaluatory criteria may be formulated. It is only with reference to such criteria that any incremental change in costs, benefits, or net returns may be denoted as just or unjust, desirable or undesirable. In a word, I suggest this problem be attacked at its beginning. Relevant, objective analysis of policy tools can be pursued only in this way. The hazards of emotional appeal, on the one hand, and the a priori rejection of particular tools for policy, on the other, are particularly great in this area.

UNIVERSITY OF CALIFORNIA
COLLEGE AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

January 26, 1960

To: Senator Stephen P. Teale, Chairman
Senate Fact Finding Committee on Water

From: Michael F. Brewer

Subject: Possible Tools for the Prevention of "Unjust Enrichment" Other Than the Acreage Limitation

In a statement made last November before your committee, I suggested that there were potential tools other than acreage limitation which might prove effec-

[1] This approach has been relied upon in estimating an "incremental benefit" averaging $300 per acre resulting from federal reclamation projects in the western states. See testimony of Paul S. Taylor, page 151 of U.S. Congress, Senate, Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, *Acreage Limitation (Reclamation Law) Review* (Washington: Govt. Print. Off., 1958), 271p. (Hearings, 85th Cong., 2d sess., on S. 1425, S. 2541, and S. 3448, April 30 and May 1, 1958.) In 1947, the United States Bureau of Reclamation indicated that the average selling price in dollars per acre of irrigated and unirrigated land in Tulare County, by quarters, from 1941 through the second quarter of 1947, was $373.28 and $61.44, respectively. See Table I, page 861 of U.S. Congress, Senate. Subcommittee of the Committee on Public Lands, *Exemption of Certain Projects from Land-Limitation Provisions of Federal Reclamation Laws* (Washington: Govt. Print. Off., 1947), 1329p. (Hearings, 80th Cong., 1st sess., on S. 912, May 5-9, 12-16, 19-22, 28, and June 2, 1947.) More recent discussion has stressed certain difficulties in interpreting such sales data as a measure of direct project benefits. See Renshaw, E. F., "Cross-Sectional Pricing in the Market for Irrigated Land," in *Toward Responsible Government* (Chicago: Idyia Press, 1957), 164p.; and Milliman, J. W., "Land Values as Measures of Primary Irrigation Benefits," *Journal of Farm Economics*, vol. 41, no. 2, May 1959, pp. 234-243. Restriction of eligibility for contract of water developed from the California Water Plan to land within fixed district boundaries would tend to make sales price comparisons a more direct measure of private net benefits.

tive in connection with the reduction, or prevention, of "unjust enrichment" resulting from the proposed California Water Plan. As you may recall, the statement defined such "enrichment" in the agricultural sector as changes in the net worth of an individual or a basic farm unit. Two components of individual net worth were considered at some length: net farm returns and the value of capital assets (especially land). The proposals considered below may be useful for effecting a purposeful redistribution of income among individuals that may be warranted by the size and incidence of such changes in net worth.

The efficiency of such tools may be evaluated in terms of one, or a set of several, criteria. An objective, or goal, is not synonymous with an evaluatory criterion for assessing particular policy measures. However, an operationally valid objective to public policy is so specified that one can deduct analytically useful criteria for such an evaluation. Such criteria may permit an ordinal ranking of alternative tools on the basis of their degree of satisfaction of that objective. Frequently, objectives are so indefinite that criteria deduced therefrom are not capable of differentiating finely between policy tool alternatives.

Although there has been wide concern throughout the State with respect to "unjust enrichment," no operationally valid objective has yet been enunciated. A general goal indirectly has been stated; namely, that changes in individual net worth may be made by the State. Although this provides a basis for discussing proposals for policy measures, it does not permit their ranking by preference. Nor does it help clarify the clouded issue of "unjust enrichment." For example, any of the following interpretations might constitute operationally valid objectives for state policy and thus provide the basis for more thorough analysis of policy measures:

A. A broad distribution of benefits in terms of some *a priori* standards.
B. Beneficiaries (direct or indirect) pay the project costs (either total or some designated portion thereof).
C. The capture of the increment in individual net worth of beneficiaries in excess of an absolute amount.
D. The capture of a designated portion (percentage) of the increment to individual net worth. (This is comparable to capturing enhancement per acre in excess of an absolute amount.)
E. To forego capture by the State but permit local agencies (irrigation districts) to capture the increment in net worth or consumer's surplus.

