



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

7-2

June 12, 1998

To: Board of Directors (Budget and Finance Committee--Action)
(Engineering and Operations Committee--Action)

From: General Manager

Submitted by: Gary M. Snyder
Chief Engineer

Subject: Appropriate \$456,000 for the Replacement of the Cabazon Radial Gate Facility

Reference: Appropriation No. 15320

RECOMMENDATION(S)

To prepare environmental documentation and perform preliminary and final design activities for the replacement of the Cabazon Radial Gates Facility, it is recommended that your Board:

1. Appropriate \$456,000 of budgeted funds to finance all costs for work performed in advance of award of a construction contract, and
2. Authorize the General Manager to have all work performed in advance of award of a construction contract.

EXECUTIVE SUMMARY

The Cabazon Radial Gate Facility (facility) was designed to protect the Colorado River Aqueduct (CRA) from becoming overpressurized in the event that the flow of water in the aqueduct downstream of the facility becomes blocked. The facility was constructed more than 60 years ago, and the motors and controls for the gates are now unreliable and continue to be dependent on electrical power, vulnerable to disruption. To provide adequate protection for the CRA, it is proposed to replace the facility with a weir structure (spillway). The spillway is a "passive" system and does not require electrical power, mechanical equipment, or an operator to activate the system. The total program estimated cost is \$1,700,000.

JUSTIFICATION

Under existing conditions, should the flow of water in the CRA become partially or fully blocked downstream of the facility, the proposed spillway will automatically divert the flow in a controlled manner to protect the aqueduct.

ALTERNATIVE(S) TO PROPOSED ACTION

Rehabilitate the Existing Radial Gates:

An alternative to constructing a spillway is to rehabilitate the existing gates and their operating systems. This would require new motors, a control system, bearings, and other repairs. The estimated cost for rehabilitating the gates is \$650,000. Although this alternative is less expensive, it would not provide adequate protection of the CRA, because it would be dependent on a reliable source of electricity and an operator to activate the gate motors.

FUNDING REQUEST

Program Name: Skinner Branch - Cabazon Radial Gate Facility Improvements			
Source of Funds: Pay -As-You-Go Fund			
Appropriation No.: 15320	Board Action No.: 1	FY 98/99 Budget: \$1,105,500	
Requested Amount: \$456,000	Capital Program No.: 98915 - A		
Total Appropriated Amount: \$456,000	Capital Program Page No.: E - 10		
Total Program Estimate: \$1,700,000	Program Category: Asset/System Integrity		

ACTIONS AND MILESTONES

- Completed Study May 1997
- Complete Preliminary Design Phase December 1998
- Complete Final Design Phase and Issue Request for Bids, March 1999
- Award Contract for Construction July 1999
- Shutdown of CRA January 2000
- Complete Construction March 2000

CEQA COMPLIANCE / ENVIRONMENTAL DOCUMENTATION

This project is subject to the provisions of the California Environmental Quality Act (CEQA). Appropriate environmental documentation will be prepared for your Board's review and approval in advance of any award of a contract for construction.

DETAILED REPORT

In 1997, a study was undertaken which recommended improvements to the Cabazon Radial Gate Facility. The facility serves a vital function, providing protection of the CRA in the event of a partial or full blockage of the aqueduct downstream of the facility. Blockage would likely be caused by an earthquake along one or more faults in the area, including several which cross the downstream tunnel. During such an emergency, the facility was designed to divert flow from the CRA into the San Gorgonio Wash, which flows into the Whitewater River. If the facility does not function properly, water would "backup" the aqueduct, which is constructed of unreinforced concrete pipe, and over-pressurize the conduit, causing a rupture and uncontrolled spill. This would occur if the aqueduct gate did not close and the diversion gate open quickly. The radial gates require both electrical power and an operator to activate them. Electrical power is available at the facility; however, its reliability, especially after an earthquake, is questionable. Because of these reasons, it is recommended that the gates be replaced with a spillway to provide adequate protection of the aqueduct in the area of the facility. The spillway is a passive system that does not require either an operator, mechanical equipment and control systems or electric power, and would immediately divert flow safely when the water reached a predetermined level.

The total estimated cost of the project is \$1,700,000. A breakdown of all costs is shown in the Financial Statement (Attachment A).

