

RELEASED

RESTRICTED — Not to be released outside the General Accounting Office except as authorized by the Office of Congressional Administration

128087

BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Honorable  
Howard M. Metzenbaum  
United States Senate

# Bureau of Reclamation's Central Utah and Central Valley Projects Repayment Arrangements

The Department of the Interior's Bureau of Reclamation, the federal government's principal water development and management organization in the western United States, develops and operates projects to provide water for the generation of electricity and for municipal and industrial use and irrigation. Certain project costs must be paid by the project beneficiaries. GAO was asked to examine the repayment arrangements for two of these projects: the Central Utah Project's Bonneville Unit and the Central Valley Project in California.

GAO found that the current repayment contracts are inadequate to recover costs. The Bureau, however, is currently negotiating supplemental repayment contracts for the Bonneville Unit that would increase the repayment obligation for municipal and industrial water. In addition, the Bureau is developing a rate-setting policy to correct the shortfall on the Central Valley Project. The deficits on the Central Valley Project, nevertheless, will persist for several years until existing long-term contracts expire and are renegotiated.

Other issues that could affect the recovery of projects' costs are also discussed in the report.



128087

GAO/RCED-85-158  
SEPTEMBER 9, 1985

533171 / 128087

**Request for copies of GAO reports should be sent to:**

**U.S. General Accounting Office  
Document Handling and Information  
Services Facility  
P.O. Box 6015  
Gaithersburg, Md. 20877**

**Telephone (202) 275-6241**

**The first five copies of individual reports are free of charge. Additional copies of bound audit reports are \$3.25 each. Additional copies of unbound report (i.e., letter reports) and most other publications are \$1.00 each. There will be a 25% discount on all orders for 100 or more copies mailed to a single address. Sales orders must be prepaid on a cash, check, or money order basis. Check should be made out to the "Superintendent of Documents".**



UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,  
AND ECONOMIC DEVELOPMENT  
DIVISION

B-217826

The Honorable Howard M. Metzenbaum  
United States Senate

Dear Senator Metzenbaum:

In your November 8, 1984, letter you asked us to evaluate a number of specific policies and practices employed by the Bureau of Reclamation, Department of the Interior, to seek recovery of the federal investment in water projects. We provided your office with copies of several of our reports and legal opinions, which responded to a number of the specific items. In our letter of July 8, 1985, we provided you with an estimate of the cost to the U.S. Treasury from the Bureau using a 3.342-percent annual interest rate, rather than higher rates that were current when construction began on each major feature, in establishing repayment for all units of the Central Arizona Project.

On June 27, 1985, we briefed your office on the last two items, which concerned (1) the status of repayment of the Bonneville Unit of the Central Utah Project, the existing repayment contract, and the steps being taken to amend the contract and (2) the proposed irrigation and municipal and industrial (M&I) water supply rate-setting policies for the Central Valley Project (CVP), California. Subsequently, your office requested that we confirm in writing the information presented in the briefing. This report summarizes the information presented, and details on the two projects are contained in the appendixes.

BACKGROUND

The Bureau of Reclamation is the federal government's principal water development and water management organization in the western United States. Projects developed by the Bureau

provide water for generation of hydro-electric power and water supply for irrigation and M&I. Project costs allocated to power and M&I water are repaid with interest by the beneficiaries of these purposes, whereas irrigation costs are repaid without interest.

The Bonneville Unit is the largest unit of the Central Utah Project and will develop water resources in two basins on either side of the Wasatch Mountains. The unit will divert water from the eastern side via a tunnel through the Wasatch Mountains and into the Bonneville Basin. The principal purposes of the unit are to supply water to irrigation and municipal and industrial water users, and to generate commercial power. Construction of the unit began in 1966 and is currently almost one-third finished; completion is expected in 1996. The current estimated total cost is \$2.1 billion, \$1.9 billion of which is to be repaid to the federal government (\$915 million for irrigation, \$640 million for M&I water, and \$296 million for power). The remaining costs are allocated to nonreimbursable purposes such as fish and wildlife, flood control, and recreation.

In 1965, the federal government and the Central Utah Water Conservancy District signed a contract involving the Bonneville Unit which obligated the district to repay all of the costs allocated to M&I water supply and 31 percent of the costs allocated to irrigation. At that time, the contract obligated the district to repay \$156.8 million. However, because of a lengthened construction period, design refinement, and inflation, the existing repayment obligation is not adequate to recover the anticipated M&I water costs. As a result, the district and the Bureau are negotiating contracts to increase the M&I repayment obligation. The Bureau expects these contracts to be executed by the fall of 1985.

The Central Valley Project is an integrated network that includes dams and reservoirs, over 600 miles of canals and aqueducts, 56 pumping stations, and 8 power plants. The project is designed primarily to provide flood control, water for irrigation and M&I use, and power generation. The project was first authorized for construction in 1935, and the first feature was completed in 1942. Since then, the Congress has authorized the construction of several additional features, and the Bureau estimates that the project will be completed in 2001.

As of September 30, 1983, Central Valley Project facilities costing \$2.267 billion to construct had been placed in service; \$1.993 billion of these costs are reimbursable. Reimbursable costs are allocated as follows: \$1.229 billion to irrigation water, \$349 million to commercial power, \$266 million as the state's share and for facilities built to accommodate future additions, and \$149 million to M&I water. The remaining costs are for nonreimbursable purposes, such as fish and wildlife, recreation, and flood control.

To recover the costs allocated to irrigation and M&I water supply, the Bureau has entered into 298 contracts with water users. Federal investments for M&I water bear interest, while those for irrigation water are repaid interest-free. If irrigators are unable to repay their share of costs, commercial power customers make up the difference. Of the \$1.229 billion allocated to irrigation water service, the Bureau has estimated that \$113 million will be beyond the irrigators' ability to pay. This cost is to be repaid by commercial power customers.

As of September 30, 1984, irrigation and M&I water customers had repaid \$75.4 million of the \$1.378 billion of CVP facilities that were placed in service through 1983. Since 1982, irrigation revenues have been insufficient to cover annual operating expenses incurred by the federal government. Since the 1940's, M&I revenues have been insufficient to cover annual interest repayment requirements levied by the federal government. This situation is caused by fixed water service rates contained in long-term contracts negotiated between the Bureau and its customers. The majority of these contracts expire between 1995 and 2010.

Because repayment would not be accomplished under existing contracts, in April 1984 the Bureau started the formal process to establish rate-setting policies for the project. These policies are aimed at recovering, within 50 years, that portion of the existing plant in service allocated to irrigation and M&I water.

#### THE CENTRAL UTAH PROJECT

Based on the Bureau's interpretation of reclamation law and congressional actions, Bureau policy requires a firm repayment contract with an entity prior to construction of M&I project facilities which benefit that entity. Once a repayment contract has been executed, construction expenditures may not exceed the contractual repayment obligation. Beginning in the late 1970's, the Bureau recognized that the repayment contract with the Central Utah Water Conservancy District would not recover all of the then estimated Bonneville Unit costs allocated to municipal and industrial water supply. In 1980, the Bureau negotiated a supplemental repayment contract with the district to increase its M&I repayment obligation. Interior rejected this contract because it was legally questionable, contained several provisions which were not fiscally prudent, and did not adequately disclose the cost of the project to those responsible for repayment.

In order to continue construction without a new contract, the Bureau took two actions. First, in 1981, the Bureau invoked the Water Supply Act of 1958, deferring to the future repayment of costs associated with a portion of the M&I water to be delivered by the Bonneville Unit. This deferral enabled the Bureau to continue construction because the district's repayment obligation

was sufficient to cover the remaining estimated M&I construction costs. Second, the Bureau reassigned tax revenue from property owners within the district's boundaries which was intended for irrigation repayment to M&I repayment. This action increased the ceiling on M&I construction expenditures. In our opinion these actions, as applied to the Bonneville Unit, were legally improper because (1) the Water Supply Act allows the enlargement of a project to meet anticipated future demand, not the deferral of the costs of facilities to provide water already under contract and (2) the existing contract allocates the tax revenues to irrigation payment. As a result, we estimate that the Bureau has spent over \$100 million beyond the contractual repayment ceiling. In addition, if the interest-free period provided by the Water Supply Act is applied, we project a potential loss to the Treasury of \$8 million to \$97 million in interest over 1 to 10 years of deferral.

Negotiations for a new contract were suspended when the Bureau invoked the Water Supply Act and reassigned the tax revenues. Because obtaining additional repayment obligation is once again necessary, the Bureau began negotiations in July 1984. As planned, three contracts are being negotiated, which would increase the M&I repayment obligation by \$404 million, making the total repayment obligation \$554 million. Based on the Bureau's current estimate of total M&I costs including those deferred, this amount would be sufficient to recover the district's share of the costs. This M&I repayment obligation includes the \$38 million previously designated for irrigation repayment. The Bureau expects to execute these contracts by the fall of 1985.

In 1984, the Bureau modified its cost allocation procedure for the Bonneville Unit. The Bureau's Commissioner approved the modified method but has not yet reviewed or approved the actual allocation that resulted. This concerns us because contract negotiations have been based on this cost reallocation. In addition, the Department of Energy Organization Act of 1977 appears to require congressional approval of the reallocation of the costs of multipurpose facilities.

The modified procedure resulted in a substantial increase in the costs allocated to irrigation and a decrease in the power allocation by about the same amount. Since 1964, the costs allocated to irrigation have increased fivefold to \$915 million. Nevertheless, the Bureau assumes that the irrigation water users can repay \$16 million of these costs, which was outlined in the 1965 repayment contract. The Bureau has not reassessed the irrigators' payment capacity since then. This leaves the majority of the remaining irrigation costs to be paid by power revenues from the Colorado River Storage Project. Since, by law irrigation cost repayment is not subject to interest, the value of the eventual repayment will be substantially less than the value of the government's expenditures.

As stated previously, based on the Bureau's current estimates of total M&I costs, the new contracts being negotiated would be sufficient to recover the district's share of the costs. We questioned, however, the basis for the actions taken by the Bureau in 1981 in a letter to the Assistant Secretary of the Interior on April 22, 1985. In this letter, we also requested clarification on the issues of whether the 1981 deferral would result in an interest-free period as allowed under the Water Supply Act, the basis and approvals needed for the modified cost allocation procedure, and the appropriateness of the Bureau's estimates of irrigators' ability to pay. We have not yet received a response to our letter. However, as agreed with your office, we will provide you their response and our evaluation of it when available.

We also identified several planned actions which could affect repayment. First, the Bureau and the Western Area Power Administration have been seeking nonfederal participants to construct Bonneville Unit power plants that would provide revenue to supplement M&I repayment. In July, the prospective participants expressed an interest in funding a scaled-down version of the power plants, but they did not want to contribute to M&I repayment. Second, Bonneville Unit water, which will otherwise be available for irrigation and production of power, might be needed to satisfy two Bureau agreements--the 1965 Ute Indian Deferral Agreement and the 1980 Instream Flow Agreement. However, the Bureau currently plans to develop alternatives to using unit water which would not affect water supply, reimbursable costs, or repayment.