These various interpretations depict distinctly different ideal situations. For example, interpretation (C) implies every beneficiary should receive an equal increment to his net worth, whereas (D) implies owner-operators of large holdings should experience a proportionately larger increment than those of smaller holdings. Neither of these guarantees a broad distribution of benefits as does (A). Interpretation (B), on the other hand, indicates a problem so long as payments by beneficiaries are short of a designated sum but denies a problem once this sum is achieved. Incidentally, it says nothing about equity standards to be adhered to in exacting this sum from beneficiaries. Interpretation (E) differs entirely from the other four interpretations in designating local agencies rather than the State as eventual potential recipient. It makes possible, although does not assure, the transfer of income from individual beneficiaries to local districts.

In light of this range of interpretations, it is impossible to discuss in detail and with finality the relative advantages of various tools suggested in my testimony before your Committee last November. Rather than selecting a particular interpretation, I shall consider the extent to which certain possible arrangements enable a capture by the State of increases in individual net worth. Each of the above interpretations, with the exception of (E), entails such a capture. The methods considered may be placed under two general headings —assessment measures and pricing measures.

Assessment Measures

Tax programs require payment by individuals or other legal entities. A number of features make them well suited for achieving a desired program of income redistribution. Their area of incidence, the definition of the tax base, and procedures for valuation may be designated in detail by the appropriately authorized taxing agency.

The most direct type of assessment tool is the imposition of a new tax. With respect to the problem at hand, a special property assessment district could be defined to encompass certain beneficiaries of the California Water Plan. If it is desired to capture increases in the capital value of individuals within such a district, a tax base comprising all unimproved property and a valuation procedure based upon, or proportional to, its market value would be indicated. If, on the other hand, increments in net farm return were to be captured, other methods of property valuation would appear indicated—possibly in accordance with the type of crops grown (if C.W.P. water made possible a more profitable and readily recognizable cropping pattern) or by type of cultivation (if the principal impact of C.W.P. water were a shift from dryland farming to irrigated cultivation). Such special assessment districts may be established by action of the Legislature without express approval of land owners within the proposed boundaries. Such a device would be flexible as year-to-year change could be made by variation of the rate of levy and/or property valuation procedures. Being additional to other existing property taxes, such variation would not disrupt their magnitude or incidence.

A second assessment tool is a redesignation of the property base used for state and county tax purposes. Present flat-rate valuation procedures would be replaced by property values reflecting of enhancement due to local participation in the California Water Plan. This, in effect, would mean that all tax payments would be made in proportion to the extent of property value enhancement resulting from the California Water Plan. Insofar as rates of levy for pur-

poses other than payment to the California Water Fund were imposed—that is, school districts, drainage districts, etc.—these payments likewise would be proportional to the California Water Fund benefits. An obvious difficulty is that the capture of increments of new worth would disrupt the incidence of such other assessments for which the same property base was used.

A third possible assessment device that might be used is a clarification of the extent of deductability for state income tax purposes of assessments imposed by local water districts receiving C.W.P. water on their members. Were such assessments declared not deductible. the State could capture a portion of local district levy made upon land within agencies served by the California Water Plan. Under such an arrangement, the internal pricing procedures of local districts probably would change to employ larger tolls and low levels of assessment relative to other local water districts. Tolls, being a variable factor cost, have not been challenged as a deductible outlay for state income tax purposes. To successfully achieve the income redistribution objective, provisions for a common system of property valuation and a requirement that each district, in fact, employs assessments to the same relative extent would be necessary.

A final potential assessment tool would be a type of sales tax applied to contractee payments made annually to the State. This device could be used to impose additional charges on recipient districts. These could be designated to vary with the quality of water purchased or, in a sense, the degree of participation by particular districts in the California Water Plan. A principal drawback to this proposal is that additional requirements of water resale by districts are needed to assure that the surcharge is passed on via retail water prices or district assessments to individual beneficiaries who are members to the participating district.