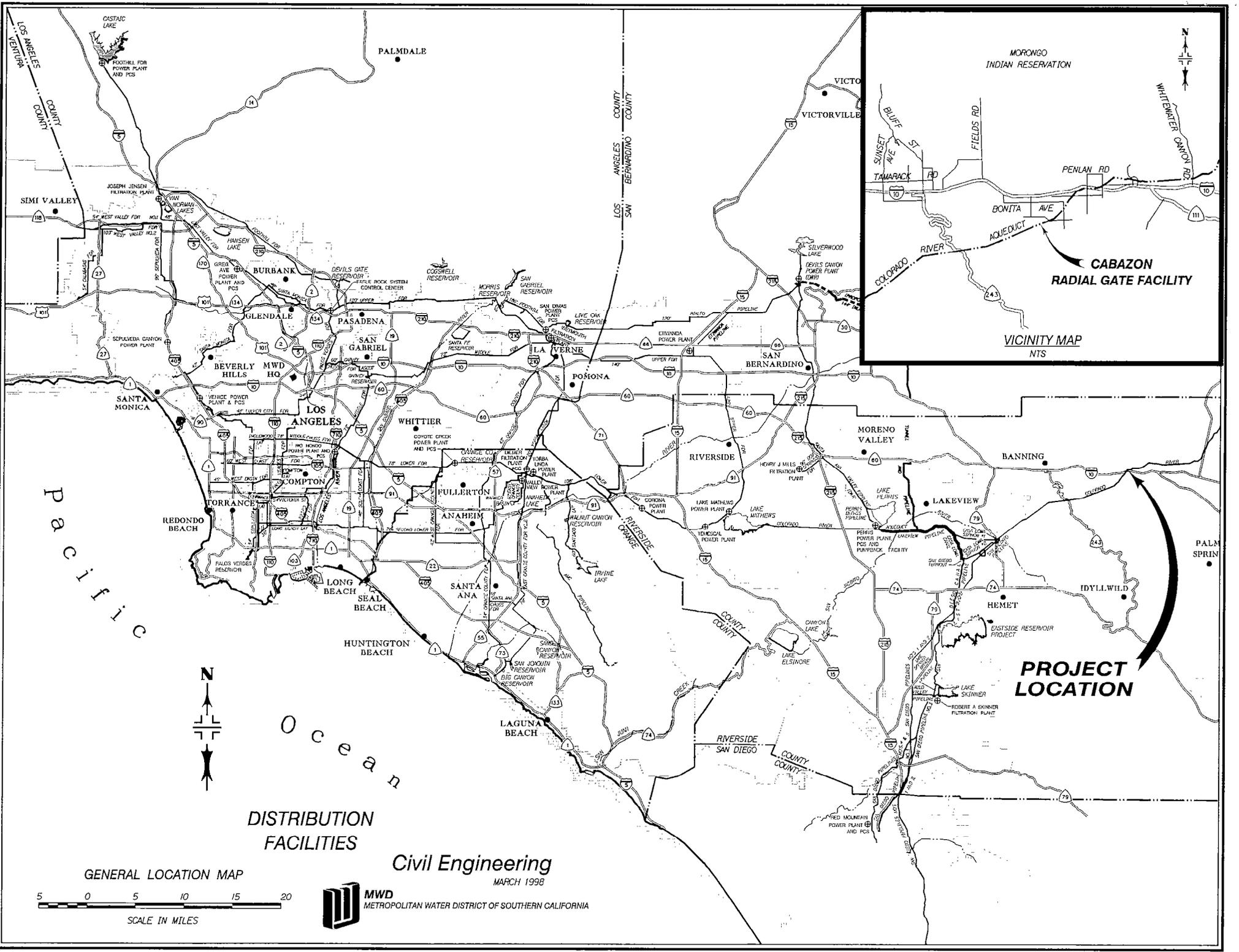
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Attachment(s)

Attachment A to
 FINANCIAL STATEMENT
 (Program No. 98915-A)

The breakdown of the total estimated cost for preliminary design and final design is shown below:

	<u>Cost Estimate</u>
Labor:	
Engineering Study	\$ 46,000
Environmental Study	10,000
Preliminary Design	62,300
Final Design	73,700
Project Management	<u>11,200</u>
Subtotal Labor	\$ 203,200
Material and Supplies	\$ 1,000
Incidental Expenses	2,000
Professional/Technical (Environmental)	95,000
Operating Equipment	1,000
Administrative Overhead	114,000
Contingencies	<u>39,800</u>
Total	<u>\$ 456,000</u>
Projected Expenditures of Funds:	
Through Fiscal Year 1997/98	80,000
Fiscal Year 1998/99	336,200
Contingencies 1999/00	<u>39,800</u>
Total	<u>\$ 456,000</u>
Source of Funds: Pay-As-You-Go Fund	
Capital Program for Fiscal Year 1998/99	
Total Program	<u>\$1,700,000</u>
Program Estimate for FY 1998/99	<u>\$1,105,500</u>



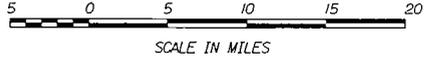
Pacific

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Civil Engineering

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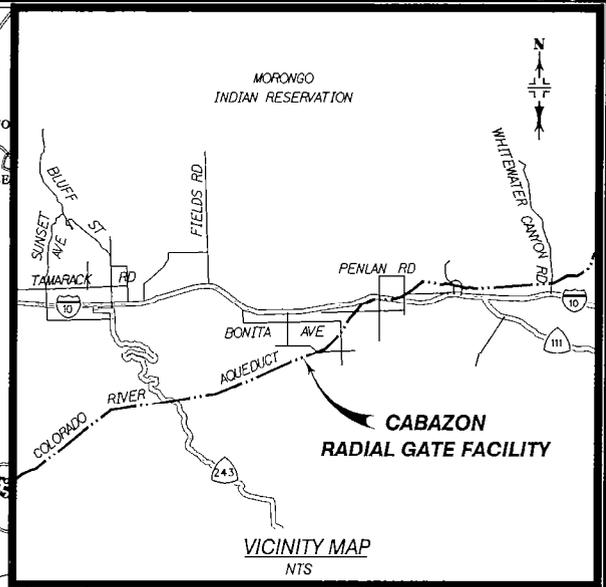
GENERAL LOCATION MAP



SCALE IN MILES



MWD METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



VICINITY MAP
NTS

CABAZON
RADIAL GATE FACILITY

PROJECT
LOCATION