#### THE CENTRAL VALLEY PROJECT

In the late 1970's, Interior's Inspector General wrote two reports to the Secretary of the Interior concerning the Bureau's CVP water marketing and repayment practices. In addition to questioning the Bureau's contracting practices, the Inspector General commented on the Bureau's

- extending or rolling the repayment period for all CVP facilities each time a new facility was placed in service,
- establishing irrigators' water rates on estimates of their ability to pay,
- applying interest rates to annual M&I operating deficits that were lower than those actually incurred by the Treasury to finance such deficits, and
- not having a definite policy regarding who would repay costs of facilities, such as the San Felipe Unit, that were being constructed exclusively to serve specific customers.

The Bureau implemented an interim water service rate-setting policy in 1981. In response to public input, continued Inspector General criticism, and new irrigation repayment requirements for some customers as a result of the 1982 Reclamation Reform Act, the Bureau reanalyzed and revised this policy. Revised irrigation and M&I rate-setting proposals were issued for public comment in April 1984 and October 1984, respectively. In May 1985, the Bureau's Mid-Pacific Region submitted a revised irrigation policy proposal with five rate-setting options to the Commissioner of Reclamation for his review. A revised M&I policy proposal is scheduled to be submitted to the Commissioner in December 1985.

Under the proposed policies, all new or renewed contracts would provide for annual water rate adjustments to recover potential increased costs. Rolling repayment would be discontinued and replaced by a requirement to repay all existing facilities in service by 2030. Any new major facilities would be repaid 50 years after each facility is placed in service. Irrigation water rates would be based on cost of service. If, at contract renegotiation time, a customer should assert inability to meet the rate set under the new policy, the customer's ability to pay would be determined. The water rate for that customer would then be established at the cost of service or the customer's ability to pay, whichever is less, but would at least cover annual operating expenses. With respect to interest applied to M&I deficits, current Bureau instructions require that beginning in 1984, annual operating deficits will carry interest based on Treasury rates. A regional official told us, however, that a range of interest alternatives may be explored or analyzed as part of their M&I rate-setting policy process.

The San Felipe Unit is not scheduled to be placed in service until 1987; thus, the Bureau has not yet analyzed what impact it will have on repayment or customers' rates. Nevertheless, according to the proposed irrigation rate-setting policy and the Bureau's regional official who is revising the M&I proposal, the beneficiaries of the San Felipe Unit will be required to repay all San Felipe costs allocated to irrigation and M&I water supply, now estimated at \$105 million and \$214 million, respectively.

In summary, the proposed new water rate-setting policies should provide the basis for repayment of existing facilities now in service by 2030. Even with new rate-setting policies, however, irrigation and M&I water operations will experience annual operating deficits for the next several years, until existing water service contracts can be renewed and water rates are increased. M&I deficits will increase because of the effect of interest. Furthermore, San Felipe will add significantly to M&I operating deficits when it is placed in service. It will add \$214 million to the existing \$149 million plant in service.

On the basis of existing contracts with San Felipe water customers, we estimate that water rates will be insufficient to repay any of this cost until such rates can be adjusted (20 years after the first deliveries of M&I water). As a result, unless these contracts can be renegotiated before then, a deficit of between \$166 million and \$224 million may accumulate on San Felipe before rates can be increased to start repayment of this facility.

#### SCOPE AND METHODOLOGY

The information presented on the Bonneville Unit was obtained by interviewing Bureau officials and reviewing documents at the Bureau's Upper Colorado Regional Office in Salt Lake City, Utah, and its Utah Projects Office in Provo, Utah. To obtain background information on the Bonneville Unit and assess potential repayment, we reviewed reports prepared by the Department of the Interior's Office of the Inspector General, the National Wildlife Federation, and the Utah Natural Resources Department. Because of time constraints, we did not verify or assess the reliability of cost data that the Bureau used for repayment analyses.

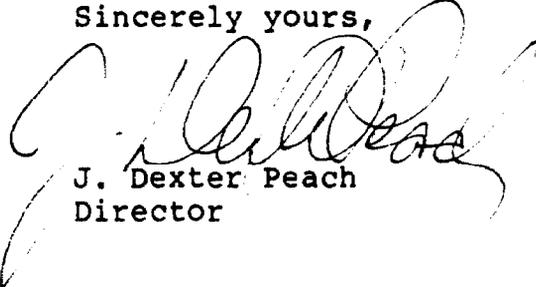
To obtain the information presented on the rate-setting policies for the Central Valley Project, we interviewed Bureau officials and reviewed documents at the Bureau's Mid-Pacific Regional Office in Sacramento, California. To obtain background information on the Central Valley Project, assess potential obstacles to repayment, and identify steps being taken to implement new rate-setting policies, we reviewed Federal Register notices; Bureau instructions; financial statements, cost data, water yield information, and repayment and rate-setting documents; water service contracts; congressional correspondence and hearings; reports prepared by the Department of the Interior's Office of Inspector General; and public comments on the Bureau's proposal from the National Wildlife Federation, the Natural Resources Defense Council, and various water districts and associations. We did not verify water delivery and cost data developed by the Bureau, which were used for rate-setting and repayment analyses, because of our short time frame. Nor did we assess the reliability for any computer-produced data and analyses.

Our review was performed in accordance with generally accepted government audit standards except that we did not verify or assess the reliability of data provided by the Bureau. The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. In accordance with your request, we did not request the Department of the Interior to review and officially comment on a draft of this report.

- - - -

As arranged with your office, unless you publicly announce its contents earlier, we do not plan to distribute this report further until 30 days from its issue date. At that time, copies will be sent to the Secretary of the Interior and the Director, Office of Management and Budget. Copies will also be made available to other interested parties upon request.

Sincerely yours,



J. Dexter Peach  
Director

# C o n t e n t s

	<u>Page</u>
<b>APPENDIX</b>	
<b>I</b>	<b>INFORMATION ON REPAYMENT ARRANGEMENTS FOR THE BONNEVILLE UNIT OF THE CENTRAL UTAH PROJECT</b>
	1
	1
	3
	3
	6
	8
	9
	10
	10
	11
	11
<b>II</b>	<b>INFORMATION ON REPAYMENT ARRANGEMENTS FOR THE CENTRAL VALLEY PROJECT</b>
	13
	13
	15
	16
	21
	22
	26
	29
	31
	33
 <b><u>ILLUSTRATIONS</u></b>  	
<b>TABLES</b>	
<b>I.1</b>	<b>Cost allocation and repayment, Bonneville Unit</b>
	5
<b>I.2</b>	<b>Cost allocations, Bonneville Unit</b>
	9

		<u>Page</u>
II.1	Major features of the Central Valley Project	13
II.2	Cost allocation and repayment, Central Valley Project	17
<b>FIGURES</b>		
I.1	Map of Bonneville Unit, Central Utah Project	2
II.1	Map of Central Valley Project	14
II.2	Status of irrigation and M&I repayment, Central Valley Project	20
II.3	Number of Contracts for Water Service, Central Valley Project	20
II.4	Projected rates for customers, San Luis Canal, Central Valley Project	25
II.5	Projected rates for customers, Sacramento River, Central Valley Project	25
II.6	Projected rates for M&I water (4 percent inflation and 7.5 percent interest) Central Valley Project	28
II.7	Projected rates for M&I water (6 percent inflation and 10 percent interest) Central Valley Project	28

ABBREVIATIONS

CVP	Central Valley Project
FY	Fiscal Year
GAO	General Accounting Office
IG	Inspector General
M&I	Municipal and Industrial
OM&R	Operation, Maintenance, and Replacement

INFORMATION ON REPAYMENT ARRANGEMENTS FOR  
THE BONNEVILLE UNIT OF THE  
CENTRAL UTAH PROJECT

BACKGROUND

The Department of the Interior's Bureau of Reclamation undertook construction of the Central Utah Project as part of the Colorado River Storage Project authorized by a 1956 law. The Central Utah Project consists of six units--Jensen, Vernal, Uintah, Upalco, Ute Indian, and Bonneville. The Bonneville Unit--the largest of the six--develops water resources in two basins on either side of the Wasatch Mountains. The unit will divert water from the eastern side via a tunnel through the Wasatch Mountains into the Bonneville Basin.

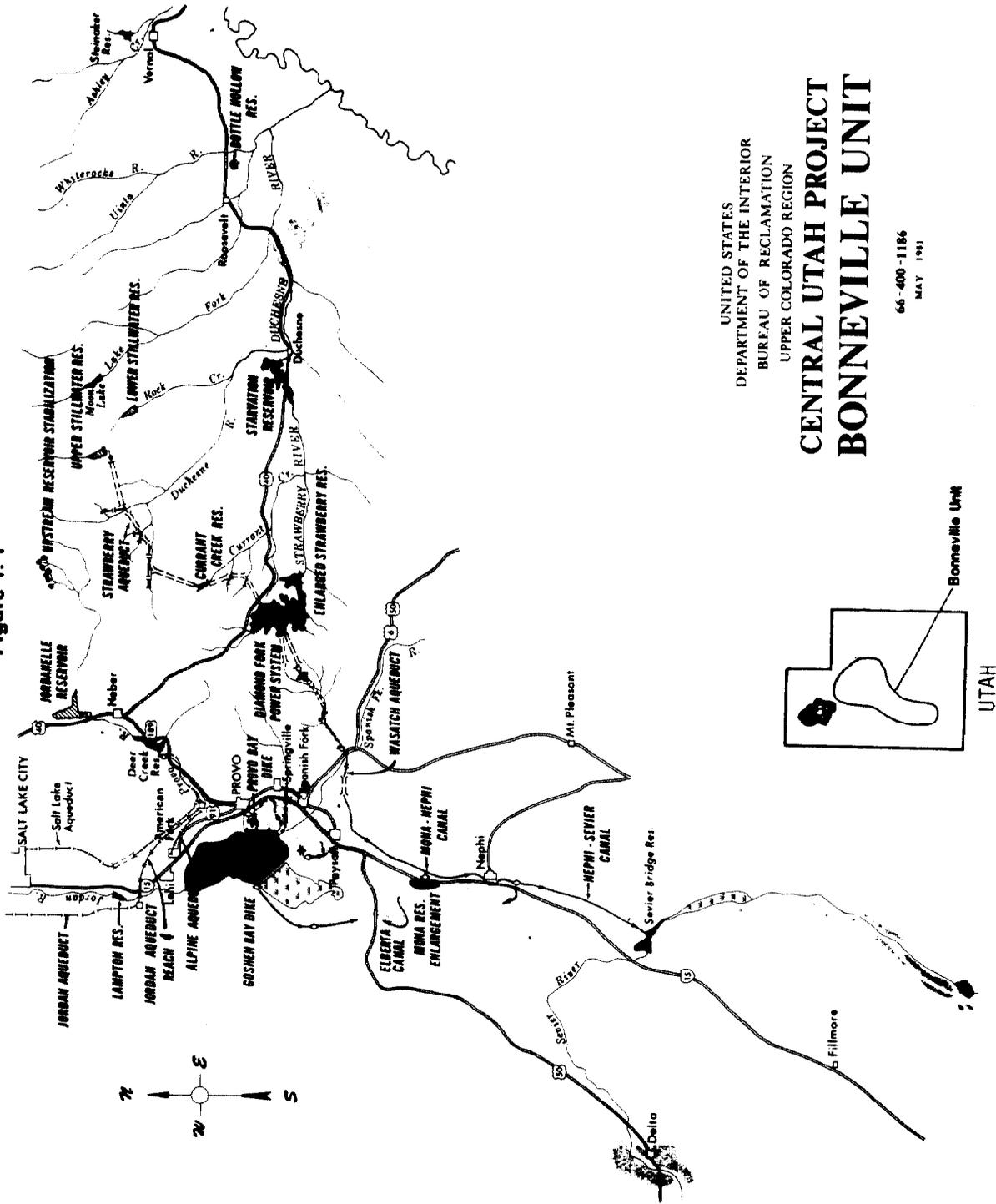
The Bonneville Unit is to provide 176,600 kilowatts of electricity and an annual water supply of 288,000 acre-feet<sup>1</sup>--167,000 acre-feet of irrigation water and 121,000 acre-feet of municipal and industrial (M&I) water. The unit is made up of five systems: a collection system, water system development for the Ute Indians, an M&I system, a power system, and an irrigation and drainage system.