Pricing Measures

An immediately apparent tool for capturing increments to individual net worth is a water price that varies with the quality of water purchased by an individual consumer. Indeed this general position has been taken by the Governor in his recent pricing policy statement. If the size of changes in an individual's net worth (regardless of the size of his land holdings) is proportional to the quality of water he receives, then an appropriately designated cost structure conceivably would be an effective confiscatory device for increments to individual net worth. This would be a reversal of the traditional block rates used by public utilities which favor large water users in terms of the unit price charged.

Several major difficulties to this type of proposal are apparent. The effective application of the tool requires its adoption by each water retailing agency. This might be made a condition of contact for districts whose exclusive water source will be C.W.P. deliveries. However, for those districts who retail additional water derived from sources other than the California Water Plan, a substitution between C.W.P. water and that from other sources could be used to avoid the restrictive retail price stipulation. More important than the difficulty of enforcement is the lack of flexibility in pricing which would result at the local district level. This flexibility has been found important for implementing local programs of water management. Usually such local water management results in a more economical water use and should be facilitated in the public interest. Regardless of the nature of any particular water management program, a flexibility in district pricing procedures accounts in large part for the viability of this type of organization. Impairment of this flexibility would reduce a district's ability to adapt to future changes in physical, technological, and economic conditions.

Another price tool that could be used for the capture of increments to net worth is pricing on the basis of the value of the water sold. The concept has been generally advocated for some time, but details of its amplication have not yet been widely discussed. I am presently working on a study of how such a system may be operationally implemented. My feeling at the present time is that this type of price not be applied at the level of the individual consumer but rather at an agency or district level. A community value would thus be used as a guide for wholesale water price rather than a value imputed on individual uses. In this way flexibility would be preserved for the local organization although standards for retail pricing could be established in addition.

The above are only suggestions of possible tools that might be employed in pursuance of an operationally valid objective for the prevention of "unjust enrichment" in connection with the California Water Plan. To my mind they warrant consideration in addition to the acreage limitation as methods capable of achieving a desired income redistribution.

I might reiterate a point in my statement last November; namely, that the determination of actual changes in net worth not only requires study of land value appreciation and increased flows of net farm returns but also a study of land tenure to ascertain its incidence. Such tenure characteristics would also indicate the extent to which charges of restrictions imposed by the State with the objective of confiscating increments to net worth can be shifted and to that extent rendered ineffective. The use of rental contracts enables the average size of operating unit in the Columbia River Project to be in excess of 70 acres, while an acreage limitation of 40 acres is simultaneously imposed by reclamation law. Similar arrangements or others between growers and producers may be used to avoid changes, assessments, or requirements entailed in the measures considered above.

APPENDIX VIII

Reproduced here are two legal opinions concerning access to reservoirs for fishing and recreation.

ATTORNEY GENERAL'S OPINION

Opinion No. 55-3—April 13, 1955

Subject: *Reservoirs*—Subject to the power of the the Department of Public Health to regulate to prevent pollution of domestic water supplies, fishing by public must be permitted in waters impounded by dam, where dam is on stream naturally frequented by fish and Fish and Game Commission has invoked sections 521 et seq. of Fish and Game Code; same rules apply to waters impounded by municipality or private owner; in absence of action by the Fish and Game Commission under Fish and Game Code sections 521 et seq., East Bay Municipal Utility District not required to afford public access for fishing to reservoir created by Pardee Dam.

Requested by: Senator, 26th District.

Opinion by: Edmund G. Brown,
Attorney General.
Ralph W. Scott, Deputy.

Honorable Stephen K. Teale, Senator of the Twenty-sixth District, has submitted the following regarding the use of dams and reservoirs for fishing:

"1. What is the scope and effect of section 531 of the Fish and Game Code?
"2. Must the East Bay Municipal Utility District open the Pardee Dam reservoir to fishing?
"3. What is the effect of section 531 of the Fish and Game Code on city reservoirs and other water supplies?
"4. Must the owner of a dam whose reservoir is entirely within the boundaries of his land open the reservoir to fishing and permit the public to cross his land?"