Construction on the Bonneville Unit began in 1966 and was scheduled for completion in the early 1980's. However, a lengthened construction period, design refinements, and budgetary constraints have delayed the unit's completion. Currently, it is about one-third finished; completion is expected in 1996.

---

<sup>1</sup>An acre-foot is 325,851 gallons, or the amount of water needed to submerge 1 acre of land under 1 foot of water.

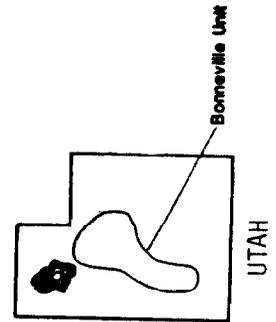
Figure 1: 1



UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 BUREAU OF RECLAMATION  
 UPPER COLORADO REGION

# CENTRAL UTAH PROJECT BONNEVILLE UNIT

66-400-1186  
 MAY 1961



WHY GAO CONDUCTED ITS REVIEW

On November 8, 1984, Senator Howard M. Metzenbaum asked us to determine whether the existing repayment contract<sup>2</sup> for the Bonneville Unit of the Central Utah Project is adequate to repay the cost of the unit and, if not, what steps are being taken to amend the contract.

To meet our objective, we interviewed Bureau officials; reviewed documents at the Bureau's Upper Colorado Regional Office in Salt Lake City, Utah; and its Utah Projects Office in Provo, Utah, and contacted the Repayment Branch Chief at Bureau headquarters. To obtain background information on the Bonneville Unit and assess potential for repayment, we reviewed reports and correspondence prepared by the Department of the Interior's Office of Inspector General, the National Wildlife Federation, and the Utah Natural Resources Department.

On April 22, 1985, we sent a letter to Interior's Assistant Secretary for Water and Science questioning certain of the Bureau's actions regarding the Bonneville Unit and requesting clarification of certain issues. The Assistant Secretary has not yet responded to our letter. As agreed with the Senator's office, we will provide him with the response and our evaluation of it when available.

Our analysis of the unit's repayment status is based on Bureau cost data. We did not verify these data or assess their reliability. The information presented reflects the most current available at the time of our review--February to June 1985; however, many of the actions discussed are tentative.

COST ALLOCATION AND REPAYMENT

The Bureau published a definite plan report for the Bonneville Unit in 1964. The plan estimated a project cost of \$329.1 million. The reimbursable costs were estimated at

---

<sup>2</sup>The Reclamation Project Act of 1939 requires the Bureau to recover all M&I costs, with interest, if the Secretary of the Interior determines that an interest charge is proper (as he did in this instance, and irrigation costs which are recovered without interest. Under the Colorado River Storage Project Act of 1956, power revenues may be used to pay irrigation costs which are beyond the irrigators' ability to pay.

\$302 million, of which \$177.6 million was allocated to irrigation water, \$76.3 million to M&I water, and \$48.2 million to power. The remaining project costs were for nonreimbursable purposes such as fish and wildlife, flood control, and recreation.

The Central Utah Water Conservancy District was organized in 1964 under state law to contract with the federal government for water to be supplied by the Central Utah Project. The district's repayment obligation for the Bonneville Unit is outlined in a contract signed in 1965 between the district and the federal government. The district obligated itself to repay (\$130.7 million) all of the costs allocated to M&I water and 31 percent of the costs allocated to irrigation water.

Repayment for M&I water would come from charges to M&I users (\$57.2 million) and an ad valorem (percentage of value) tax (\$19 million) on property owners within the district's boundaries. An irrigation repayment obligation of \$54.4 million (31 percent of \$177.6 million) was to be repaid from ad valorem property taxes (\$38 million) and charges to irrigation water users based on their ability to pay (\$16.4 million).

In addition to the \$130.7 million obligation, a 20-percent escalation factor was included for potential cost increases, project modifications, and increases or adjustments in water supply. The escalation factor increased the maximum repayment obligation to \$156.8 million. The Bureau added the entire escalation factor to the M&I repayment obligation, while leaving the irrigation obligation constant at \$54.4 million. Thus, \$102.4 million became the M&I repayment obligation, or ceiling, beyond which funds for M&I costs could not be spent.

The remaining irrigation costs (\$123.2 million) and all of the commercial power costs (\$48.2 million) were to be repaid by power revenues from the Bonneville Unit (\$59.7 million) and the Colorado River Storage Project (\$111.7 million).

Along with a delayed completion, Bureau estimates show that the Bonneville Unit's reimbursable costs have increased from \$302 million to \$1.852 billion. Costs allocated to irrigation and M&I water supply are now estimated at \$1.556 billion (compared with the \$254 million shown in the 1964 definite plan report).

Table I.1Cost Allocation and Repayment  
Bonneville Unit

(000 omitted)

<u>Cost allocation</u>	1964 definite plan <sup>a/</sup> (bureau records)		Bureau estimate (FY 86 budget data)	
	<u>Cost</u>	<u>Percent</u>	<u>Cost</u>	<u>Percent</u>
Reimbursable:				
Irrigation	\$177,605	54.0	\$ 915,090	43.1
M&I	76,268	23.2	640,882	30.2
Commercial power	48,152	14.6	296,371	14.0
Total	<u>\$302,025</u>	<u>91.8</u>	<u>\$1,852,343</u>	<u>87.3</u>
Nonreimbursable:				
Fish & wildlife	20,880		167,295	
Flood control	3,474		5,619	
Recreation	2,712		61,531	
Highways	-		35,012	
Total	<u>\$ 27,066</u>	<u>8.2</u>	<u>\$ 269,457</u>	<u>12.7</u>
Total	<u>\$329,091</u>	<u>100.0</u>	<u>\$2,121,800</u>	<u>100.0</u>
<u>Repayment of</u> <u>Reimbursable Costs</u>				
Irrigation costs:				
Water users	\$ 16,400	9.2	\$ 16,400	1.8
ad valorem tax	38,005	21.4	-	0.0
Power revenues	123,200	69.4	897,928	98.1
Other	-	0.0	762	0.1
Total	<u>\$177,605</u>	<u>100.0</u>	<u>\$ 915,090</u>	<u>100.0</u>
M&I costs:				
Water users	57,236	75.0	455,514	71.1
ad valorem tax	19,032	25.0	175,010	27.3
Other	-	0.0	10,358	1.6
Total	<u>\$ 76,268</u>	<u>100.0</u>	<u>\$ 640,882</u>	<u>100.0</u>
Commercial power	<u>48,152</u>	<u>100.0</u>	<u>296,371</u>	<u>100.0</u>
Total	<u>\$302,025</u>		<u>\$1,852,343</u>	

<sup>a/</sup>The definite plan report provides the basis for the initial appropriation for construction and the repayment contract.

IMPROPER ACTIONS TAKEN TO ALLOW  
CONSTRUCTION TO CONTINUE

Construction on the Bonneville Unit began in 1966. In the late 1970's, the Bureau first recognized that the 1965 repayment contract would not recover all allocated M&I costs because of a lengthened construction period and inflation. On the basis of the Bureau's interpretation of reclamation law and congressional actions, Bureau policy requires a firm repayment contract with project beneficiaries for construction to proceed. The Bureau--aware that construction could be delayed unless the M&I repayment obligation of \$102.4 million was increased--negotiated a supplemental contract with the district in 1980 that would have increased the district's repayment ceiling. However, the Assistant Secretary of the Interior for Land and Water raised several concerns about the contract and withheld approval. The Bureau then took two actions that permitted construction to continue under the existing contract. We believe that these actions were improper.

Use of 1958 Water Supply Act  
to defer a portion of M&I costs  
was legally improper

In 1981, the Bureau invoked the Water Supply Act of 1958, deferring to the future repayment of costs associated with all but 39,000 acre-feet of M&I water to be delivered by the Bonneville Unit. This deferral enabled the Bureau to continue construction because the district's repayment obligation was sufficient to cover the remaining costs. At the same time, the district contributed \$10 million in cash, increasing its M&I repayment obligation and the related construction ceiling to \$112.4 million.

According to the Regional Director and the headquarters Repayment Branch Chief, the Bureau did not obtain an opinion from Interior's solicitors regarding the Water Supply Act's application to the Bonneville Unit. We believe the Bureau's use of the Water Supply Act for the Bonneville Unit was not legally proper. The act allows the Bureau to enlarge a project for storage of additional water to meet an anticipated future demand, without a contract for repayment of the enlargement. It does not allow the Bureau to defer repayment obligations and thereby continue planned construction of facilities for M&I water supply already under contract.

Use of ad valorem tax revenues  
to increase M&I repayment  
obligation was improper

The Bureau also decided to use ad valorem tax revenues only for M&I repayment. According to the 1964 definite plan report, on which the 1965 repayment contract was based, repayment of irrigation costs would include \$38 million in future ad valorem tax revenues. But in 1982, at the district's request, the Bureau reallocated this \$38 million toward M&I repayment to increase the repayment ceiling to \$150.4 million. We believe this action was legally improper, since the existing contract dedicates the \$38 million to irrigation repayment.

Effects of actions to  
continue construction

As a result of these actions:

- The Bureau was able to suspend negotiations for a new contract and continue construction beyond the legitimate M&I repayment obligation of \$112.4 million (including the \$10 million added by the district in 1981). We estimate that as of January 31, 1985, the Bureau had spent \$213 million on M&I construction--\$101 million in excess of the proper ceiling. Of this amount, \$38 million can be attributed to the reassignment of the ad valorem tax intended for irrigation and \$63 million to misapplication of the Water Supply Act.
- The government will probably lose interest on M&I repayment. The 1965 repayment contract, in accordance with the 1956 authorizing legislation, begins charging interest on the M&I repayment obligation as soon as any supply of water becomes available for delivery. However, under the Water Supply Act, costs for deferred water supply bear no interest for up to 10 years, or until this water is first delivered, if sooner. According to the regional Repayment Branch Chief, the Bonneville Unit's deferred M&I water could be interest free for up to 10 years. Our letter to the Assistant Secretary asked that this issue be clarified. If the interest free period is applied, we project a potential loss to the Treasury of \$8 million to \$97 million in interest over 1 to 10 years of deferral.

MODIFIED COST ALLOCATION PROCEDURE  
INCREASED IRRIGATION COSTS  
AND REDUCED POWER COSTS

In 1984, the Bureau's Commissioner allowed the region to modify its procedure for allocating Bonneville Unit costs. The allocation resulting from this change appeared in the supplement to the definite plan report, revised September 1984, and is being used as the basis for current repayment contract negotiations.

What level of approval will be required for this new allocation is unclear. Regional officials told us that only the Bureau's Commissioner will need to approve the revised definite plan report, which includes the modified allocation. They do not intend to submit it to him for some time, until planning for the final phase of Bonneville--the irrigation and drainage system--is complete. However, the Department of Energy Organization Act of 1977 appears to require congressional approval of the reallocation of the costs of multipurpose facilities. This possibility was raised in our letter to the Assistant Secretary of the Interior.

We did not analyze how costs were allocated; rather, we looked at the effect the modified procedure had on allocated costs. The modified procedure increased the irrigation allocation by \$381 million and decreased the power allocation by \$378 million.

This modification will have an impact on repayment. Current cost estimates allocate \$915.1 million to irrigation. Of this, \$898.7 million will be beyond the irrigators' repayment obligation of \$16.4 million and, thus, would be primarily repaid by power revenues from the Colorado River Storage Project. However, these power revenues will be used to repay the costs allocated to Colorado River power development first, before they are used to repay irrigation costs. In addition, since irrigation cost repayment is not subject to interest by law, the value of the eventual repayment will be substantially less than the value of the government's expenditures.

Table I.2Cost Allocations, Bonneville Unit

	<u>Old procedure<sup>a</sup></u>	<u>Modified procedure<sup>a</sup></u>	<u>Increase (decrease)</u>
	(000 omitted)		
Reimbursable costs:			
Irrigation	\$ 534,100	\$ 915,090	\$ 380,990
M&I	616,665	640,882	24,217
Power	<u>674,663</u>	<u>296,371</u>	<u>(378,292)</u>
Total	<u>\$1,825,428</u>	<u>\$1,852,343</u>	<u>\$ 26,915</u>
Nonreimbursable costs:			
Flood control	13,571	5,619	
Fish & wildlife	245,521	167,295	
Recreation	61,531	61,531	
Highways	<u>35,012</u>	<u>35,012</u>	
Total	<u>\$ 355,635</u>	<u>\$ 269,457</u>	<u>\$(86,178)</u>
Total	<u>\$2,181,063</u>	<u>\$2,121,800</u>	<u>\$(59,263)</u>

<sup>a</sup>Costs from FY 1986 budget data.

IRRIGATORS' ABILITY TO PAY  
NOT ASSESSED SINCE 1964

The 1964 definite plan report allocated \$177.6 million to irrigation. The 1965 repayment contract fixed the irrigators' ability to pay at \$16.4 million. Since 1964, the amount of water to be delivered for irrigation has decreased by 23 percent. Yet, with increasing project costs and the modified allocation, irrigation costs are now estimated at \$915.1 million (a fivefold increase since 1964). Our letter asked Interior's Assistant Secretary if \$16.4 million is a realistic repayment obligation in light of the nearly \$1 billion price tag for irrigation.

The irrigators' ability to pay has not been fully studied since the original estimate in 1964. According to the regional economist, an updated analysis will be performed before the

irrigation and drainage system plan is completed toward the end of 1985, but he does not expect a major increase in the irrigators' ability to pay. Irrigators' rising operation and maintenance costs, he said, have consumed any increase in their payment capacity.

#### M&I WATER SUPPLY AND COSTS

Costs allocated to M&I water have also increased since the original 1964 estimate of \$76.3 million. The costs associated with supplying 121,000 acre-feet of M&I water are now \$640.9 million. Of this amount, \$525.1 million is related to the 94,000 acre-feet to be received by the district.

The remaining 27,000 acre-feet was pegged for industrial use by Utah Power and Light Company. However, a 1984 review by the Utah Natural Resources Department indicated that the utility may not have a need for this water in the near future. According to regional officials, the Bureau is now considering reassigning the 27,000 acre-feet to irrigation.

#### PROPOSED REPAYMENT CONTRACTS WOULD PROVIDE \$404 MILLION MORE FOR THE DISTRICT'S M&I REPAYMENT

Expenditures allocated to M&I development have exceeded the district's total repayment obligation of \$112.4 million. Operating under the supposition that deferrals and reallocations were proper, the Bureau did not reinitiate negotiations for a supplemental contract to increase the district's repayment obligation until July 1984.

The proposed supplemental contract with the district will increase its obligation by \$368.5 million, including a 10-percent escalation factor for cost increases, project modifications, and increases or adjustments in water supply. The contract also assumes that the \$38 million previously designated for irrigation repayment will be used for M&I repayment.

Two other repayment contracts are being negotiated with the district and its municipal subdistricts to repay the costs of the Jordan Aqueduct, part of the M&I system. These proposed contracts would provide another \$35.3 million in repayment obligation. The contractors would also repay any costs for the aqueduct beyond the contracted amount. With these three contracts in place, the total M&I repayment obligation will be \$554.2 million.

The regional Repayment Branch Chief informed us that local negotiations on the three contracts will probably be completed by August. Then, because the supplemental contract with the district anticipates the need for additional ad valorem taxes, it must be submitted to the local voters for approval before it is signed. The two Jordan Aqueduct contracts are exempt from the voting requirement by state legislation since the subdistricts intend to repay their costs with user charges rather than tax revenues. According to the Bureau's Repayment Branch Chief in Washington, the proposed contracts should be executed by fall 1985.

Even if these contracts are approved, the district may seek judicial relief to reduce the total costs it would repay. Its supplemental contract provides

- relief from certain cost overruns and research costs associated with the Strawberry Aqueduct and Collection System,
- a reduction in the federal financing rate from 3.22 percent to 2.67 percent--the rate the district contends was in effect at the time the Central Utah Project was authorized, and
- use of Colorado River Storage Project power revenues to help repay M&I costs.

#### REPAYMENT OF M&I COSTS THROUGH POWER REVENUES

The Bureau and the Western Area Power Administration have been seeking nonfederal participants to construct Bonneville Unit power plants that would provide revenue to supplement M&I repayment. In July, the prospective participants expressed an interest in funding a scaled-down version of the power plants, but they did not want to contribute to M&I repayment.

#### UTE DEFERRAL AND INSTREAM FLOW AGREEMENTS

Two Bureau agreements to provide water supplies could affect repayment and impair the Bonneville Unit's economic feasibility. In 1965, the Ute Indian Deferral Agreement was signed, permitting the unit to use water to which the Utes held rights. In return, the Bureau would build a project for the Utes by 2005 to replace the water that would be diverted from their lands. Another agreement--the Instream Flow Agreement signed in 1980--obligates

the district or the Bonneville Unit to provide water to help maintain stream flows for Colorado Basin fish habitat by the time the transbasin diversion facilities are complete.

Currently, the Bureau plans to fulfill these agreements without using Bonneville water. However, if the deadlines are not met, Bonneville Unit water could be used. Regional repayment and economics officials have told us that this use would occur only as a last resort.

The region has not performed cost allocation studies that consider use of Bonneville water; however, at our request the officials speculated about the potential effect. Because this water development would take place in the basin east of the Wasatch Mountains, the irrigation water supply would probably be reduced. In this case, the regional economist told us, some costs would be reallocated to M&I; hence, the repayment obligation required from the district would increase. In addition, any use of Bonneville Unit water supply would reduce both the power obtainable from the Diamond Fork power system and the water available for transbasin use, thereby impairing the economic value of the Bonneville Unit.

Barring the use of Bonneville water, regional officials do not believe these agreements would affect reimbursable Bonneville Unit costs. Costs to maintain stream flows would probably be nonreimbursable, they told us, and the Ute Indian costs would be borne by the Uintah Unit of the Central Utah Project.

INFORMATION ON REPAYMENT ARRANGEMENTS FOR  
THE CENTRAL VALLEY PROJECT

BACKGROUND

The Central Valley Project (CVP) encompasses more than one-third of California's total land area. It is an integrated network that includes dams and reservoirs, over 600 miles of canals and aqueducts, 56 pumping stations, and 8 power plants. The project is designed primarily to provide flood control, water for irrigation and municipal and industrial use, and power generation. In fiscal year 1984, the CVP delivered about 8.3 million acre-feet of water and generated 7.3 billion kilowatt-hours of electricity.

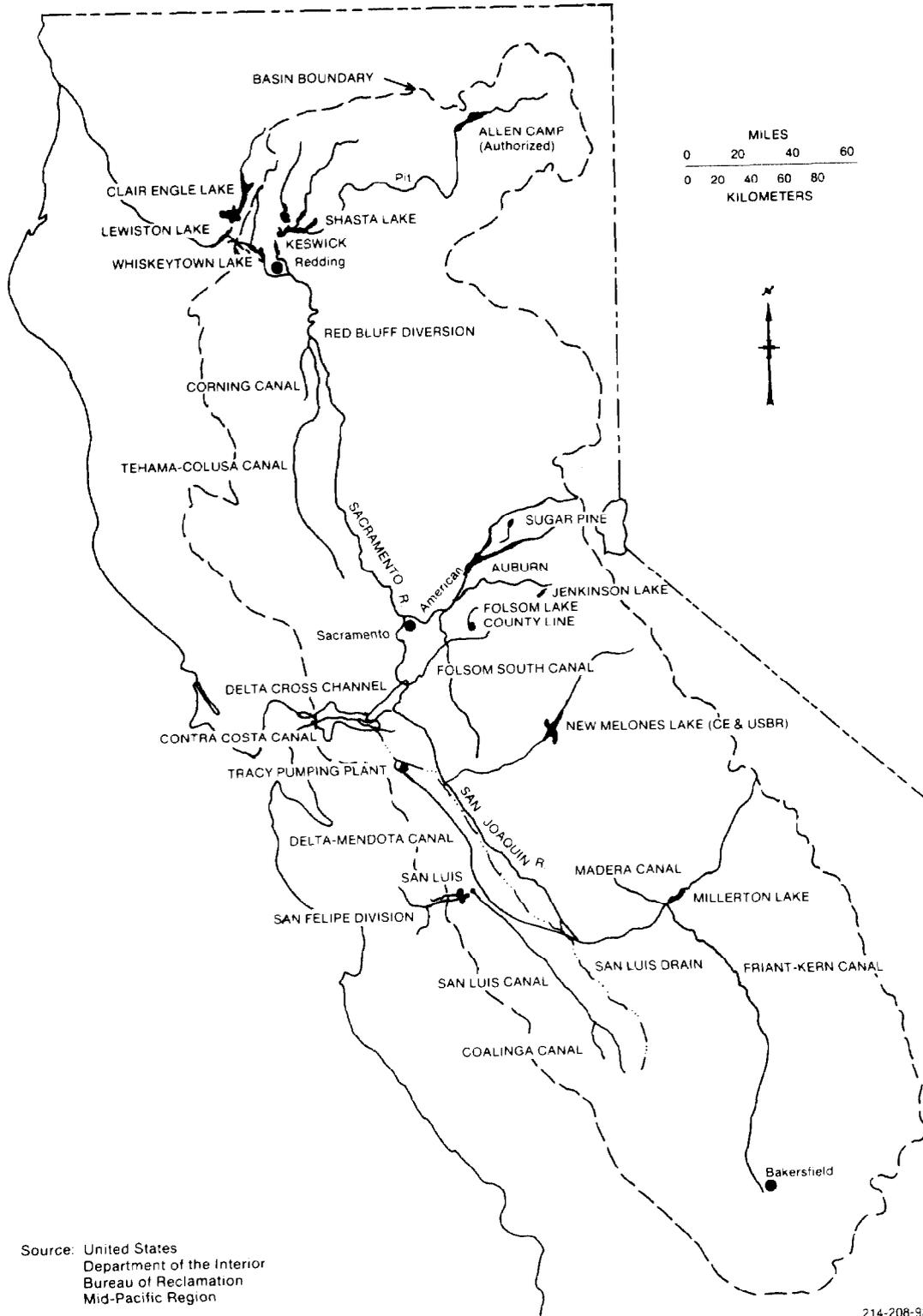
The initial project was authorized for construction in 1935. Several facilities, including Shasta Dam, Friant Dam and Canals, Tracy Pumping Plant, and the Delta-Mendota Canal, made up the initial project and were placed into integrated operation in 1951. Several additional units were authorized for construction between 1949 and 1967. Among those which have been completed are Folsom Dam (1956), Trinity River Complex (1964), and New Melones Dam (1979). The San Luis Unit was placed in service in 1968 but is considered incomplete because the San Luis Drain, a part of the unit, was only partially built. Construction of Auburn Dam was started but has been discontinued indefinitely. The San Felipe Division is scheduled for completion in 1987. The Bureau of Reclamation has estimated that the CVP will be completed in 2001.