Our conclusions may be summarized as follows:

1. In the absence of contrary orders or rules and regulations of the Department of Public Health affecting domestic water supplies, section 531 is applicable in those cases where the dam in question is located on a stream naturally frequented by fish, and where the Fish and Game Commission has invoked sections 521 et seq. of the Fish and Game Code.

2. Inasmuch as no affirmative action has been taken under sections 521 and following with respect to Pardee Dam, the reservoir is not subject to public access for fishing, and the East Bay Municipal Utility District need not open the facility to public fishing at this time.

3. Section 531 is applicable to waters impounded by a municipality. However, if the waters are intended for domestic use, section 531 is subordinate to the power of the municipality as well as the Department of Public Health to prevent pollution.

4. If the Fish and Game Commission has acted under section 521 and following of the Fish and Game Code, the owner must open his reservoir to public fishing under such conditions as the Commission has prescribed, whether or not the reservoir is entirely on his private land, unless the Department of Public Health has promulgated rules to the contrary.

Analysis

Section 531 of the Fish and Game Code provides:

> "The owner of a dam shall accord to the public for the purpose of fishing, the right of access to the waters impounded by the dam during the open season for the taking of fish in such stream or river, subject to the rules and regulations of the commission."

In determining the scope and operation of the above quoted section, consideration must be given to the effect of section 203 of the Health and Safety Code, which provides:

> "It [the Department of Public Health] shall examine and may prevent the pollution of sources of public domestic water and ice supply."

There is no conflict between these two sections in and of themselves. However, situations may arise where the operation of these sections conflict. Section 203 of the Health and Safety Code would come into operation only where the impounded waters are used for domestic purposes.

Sections 4010 et seq., of the Health and Safety Code, which give the Board of Public Health the authority to regulate the furnishing and supplying of water for domestic purposes, require a permit from the Board before water may be furnished or supplied to users for domestic purposes.

Opening such water supplies to public fishing might well create no public health hazard. In fact, the Department of Public Health has refrained from interfering where certain domestic water supplies were opened to public fishing. But in other situations public fishing could result in the pollution of such water supplies. Thus the situation may arise where the Fish and Game Commission adopts regulations allowing fishing in a public domestic water supply, but the Department of Public Health, finding that this would create a public health hazard, forbids such fishing pursuant to its power under Health and Safety Code, sections 203 and 4010 et seq. In such case, the authority of one department must prevail, and in our opinion it is that of the Department of Public Health.

The Legislature has vested its power to deal with matters concerning public health exclusively in the Department of Public Health. While public recreation such as fishing may be considered one aspect of public

health, this fact does not give the Department of Fish and Game nor the Fish and Game Commission any authority in any public health matter. In delegating authority over public health matters to the Department of Public Health, the Legislature conferred extraordinary powers upon that department. It has the power to summarily abate public health nuisances (Health & Saf. Code §206) and to prescribe rules and regulations for the protection of public health (§102). It may bring actions to enforce its rules and regulations, to enjoin nuisances dangerous to public health, to compel performance of any act specifically enjoined upon any person, officer, or board by any law of this State relating to public health, and to protect and preserve the public health (§205). By sections 4010 and following, that department is given authority to license and regulate systems, sources and treatment of water. By conferring such broad powers on that department, the Legislature has recognized that the protection of the public health and safety is the most important of the police powers (see *Father Basil's Lodge* v. *City of Chicago* (Ill.), 65 N.E. 2d 805, 812; *Commonwealth* v. *Town of Hudson* (Mass.), 52 N.E. 2d 566, 570). Furthermore, the Legislature, by sections 106 and 1254 of the Water Code, has declared the State policy to be that the use of water for domestic purposes is the highest use of water. Thus we conclude that, by enacting these statutes, the Legislature intended that, where a conflict arises, the authority of the Department of Public Health should prevail. Where the impounded waters are not used for domestic purposes, section 531 of the Fish and Game Code applies, but where such waters are used for domestic purposes, section 531 becomes subordinate to any orders or rules and regulations promulgated by the Department of Public Health concerning such impounded waters.