Table II.1

Major Features of the Central Valley Project

<u>Feature</u>	<u>When authorized</u>	<u>When completed</u>
Initial Project:	1935	1951
Contra Costa Canal		1948
Friant Dam		1942
Shasta & Keswick Dams		1945, 1950
Madera Canal		1945
Friant Kern Canal		1951
Delta-Mendota Canal		1951
Tracy Pumping Plant		1951
Delta Cross Channel		1951
Folsom & Nimbus Dams	1949	1956, 1955
Sacramento Canals	1950	Incomplete
Trinity River Division	1955	1964
San Luis Unit	1960	Incomplete
New Melones Unit	1962	1979
Auburn-Folsom South	1965	Incomplete
San Felipe Division	1967	Incomplete

Figure II: 1  
Central Valley Project  
California



Source: United States  
Department of the Interior  
Bureau of Reclamation  
Mid-Pacific Region

214-208-9302

WHY GAO CONDUCTED ITS  
REVIEW

On November 8, 1984, Senator Howard M. Metzenbaum asked us to evaluate whether the Bureau of Reclamation's water project repayment policies will result in full and timely repayment to the Treasury as required by law. He requested that we evaluate the proposed new irrigation rate-setting policy for the Central Valley Project. Subsequently, we were requested to also evaluate the CVP proposed new municipal and industrial water rate-setting policy.

The Secretary of the Interior has not yet approved new rate-setting policies for the project's irrigation and M&I water service customers. The Bureau's Regional Director, Mid-Pacific Region, considers the rate-setting policy proposals we reviewed to be internal working documents subject to continual revision until approved by the Secretary.

We interviewed Bureau officials and reviewed documents at the Bureau's Mid-Pacific Regional Office in Sacramento, California. To obtain background information on the CVP and data on the status of repayment and identify steps being taken to establish new water service rate-setting policies, we reviewed the 1939 Reclamation Project Act and the 1982 Reclamation Reform Act; Federal Register notices; Bureau instructions; CVP financial statements, cost data, water yield information, and repayment and rate-setting documents; water service contracts between the Bureau and CVP customers; congressional correspondence and hearings; reports prepared by Interior's Office of Inspector General; and public comments on the Bureau's proposal from the National Wildlife Federation, the Natural Resources Defense Council, and various water districts and associations.

We did not have time to verify water delivery and cost data that the Bureau used for rate-setting and repayment analyses. Nor did we assess the reliability of any computer-produced data and analyses. With respect to cost allocations, we noted that Bureau regional instructions require a major reallocation study for CVP every 10 years to reflect changing accomplishments. However, such a study has not been performed since 1970. The Bureau's regional economist cited lack of funds as the reason for not performing the required study.

During our review, we noted that a major certified public accounting firm was conducting a financial audit of the CVP. The scope of the audit includes a verification and reconciliation of historical revenue and cost data. They expect to complete their audit and provide the Bureau with their report in September 1985.

The information presented reflects the most current information available at the time of our review--February to June 1985.

COST ALLOCATION AND REPAYMENT

The CVP is a multipurpose project. Cost allocations for construction and for annual operation, maintenance, and replacement (OM&R) expenses are necessary to determine repayment requirements of different reimbursable functions in the Bureau's multipurpose projects such as irrigation, municipal and industrial water supply, and commercial power.

As of September 30, 1983, CVP facilities costing \$2.267 billion to construct had been placed in service. Of this amount, \$1.993 billion were reimbursable costs and were allocated by the Bureau as follows: \$1.229 billion to irrigation water; \$149 million to M&I water; \$349 million to commercial power; \$184 million to the State of California's share of the San Luis Unit; and \$82 million to facilities built to accommodate future additions (deferred use). The remaining project costs (\$274 million) are for nonreimbursable purposes, such as fish and wildlife, recreation, and flood control.

The Bureau has estimated the project's total cost, assuming completion of all authorized facilities ("ultimate development"), at \$5.811 billion. Of this total, \$5.161 billion will be reimbursable. Reimbursable costs will be allocated \$3.345 billion to irrigation water, \$716 million to M&I water, \$796 million to commercial power, \$188 million to the state's share of San Luis, \$99 million to deferred use, and \$17 million to other purposes.

Table II.2Cost Allocation and Repayment  
Central Valley Project

(000 omitted)

<u>Cost allocation</u>	<u>Plant in service</u> <u>(9/30/83)</u>		<u>Ultimate development<sup>a</sup></u> <u>(FY 86 budget data)</u>	
	<u>Cost</u>	<u>Percent</u>	<u>Cost</u>	<u>Percent</u>
Reimbursable:				
Irrigation	\$1,228,536	54.2	\$3,345,044	57.6
M&I	149,091	6.6	715,850	12.3
Total	\$1,377,627	60.8	\$4,060,894	69.9
Commercial power	348,778	15.4	795,881	13.7
State share of				
San Luis Unit	184,456	8.1	187,836	3.2
Deferred use	81,965	3.6	99,425	1.7
Other	-	-	17,174	0.3
Total	\$1,992,826	87.9	\$5,161,210	88.8
Nonreimbursable	274,221	12.1	649,367	11.2
Total	\$2,267,047	100.0	\$5,810,577	100.0
<u>Scheduled Repayment of</u> <u>Reimbursable Costs</u>				
Irrigation				
Water customers	\$1,114,705	55.9	\$2,898,682	56.2
Power customers	113,831	5.7	446,362	8.6
Total	\$1,228,536	61.6	\$3,345,044	64.8
M&I				
Water customers	149,091	7.5	715,850	13.9
Commercial power				
Power customers	348,778	17.5	795,881	15.4
State share of				
San Luis Unit	184,456	9.3	187,836	3.6
Deferred use				
Power customers	81,965	4.1	99,425	1.9
Other				
Local interest	-	-	17,174	0.4
Total	\$1,992,826	100.0	\$5,161,210	100.0

<sup>a</sup>Assumes completion of all authorized CVP facilities.

To recover \$1.378 billion in costs allocated to irrigation (\$1.229 billion) and M&I water supply (\$149 million), the Bureau has entered into 298 contracts with water customers. Twenty are "repayment contracts" for repayment of costs associated with distribution facilities built expressly for individual customers. Customers generally pay for distribution facilities through annual installments. The rest are "water service contracts" for repayment of costs associated with general water service facilities. Customers pay for water service facilities through water rates per acre-foot of water contracted for or delivered.

As of September 30, 1983, about \$274 million of the total \$1.378 billion allocated to irrigation and M&I had been spent on distribution facilities. The rest, \$1.104 billion, was spent on water service facilities, \$960 million was allocated to irrigation and \$144 million was allocated to M&I. The Bureau has estimated that \$113 million will be beyond the irrigation customers' ability to pay for existing water service facilities. This cost, and the \$82 million allocated to deferred use, are scheduled to be repaid by commercial power customers.

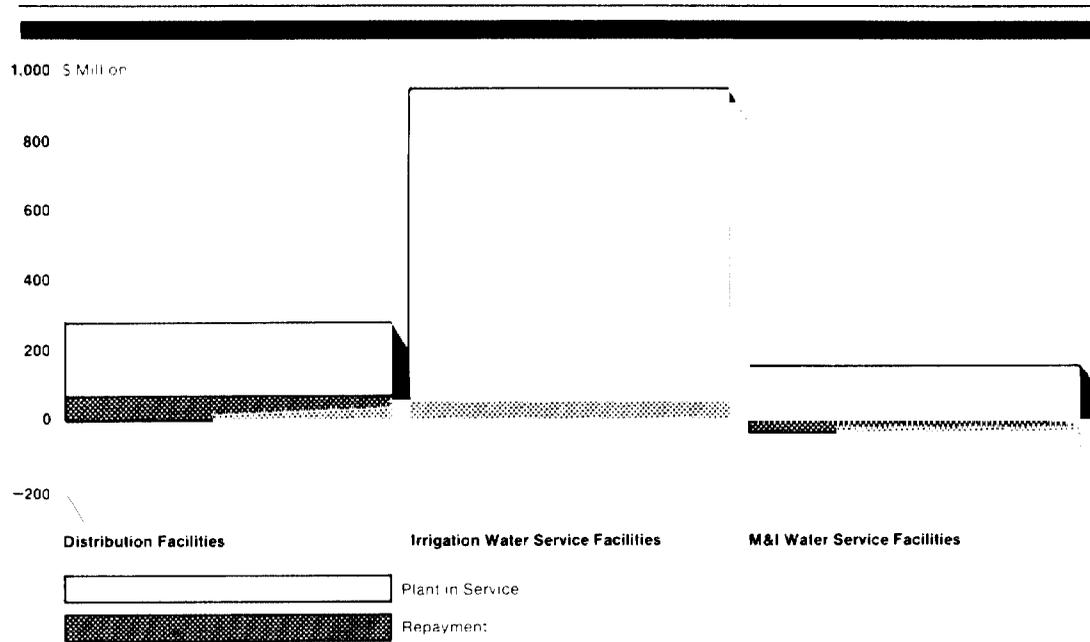
Customers with repayment contracts are generally responsible for funding and performing the operation, maintenance, and replacement of the distribution facilities built for them. The Bureau is generally responsible for OM&R of CVP's major water service facilities. The Congress annually appropriates federal funds for OM&R which are to be repaid through CVP customers' water rates. These OM&R expenses are currently running at about \$25 million per year.

As of September 30, 1984, irrigation and municipal and industrial water customers had repaid a net of \$75.4 million of the \$1.378 billion cost of CVP facilities that were placed in service between 1941 and 1983. By September 30, 1984, the Bureau had recovered \$54.2 million toward repayment of distribution facilities covered by repayment contracts and \$46.9 million toward repayment of irrigation water service facilities. Through September 30, 1984, M&I water service had accumulated a deficit of \$25.7 million. Although M&I water service revenues have been sufficient to cover annual OM&R expenses, they have been insufficient to cover annual interest repayment requirements. Also, it should be noted that between 1982 and 1984, irrigation OM&R expenses exceeded water service revenues by \$6.6 million.

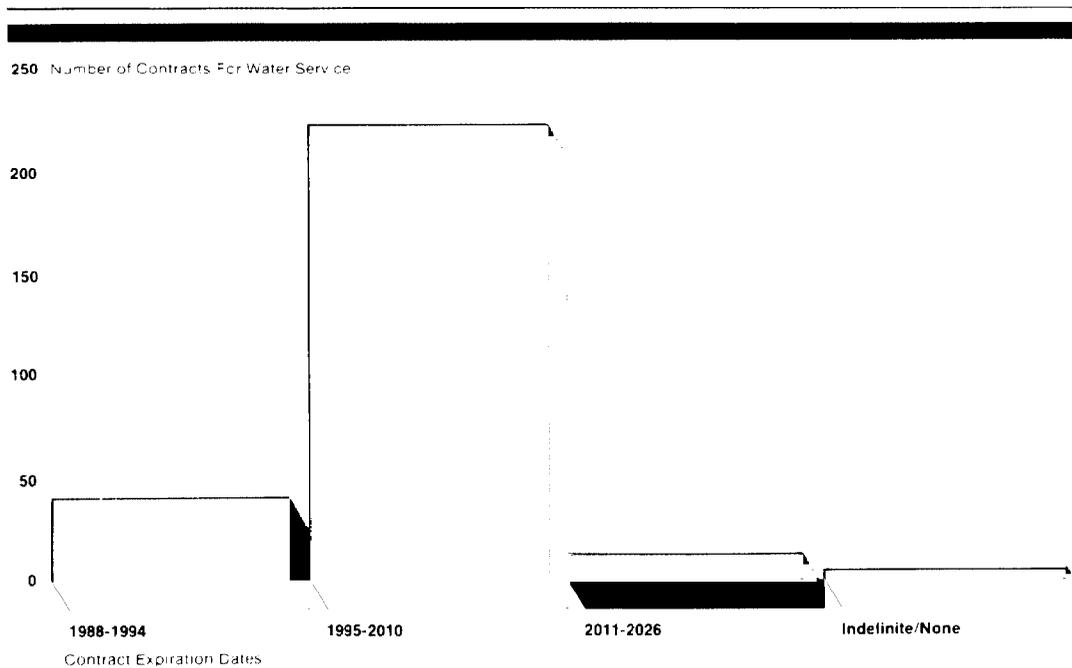
This repayment record is expected to continue for several years. It is primarily due to water service contracts that have long-term, fixed rates or limited adjustment potential and do not start expiring until the 1990's.

Existing irrigation water service rates range from \$2 to \$8 per acre-foot. Existing M&I water service rates range from \$9 to \$85 per acre-foot. For the most part, these rates are fixed by long-term contracts, the majority of which will expire between 1995 and 2010.

**Figure II: 2**  
**Status of Irrigation and M&I Repayment**  
 (As of September 30, 1984)  
**Central Valley Project**



**Figure II: 3**  
**Number of Contracts for**  
**Water Service**  
**Central Valley Project**



EVOLUTION OF PROPOSED  
RATE-SETTING POLICY

CVP has never had a comprehensive water service rate-setting policy approved by the Secretary of the Interior. In recent years, several events have emphasized the need for an approved policy and have shaped the development of the current proposals. In 1977 and 1978, the Interior Department's Inspector General (IG) reviewed CVP's financial condition and evaluated policies establishing water rates. The resulting reports<sup>3</sup> identified problems in achieving repayment of all reimbursable costs. They specifically identified several Bureau practices in irrigation and M&I water marketing activities as contributing to these problems:

- The repayment period was extended each time that a new facility was placed in service (rolling repayment).
- Most contracts were long term and had rates that were fixed (long-term rates).
- Irrigators' water rates were based on estimates of their payment capacity (ability to pay).
- Interest applied to M&I operating deficits did not reflect the actual cost of financing such deficits (interest on deficits).

In addition to the above issues, the IG raised an issue regarding facilities that were being constructed exclusively for specific customers. The issue was, who will be required to pay for isolated or out-of-basin facilities such as Foresthill Divide and San Felipe: the exclusive beneficiaries or all CVP customers?

The Bureau implemented an interim water service rate-setting policy in 1981. In response to public input, continued IG criticism, and the 1982 Reclamation Reform Act, which established some new irrigation repayment requirements, the Bureau reanalyzed and revised this policy.

---

<sup>3</sup>Department of the Interior, Office of Audit and Investigation, Review of Central Valley Project, Bureau of Reclamation, January 1978, LW-LBR-6-77; Department of the Interior, Office of Inspector General, Review of Municipal and Industrial Water Activities, Central Valley Project, Bureau of Reclamation, September 1979, LW-LBR-1-78.

The Bureau released the resulting proposed policy as two separate documents. The irrigation policy proposal was issued for public comment in April 1984 and the M&I policy proposal in October 1984. The Bureau revised the irrigation proposal in response to comments and, in May 1985, submitted five rate-setting options for the Commissioner's review. Revision of the M&I policy proposal began in late May, and it is scheduled to be submitted for the Commissioner's review in December 1985.

#### IRRIGATION RATE-SETTING OPTIONS

Although the April 1984 policy proposal identified three rate-setting options, five options were eventually submitted to the Commissioner. Bureau regional officials feel these options are the most viable for repayment of CVP water service facilities within the established 50-year repayment period ending in 2030. Each option bases rates on the cost of service. If, at contract renegotiation time, a customer should assert inability to meet the rate set under the new policy, the customer's ability to pay would be determined. The water rate for that customer would then be established at the cost of service or the customer's ability to pay, whichever is less, but would at least cover OM&R costs. The simplest option--called a postage stamp option--would apply one rate to all customers. The most complex options would result in different rates for each customer. Under the proposed policy, water rates would be reanalyzed every year, and all renegotiated or new water service contracts would provide for annual rate adjustments to keep pace with changes in cost.

#### Option 1 - component method with individual contractor deficits

This was the region's preferred option in the April 1984 proposal. Under the component option, the repayment obligation is made up of six cost components or categories: water marketing, storage, conveyance, conveyance pumping, drainage, and direct pumping. Plant-in-service capital costs and past OM&R expenses for components applicable to each water service customer are totaled to determine the customer's repayment obligation up to that time. Each customer's past payments are then totaled and compared with its repayment obligation. If a customer's payments are greater than past OM&R expenses, the customer receives a credit toward repayment. If a customer's payments are less than past OM&R expenses, the customer is in a deficit repayment position. Each customer's remaining unpaid capital balance is then divided by its expected water deliveries through 2030 to derive its capital portion of the water service rate. The OM&R portion of each customer's water service rate is computed for applicable components by estimating next year's expense and dividing the total by each contractor's expected water deliveries for that year.

Option 2 - postage stamp

Under this option, one rate is calculated and applied to all customers. The rate is computed by determining the capital and OM&R costs that are to be recovered and dividing by the projected acre-feet of water delivered. In this manner, each acre-foot of irrigation water carries the same cost burden, and each customer is charged the same rate per acre-foot of water.

Option 3 - double postage stamp

The double postage stamp divides the costs to be recovered into two categories. The first category includes water-marketing and storage costs. The second includes all other CVP water service costs. If a customer uses only storage facilities, its water rate will consist of the first category only. If a customer uses any other water service, then its rate will consist of both categories.

Option 4 - modified postage stamp  
without individual contractor deficits

This option mixes the component and postage stamp approaches. Some cost categories or components that correspond to the water services provided would be applied to all customers as in the postage stamp option, while other cost categories would be applied to particular customers as in the component option. All customers' past payments are pooled and divided by projected water deliveries, so that each customer receives a share of the total repayment credit or deficit. According to a Bureau regional official, this method was developed mainly in response to water users' comments on the April 1984 irrigation rate-setting proposal.

Option 5 - modified postage  
stamp with deficits

This is the same as option 4 except that it assigns individual deficits and credits to each customer.

Impact on repayment

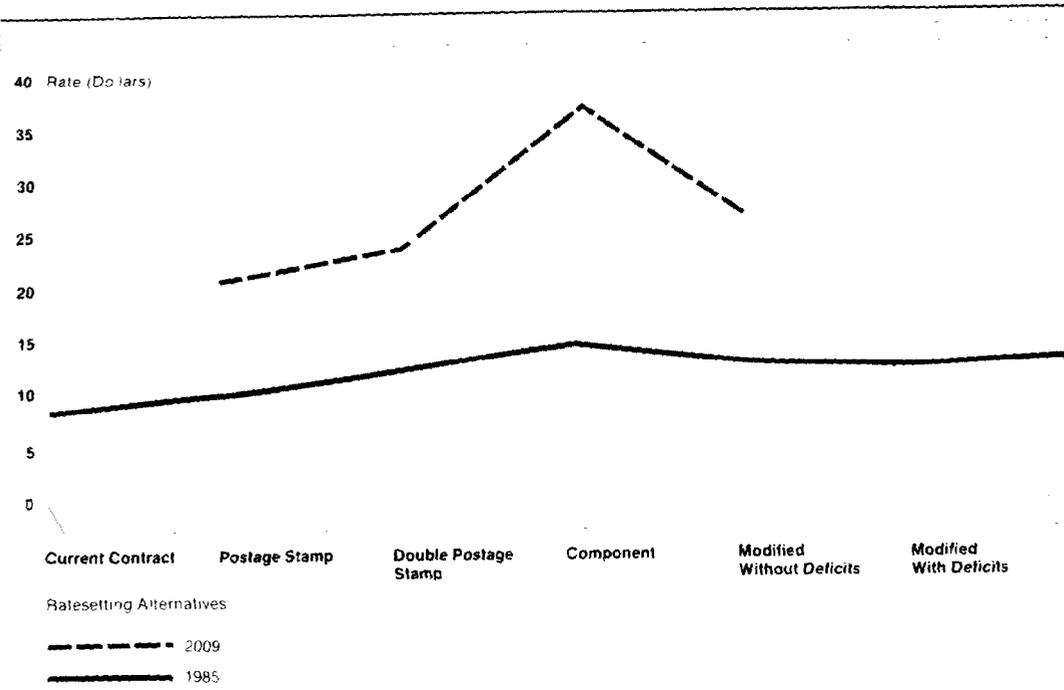
Whichever option is chosen for rate-setting, it will have little impact on rates or project revenues until current contracts expire and are renegotiated, beginning in the 1990's. Revenue flow projections for four of the five options were included as part of the draft proposal forwarded to the Commissioner. The projections assumed existing rates would not be increased until current contracts expire or can be adjusted. They also assumed that OM&R expenses would increase by 4 percent per year.