The legislative history of section 531 of the Fish and Game Code was outlined in 8 Ops. Cal. Atty. Gen. 311. It was there pointed out that with the exception of section 522.5, sections 521 to 533 are all based on former Penal Code section 637. These sections are interrelated in that they deal with the subject of fishways and hence must be construed together. The conclusion was also reached that if the Fish and Game Commission is of the opinion that a dam does not prevent the free passage of fish, no need arises for the invocation of these sections. Consequently, section 531 is applicable only in those cases where (1) fish naturally frequent the stream, and (2) the commission finds that the dam prevents the free passage of fish, and that agency takes affirmative action by ordering a fishway or, in lieu thereof, a hatchery or the planting of fish (Fish and Game Code §§ 522, 526 and 530). Once section 531 becomes applicable, it is immaterial whether the reservoir is entirely on the land of the owner of the dam or not.

Prior to 1946, the scope and effect of section 531 was considered in Opinion No. 9314 dated June 1, 1934. It was concluded that the section is applicable to the waters impounded in natural streams by municipalities, and that no charge may be exacted for the privilege of fishing in such reservoirs. It was also there said that if "the waters impounded by such dam are intended for domestic purposes by the inhabitants of the municipality owning the dam, . . . the municipality would be empowered to make such rules and regulations governing the fishing therein as would insure the water against pollution." Two other opinions, NS-4253 dated April 22, 1942, and 8 Ops. Cal. Atty. Gen. 332 dealt with section 531. Opinion NS-4253 listed some of the items which may be controlled by the Fish and Game Commission in adopting regulations under section 531, such as the matter of boat charges, the method of fishing, transportation of fish taken from the reservoirs, and reports. In 8 Ops. Cal. Atty. Gen. 332, we said that under section 531 the public right of access to a dam located on the grounds of Folsom Prison is subject to any restrictions imposed by the prison directors with respect to the prison grounds.

From the information supplied by the Department of Fish and Game it appears that the reservoir created by Pardee Dam is located on the Mokelumne River, a stream naturally frequently by salmon and other migrating fish. The dam constitutes an upstream barrier to salmon migration. Due to its height the construction of a fishway is impracticable. However, the department points out that very few salmon have migrated past the dam site under natural conditions, because the principal spawning areas are downstream. Apparently for this reason section 521 and the succeeding sections were not invoked by calling either for the construction of a fish ladder or, in lieu thereof, for the construction of a hatchery or the planting of young fish. Under the circumstances, and in accordance with the views expressed in 8 Ops. Cal. Atty. Gen. 311, we conclude that until sections 521 et sq. are invoked, the reservoir created by Pardee Dam is not subject to section 531 of the Fish and Game Code. Furthermore, the waters in that reservoir being impounded for domestic use, if said sections are invoked by the commission, the application of section 531 will be subject to any orders or rules and regulations promulgated by the Department of Public Health.

Dams and Fishing Rights—No. 898

State of California
Office of Legislative Counsel
SACRAMENTO, CALIFORNIA, March 18, 1954

HONORABLE STEPHEN P. TEALE
Senate Chamber

DEAR SENATOR TEALE: You have asked us a series of questions relating to dams and fishing rights which we will answer in series.

Question No. 1: What is the scope and effect of Section 531 of the Fish and Game Code?

Opinion and Analysis: Section 531 of the Fish and Game Code reads:

> "531. The owner of a dam shall accord to the public for the purpose of fishing, the right of access to the waters impounded by the dam during the open season for the tak-

ing of fish in such stream or river, subject to the rules and regulations of the commission."

This provision apparently has never been construed in any reported judicial decision. The Fish and Game Commission does not at this time have any general rule implementing the section and, so far as we know, has never had one.

The provision first came into the law as an amendment to Section 637 of the Penal Code in 1917 (1917:749:1524). That section contained the following provisions:

The board of fish and game commissioners was required to examine all dams in all rivers or streams naturally frequented by salmon, trout, shad or other fish. (Now Sec. 521, F. & G. C.).