These projections indicated the component option would provide the poorest revenue flow. The repayment contribution would fall to a balance of \$14 million by 1992. Three options--the modified postage stamp without deficits, double postage stamp, and postage stamp options--provided better revenue flows, indicating that the repayment contribution would fall to about \$20 million in 1991. Revenue flow was not projected for the modified postage stamp with deficits but was assumed to be similar to that for the component option. According to Bureau regional officials, all options produced sufficient revenues to repay the existing plant-in-service by 2030.

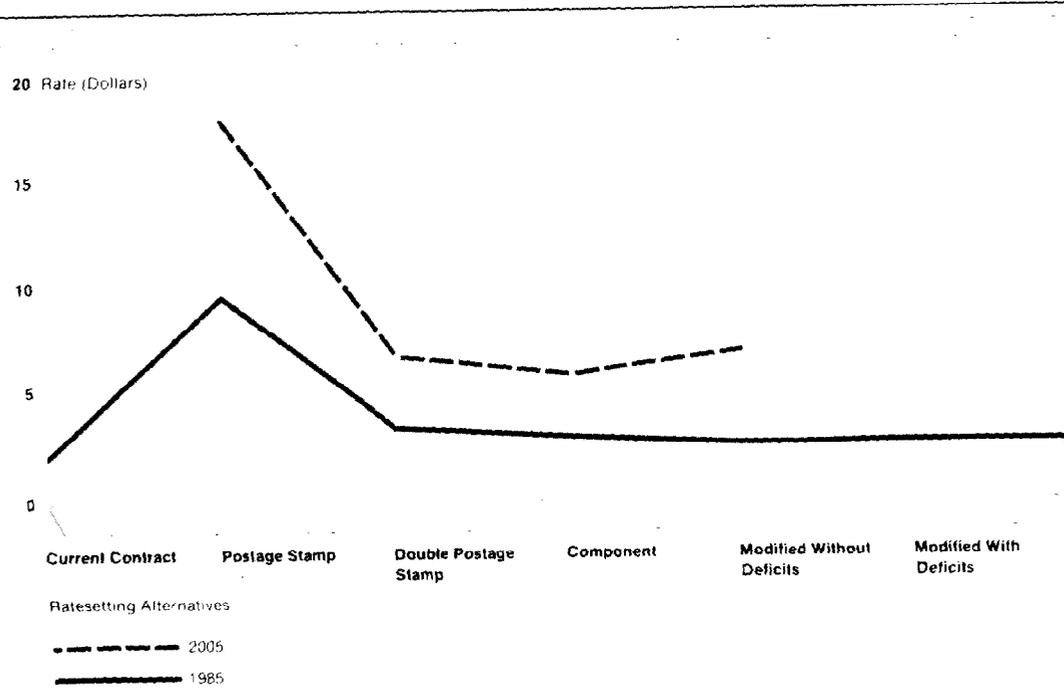
#### Impact on customers

The options would have varying impacts on different types of customers. Customers using all services would tend to pay the highest rates under the component option. Customers using the fewest services would pay the highest rates under the postage stamp option. Figures II.4 and II.5 show projected rates for customers along the San Luis Canal, who use all components, and customers in the Sacramento River Valley, who use storage only. The projected rates are shown for two assumptions: that the contracts would be renegotiated in 1985 or that they would be renegotiated after current contracts expire--2009 for San Luis Canal and 2005 for Sacramento River Valley.

**Figure II: 4**  
**Projected Rates for Irrigation**  
**Customers, San Luis Canal**  
**Central Valley Project**



**Figure II: 5**  
**Projected Rates for Irrigation**  
**Customers, Sacramento River**  
**Central Valley Project**



M&I RATE-SETTING OPTIONS

In October 1984, the Bureau released the CVP M&I Water Rate-setting Policy Proposal for public comment. The rate-setting options presented in the M&I proposal are very similar to those presented in the April 1984 irrigation policy proposal. The M&I proposal had a component option with two variations--a postage stamp option, and a double postage stamp option. The M&I proposal differs from the irrigation proposal because interest is applied to unpaid investment costs and annual operating deficits.

The public comment period for the M&I proposal ran through the end of February 1985. In late May, Bureau regional personnel began preparing a revised M&I rate-setting proposal. To accommodate public comments from water users and conform to the revised irrigation rate-setting proposal, we were told by the Regional Cost and Analysis Branch Chief that a modified postage stamp option will probably be included in the M&I proposal. This same official is preparing the proposal and said that he anticipates having it ready for submission to the Commissioner by December 1985.

Impact on repayment

Bureau personnel have not yet prepared revenue projections to illustrate how repayment will proceed under each option. Nevertheless, it appears that, under any option, deficits are likely to continue for the next several years.

Impact on customers

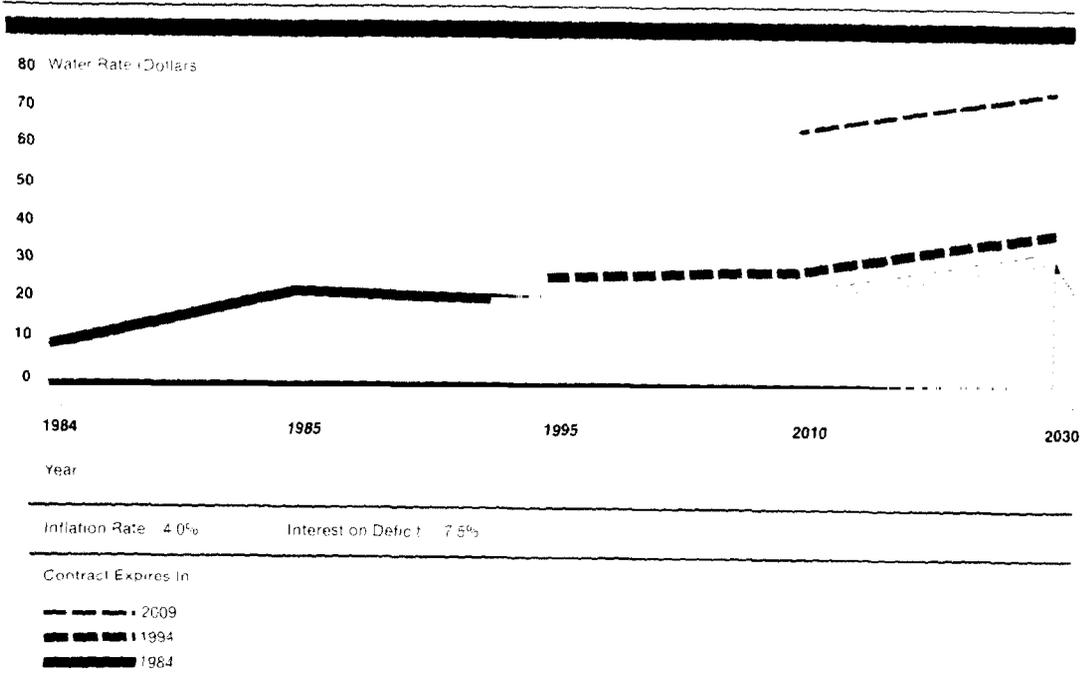
Like the irrigators, those M&I customers that use the most services would tend to have the highest rates under the component option, while those using storage only would probably have the highest rate under the postage stamp option. Under the component option, rates computed for some customers requiring storage only are less than the \$9 per acre-foot they are now typically paying.

Customers whose water rates have been insufficient to cover annual interest obligations and operating expenses will experience sharp increases when their contracts expire if the component rate method is adopted. This increased rate is primarily due to the effect of interest on deficits. One of the public criticisms of the proposed policy is that it does not give individual customers an idea of what their rates would be when their contracts expire.

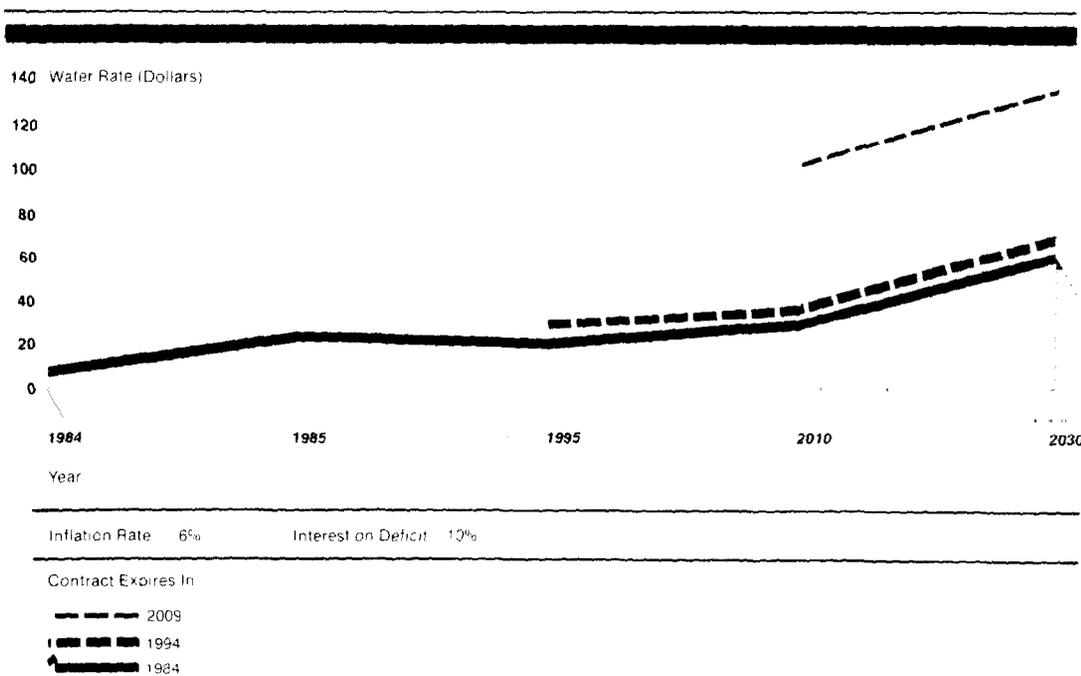
To illustrate the impact that inflation and interest rates could have on M&I customers whose rates have been insufficient to cover costs, we asked the Bureau's Regional Economist to compute future rates for a hypothetical customer. Three contract expiration dates were assumed, to show the hypothetical

customer's rates if he/she renegotiated his/her contract now, 10 years from now, or 25 years from now. Figures II.6 and II.7 depict the results of this study.

**Figure II: 6**  
**Projected Rates for M&I**  
**Water (4% inflation and**  
**7.5% interest)**  
**Central Valley Project**



**Figure II: 7**  
**Projected Rates for M&I**  
**Water (6% inflation and**  
**10% interest)**  
**Central Valley Project**



WATER RATE-SETTING POLICY  
ISSUESRolling repayment

One major difference between the proposed rate-setting policy and past policies is that rolling repayment has been abandoned. No longer will customers' repayment period be extended each time a new facility is added to the CVP. From now on, major new facilities that are completed and placed in service will be repaid within separate 50-year periods.

All facilities already in service will have to be paid off by 2030--50 years after the most recent major facility, New Melones Dam, was placed in service. The IG, in the previously mentioned reports, recommended that each completed facility be removed from rolling repayment and repaid within 50 years after being placed in service. For example, Shasta Dam, placed in service in 1945, would have to be repaid by 1995. The proposed policies do not require that facilities placed in service prior to 1980 be repaid within 50 years.

The effects of not requiring each facility to be repaid within 50 years of completion are that

- unpaid irrigation investments remain outstanding and interest free and
- unpaid M&I investments remain outstanding at low interest rates.

Long-term rates

Until 1970, the Bureau generally executed water service contracts for periods of up to 40 years at fixed rates set long before final costs were known. In the 1970's, new contracts were to be written with rates that could be adjusted every 5 years to reflect updated costs and expenses. However, according to the IG reviews, many of these contracts limited the potential for adjustment, and rates continued to be based on old cost and pricing data.

According to a Bureau Regional Repayment Specialist, the few long-term contracts that have been written in the 1980's have provided for annual rate adjustment to keep pace with changes in costs. Contracts negotiated under the new proposed policies would be adjustable annually to reflect changes in project costs and OM&R expenses.

Ability to pay

The IG, in the previously mentioned 1978 report, cited irrigation water rates on the basis of irrigators' ability to pay as a factor in repayment difficulties. According to Bureau

regional officials, the proposed policy would set rates on the basis of the cost of service and assumes that the irrigators will be able to meet these costs. However, public comments on the April proposal raised concern that CVP irrigation water would be priced without any consideration of the irrigators' ability to pay. Regional officials told us that, if at renegotiation time an irrigator should assert inability to meet the rate set under the new policy, the Region would have to assess that irrigator's payment capacity. The Regional Director indicated to us, however, that he does not expect ability to pay to become a major issue.

The Regional Economist told us that although the region has estimated payment capacity as part of feasibility studies in the 1950's and land classification studies in the 1970's and 1980's, it has never studied each CVP irrigator's ability to pay. The IG found that the various assumptions and estimates that must be made make payment capacity studies somewhat subjective. The regional economist told us that stricter standards for determining ability to pay were needed to avert inconsistent results. The region has not addressed this potential problem and does not expect to perform any ability-to-pay studies in the near future.

#### Full-cost water pricing

The Reclamation Reform Act of 1982 increased the acreage that a farmer could irrigate with interest-free water. Farmers that want to take advantage of the increased acreage provision must agree to start paying their full share of OM&R expenses. Farmers that want to irrigate lands beyond the limitations must agree to pay the full cost for that irrigation water. The act defines full cost as the repayment of all costs allocated to irrigation, including any OM&R deficits funded, with interest from the date of enactment.

The proposed irrigation rate-setting policy sent to the Commissioner cites the need to implement full-cost pricing provisions of the Reclamation Reform Act as one of the primary reasons the proposal should be approved as soon as possible. However, no analysis of full-cost pricing under the various rate-setting options was included. It appears that the Secretary could choose one rate option for general water service and another to satisfy full-cost pricing for water sold under the Reclamation Reform Act. Meanwhile, to conform to the provisions of the Reclamation Reform Act, the region is using the component method plus interest as an interim full-cost water rate.

#### Interest on deficits

The IG, in the 1979 audit report concerning M&I water activities, criticized the Bureau for using below-market interest rates to finance M&I annual operating deficits. The IG

recommended that interest costs on annual operating deficits be based on interest rates the Treasury pays to finance such deficits.

The Bureau's October 1984 M&I rate-setting policy proposal document explains how interest would be applied to annual operating deficits incurred through 1982. Interest on deficits incurred prior to 1977 is based on a weighted average of interest rates applicable to CVP capital investments (about 2.5 percent). From 1977 through 1982, interest on annual deficits is computed based on Treasury rates<sup>4</sup> but limited to a 1/2-percent upward adjustment each year. The deficit interest rates used by the Bureau for those years range from 7 percent for 1977 to 9 percent for 1982.

According to the Regional Cost and Analysis Branch Chief, who is responsible for preparing the revised M&I rate-setting proposal, interest costs on the 1983 operating deficit would be computed using the same procedure as used for 1982. Beginning in 1984, however, interest costs on annual operating deficits would be based on the Treasury rate, without a limit on the adjustment. This practice would conform to current Bureau wide instructions and meet the IG's recommendation for future years.

The Regional Director told us that various interest rates may be explored or analyzed as part of the M&I policy revision process. To preserve the Secretary's discretion, the Regional Director would not commit himself to a specific interest criterion. While he did not rule out alternatives, the Regional Director said the region would first consider existing Bureau instructions.

#### REPAYMENT OF FACILITIES SERVING ISOLATED OR OUT-OF-BASIN CUSTOMERS

When the IG was auditing M&I water activities in 1978, two facilities--Foresthill Divide and San Felipe--were being constructed exclusively for isolated or out-of-basin water customers. Although these facilities were to be considered financially as parts of the CVP, neither would contribute water supply benefits to other CVP water customers. The IG concluded the water service contract rates that had been negotiated for repayment of the facilities would be insufficient to repay the estimated costs to complete the facilities.

The IG found that the Bureau had no clear policy indicating who would be responsible for repaying the facilities. The IG recommended that when the Bureau develops a rate-setting policy, it should determine who is going to pay for these facilities.

---

<sup>4</sup>The Treasury rate used by the Bureau is the average yield rate during the preceding fiscal year on interest-bearing, marketable securities which have 15 or more years remaining to maturity.

The IG was concerned that the isolated customers might be unwilling to pay rates adequate to cover the cost of these facilities. He further recommended that Interior advise all affected customers of the amount involved and how it will be repaid.

The latest proposal for M&I repayment did not set a uniform policy for facilities built solely to serve certain customers. We analyzed proposals for Foresthill and San Felipe to determine their impact.

#### Foresthill Divide

The Foresthill facility was placed in service in 1982. The capital costs of Foresthill, \$5 million for irrigation and \$49 million for M&I water, were included in the proposed rate-setting policies. The facility serves one customer. The customer's existing water service rates, which were established before the facility was completed, are \$2.50 per acre-foot for irrigation and \$85 for M&I water. If this customer were charged for the entire cost of Foresthill, its rates per acre-foot would need to be about \$450 for irrigation and about \$1,625 for M&I water service.

In determining the customer's rates under the proposed component options, the region used one method for irrigation and another for M&I. Under the irrigation proposal, the cost of Foresthill was pooled with all other CVP facilities, resulting in a rate of \$4.25 per acre-foot. Under the M&I proposal, the customer's existing rate of \$85 was used to determine its share of capital costs to be repaid (about \$3 million). The majority of Foresthill's costs (\$46 million of the \$49 million) were pooled with all other CVP facilities to be repaid by all other M&I customers. This hybrid rate-setting method was not explained in the October 1984 M&I proposal.

#### San Felipe

The current rate-setting proposals do not analyze the charges necessary to repay San Felipe, which will be placed in service in 1987. However, according to the Regional Cost and Analysis Branch Chief, the Bureau intends to charge San Felipe's customers for its full capital costs, estimated at \$105 million for irrigation and \$214 million for M&I water. This intention was discussed in the irrigation proposal that was submitted to the Commissioner in May 1985.

When San Felipe begins delivering water, its two customers will pay \$16.50 per acre-foot for irrigation water and \$61 for M&I water. The M&I rate includes \$43 for San Felipe repayment and \$18 for repayment of overall CVP costs. These rates were set by contracts executed in the late 1970's. The irrigation rate cannot be adjusted for capital cost increases until 1996. The

M&I rate for repayment of San Felipe cannot be adjusted for capital cost increases until 2008 (20 years after the first deliveries of M&I water).

We performed a rough analysis of San Felipe's impact on its customers, assuming they would fully repay San Felipe's costs by 2037 (50 years after it is placed in service). If the irrigation rate were adjusted in 1996, we estimate that irrigation customers would have to pay about \$45 per acre-foot. If the M&I rate were adjusted in 2008, M&I customers would have to pay about \$200 to \$275, assuming interest rates applied to M&I deficits of 7.5 percent to 10 percent.<sup>5</sup> To these amounts would be added a share of overall CVP costs. Data were not readily available to compute what these costs would be in those years.

#### CONTINGENCIES MAY AFFECT REPAYMENT

Several contingencies whose outcome is unknown were not discussed in the proposal but could affect repayment. Although we did not estimate their financial impact, we feel these issues warrant mentioning.

#### Disputed contract

Irrigation revenues could increase appreciably and M&I revenues could increase somewhat if an ongoing water service contract dispute between the United States and a major water customer is decided in the government's favor. Otherwise, the customer's water service rates would remain where they are now until 2008. According to a regional Interior solicitor, the Bureau is negotiating a settlement with the customer at this time.

#### Contracts for additional water

Irrigation and M&I revenues could be increased if the Bureau is able to sell additional water supplies. Until recently, this possibility seemed remote because of a long-standing stalemate

---

<sup>5</sup>The existing rate of \$43 is insufficient to cover the annual interest requirements on the \$214 million capital investment. If the resulting annual operating deficits accrued interest at 7.5 percent or 10 percent, the accumulated deficits at the end of 2007 would be \$166 million or \$224 million, respectively. The M&I customers would then have only 30 years to repay (with interest) the original capital investment plus the accumulated deficit.

between the state of California and the Bureau concerning how the State Water Project and CVP would be operated to meet water quality needs. Recently, however, the Bureau and state appear to have settled their differences and have reached agreement subject to an environmental impact statement. If the proposed operating agreement is authorized by the Congress and approved by the Secretary of the Interior, 500,000 to 1 million acre-feet of additional CVP water supplies could become available for sale. But additional environmental, institutional, and logistical issues would have to be dealt with before this amount of water could actually be sold.

Impact of completion of  
Auburn-Folsom South Unit

If the Auburn-Folsom South Unit is completed as currently designed, it would add \$1.6 billion to the water supply costs of the CVP, more than the total spent to date. However, Auburn will add only about 7 percent more firm water supply to the CVP. In case Auburn is not completed, who would absorb the \$240 million in sunk costs--existing CVP beneficiaries, federal taxpayers, potential nonfederal developers of the dam, or a combination of these?

Impact of drainage contamination

A problem currently receiving attention is pollution from contaminated CVP irrigation drainage in the San Joaquin Valley. To the extent the federal government financially participates in cleaning up this pollution and finding a long-term solution, who will be required to repay these costs? Further, to the extent current irrigation supplies may need to be reduced because drainage problems cannot be economically or environmentally resolved, who pays for existing CVP facilities that deliver this water?



32230

**AN EQUAL OPPORTUNITY EMPLOYER**

UNITED STATES  
GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

---

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE \$300

**BULK RATE  
POSTAGE & FEES PAID  
GAO  
PERMIT No. G100**