If in the opinion of the commissioners there was not free passage for fish over and around the dam they were to order the owner to build a fishway over the dam. (Now Sec. 522, F. & G. C.).

The owner of the dam was required to keep the fishway in repair and free from obstructions. (Now Sec. 523, F. & G. C.).

It was made unlawful to willfully destroy, injure, or obstruct such a fishway. (Now Sec. 524, F. & G. C.).

The owner of the dam was required to allow sufficient water to pass through the fishway to keep the fish below the dam in good condition but in times of low water the commissioners could permit the owner to allow the water to pass through a culvert, waste gate, or over or around the dam. (Now Sec. 525, F. & G. C.).

Whenever the commissioners found it impracticable to construct a fishway they could order the owner of the dam to equip a fish hatchery of no greater size than necessary to supply the stream or river with a reasonable number of fish. (Now Secs. 526 and 527, F. & G. C.).

The owner of the dam was required to furnish light to the hatchery if he generated electricity. (Now Sec. 528, F. & G. C.).

Then followed this provision:

> "Said owners or occupants shall also permit the use of water, without expense, to operate said proposed hatchery; provided, that the fish and game commission may, in lieu of said fishway, hatchery, dwellings, traps and other equipment necessary to operate a hatchery station as aforesaid, order the owner or occupants of said dam or other artificial obstruction to plant, under the supervision of the fish and game commission, the young of such fish as naturally frequent the waters of said stream or river, at such times, in such places, and in such numbers as the fish and game commission may order; provided, further, that *said* owners or occupants of *said* dam or or other artificial obstruction shall accord to the public, for the purpose of fishing, the right of access to the waters impounded by *said* dam or other artificial obstruction, during the open season for the taking of fish in *such* stream or river, subject to the rules and regulations of said fish and game commission." (Now Secs. 529, 530, and 531, F. & G. C. The emphasis is ours.)

It may be noted that the first "provided" clause is not actually a proviso to the matter immediately preceding it, which deals with the furnishing of water. It relates back to all of the preceding provisions of the section and provides a third alternative order when under those provisions there is found in a stream frequented by fish a dam over or around which there is not free passage for fish.

The "provided, further" clause (now Sec. 531, F. & G. C.) is of the same nature and also relates back to all of the preceding provisions. Therefore, the provision of Section 637 of the Penal Code which is now Section 531 of the Fish and Game Code, came into operation when there was found in a stream frequented by fish a dam over or around which there was not free passage for fish and the commission had made one of the three alternative orders: the construction of a fishway, the equipment of a hatchery, or the planting of fish.

Inasmuch as codification does not change the meaning and effect of the provisions codified (*Southern California Jockey Club* v. *California Horse Racing Board*, 36 Cal. 2d 167), Section 531 of the Fish and Game Code comes into operation only when the Fish and Game Commission has examined a dam in a stream frequented by fish, found that there was not free passage for fish over or around the dam, and ordered the owner of the dam to construct a fishway, equip a hatchery, or plant fish.

Section 531 of the Fish and Game Code obviously does not apply when the dam is not in a stream frequented by fish, such as a dam in a watercourse in which there is only an occasional or seasonal flow of water. It also does not apply to a dam so constructed that free passage for fish over and around it is provided. It also does not apply to a dam in a stream frequented by fish when there is no free passage for fish over or around the dam unless and until the Fish and Game Commission has determined that fact and issued one of the three alternative orders.

It may be noted, at this junction, that the Water Code provisions relating to the construction or enlargement of dams provide that when an application for approval of plans for such construction or enlargement is filed with the Department of Public Works a copy is to be filed with the Fish and Game Commission (Sec. 6500, Wat. C.). The approval of such plans by the department is required for dams which are either 25 feet in height or which impound more than 50 acre feet of water (Sec. 6002, Wat. C.).

The provision for submitting such copies came into the law in 1943 (Ch. 368, Stats. 1943). It is probable that in many instances since that time the commission has been able to secure whatever protection of the fishlife in the stream it considered necessary without resort to the procedure leading up to an order. Even prior to such provision, there was nothing to prevent

anyone who proposed to construct a dam from making an arrangement satisfactory to the commission, for the protection of fishlife in the stream, thus making it unnecessary for the commission to make any order in the matter.

This may account, in part at least, for the dearth of litigation involving Section 531 of the Fish and Game Code because the Fish and Game Commission may seldom, or perhaps never, have been put in the position of issuing such an order as would be required to activate the section.

In cases where the Fish and Game Commission may have taken jurisdiction and issued an order, Section 531 of the Fish and Game Code requires only that the owner of the dam afford access to the public for the purpose of fishing. If the public already has such access the section has no material effect. It is only when the land surrounding the impounded waters is completely under the control of the owner of the dam that the section has any material effect. In such a case the section is completely satisfied when the owner affords the public access to the waters impounded by the dam for the purpose of fishing.

Section 531 of the Fish and Game Code does not confer any right to fish. If, for any reason beyond the control of the owner of the dam, the public may not fish in the impounded waters after access has been afforded, it is immaterial as far as Section 531 is concerned.

It may be noted that the fishing that may be done must not only conform to provisions relating to open seasons but is subject to the rules and regulations of the Fish and Game Commission. There is no general rule on the subject in the commission's current rules and we do not think a general rule is necessary. We think that the commission could make different rules and regulations for different dams depending upon the circumstances.

For example, if the dam impounded a water supply or if for any other consideration of health or safety fishing should not be permitted in the impounded waters we think that the commission could prohibit such fishing. Apparently the Legislature, in enacting the provisions which are now in Section 531 of the Fish and Game Code, recognized that there might be situations in which fishing in the reservoirs of dams subject to the section should be restricted or prohibited and left it to the commission to meet those situations as they arose. If the fishing is prohibited the section is inoperative because it is only access for the purpose of fishing to which the public is entitled.

Question No. 2: Must the East Bay Municipal Utility District open its Pardee Dam Reservoir to fishing?

Opinion and Analysis: As noted above, Section 531 of the Fish and Game Code comes into operation only after the Fish and Game Commission has found that a dam obstructs passage for fish and has ordered the construction of a fishway, the equipment of fish hatchery, or the planting of fish. Unless the commission has exercised its jurisdiction over the Pardee Dam Section 531 does not apply to it. Even if the section does apply the Fish and Game Commission can regulate or prohibit fishing in the reservoir.

Question No. 3: What is the effect of Section 531 of the Fish and Game Code on city reservoirs and other water supplies?

Opinion and Analysis: As noted above, Section 531 of the Fish and Game Code does not, of itself, confer any right to fish. Under Section 203 of the Health and Safety Code the Department of Public Health is authorized to examine and prevent pollution of public domestic water supplies. Under Section 4455 of the same code it is unlawful to foul or pollute any body of water from which water is drawn to supply any portion of the inhabitants of this State. There is nothing in Section 531 of the Fish and Game Code which detracts from the powers of the state and local health authorities to protect the water supply. Furthermore, it is probable that the Fish and Game Commission would prohibit fishing in a reservoir subject to Section 531 if the reservoir contained water for domestic use.

Question No. 4: Must the owner of a dam whose reservoir is entirely within the boundaries of his land open the reservoir to fishing and permit the public to cross his land?

Opinion and Analysis: As noted above, Section 531 of the Fish and Game Code does not come into operation until the Fish and Game Commission has taken jurisdiction of the dam.

If the reservoir in question is not connected with the public waters of the State, that is if it constituted a landlocked pond, there would be no right of the public to fish in it(See cases collected in 5 A.L.R. 1056).

If the waters are connected with the public waters of the State and the reservoir is not over 25 acres in area when full, the owner of the land could obtain a farm pond permit under Sections 498 to 505, inclusive, of the Fish and Game Code. Section 531 of the code does not apply to farm ponds (Sec. 502, F. & G. C.).

If, however, the provisions of Section 531 of the Fish and Game Code are applicable to a reservoir the fact that the owner of the dam owned the land surrounding the reservoir would make no difference. In fact, it is only in such instances that Section 531 is of any practical consequence.

Very truly yours,

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