



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

JUL - 9 1996

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Dawn Plin
EXECUTIVE SECRETARY

June 18, 1996

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

From: General Manager *W. [Signature]*

Submitted by: Gary M. Snyder
Chief Engineer *Gary Snyder*

Subject: Appropriation No. 727 for \$505,000 for Repairs to the Joseph Jensen Filtration Plant Finished Water Reservoir No. 2 Lining and Drainage System

RECOMMENDATIONS

It is recommended that the General Manager be authorized to have all work performed in advance of award of a construction contract for repair of the Joseph Jensen Filtration Plant Finished Water Reservoir No. 2.

It is also recommended that your Board approve Appropriation No. 727 in the amount of \$505,000 from the Pay-As-You-Go-Fund to finance all estimated costs in advance of award of a construction contract for repair of the Joseph Jensen Filtration Plant Finished Water Reservoir No. 2.

EXECUTIVE SUMMARY

Approval of this recommendation will appropriate funds and authorize completion of all work in advance of award of contract for repair to Joseph Jensen Filtration Plant Finished Water Reservoir No. 2 (Reservoir No. 2). The total estimated cost of the project is \$2,540,000 and Metropolitan is seeking reimbursement for costs from the Federal Emergency Management Agency (FEMA).

CAPITAL FUNDING REQUEST

Project Name: Repairs to Joseph Jensen Filtration Plant Finished Water Reservoir No. 2	
Appropriation No.: 727	Funding Request: New Amount: \$505,000
Source of Funds: Pay-As-You-Go	
FY 96-97 Budget: No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> @ \$	Capital Program: Page No. Reference:
Project Justification and Type: (check all applicable)	
<input checked="" type="checkbox"/> Meet Water Demands	<input type="checkbox"/> New Facility <input checked="" type="checkbox"/> Replacement
<input checked="" type="checkbox"/> Mandated By Law	<input checked="" type="checkbox"/> Improvement <input type="checkbox"/> Expansion
<input checked="" type="checkbox"/> Asset Protection/Risk Mgt.	
<input type="checkbox"/> Cost Avoidance	
<input type="checkbox"/> Other _____	

DETAILED REPORT

Expansion of the Joseph Jensen Filtration Plant, which started in 1991, included the construction of Reservoir No. 2. The reservoir, which is located near the southeastern end of the site, is approximately 650 feet by 500 feet wide and 50 feet deep, with a three-to-one side slope and a capacity of 50 million gallons. The reservoir was constructed with an asphalt lining system, which consists of a porous asphalt drainage course between two hydraulic asphalt concrete layers of very low permeability, placed against a compacted foundation of select fill material.

Construction of the reservoir was near completion when the reservoir suffered significant damage to its lining system from the Northridge Earthquake. In addition to other peripheral damages, there were approximately 880 lineal feet of cracks in the asphalt lining, which were subsequently repaired by injecting sealant used successfully in similar applications at other Metropolitan facilities. The cost of these repairs was reimbursed by FEMA.

After completing the repairs, a floating hypalon cover was installed and the reservoir filled with water. Subsequently, leakage through the asphalt lining into the drainage system began to occur. An underwater investigation by a Metropolitan dive team discovered new cracks in the pavement immediately adjacent to many of the sealant repairs. Additional damage to the asphalt lining in four other areas, due to settlement of the foundation materials, was also discovered.

To complete the on-site investigation into why the damage occurred, it was necessary to remove portions of the floating cover and conduct core drilling and geotechnical investigations. This effort was followed by soil and asphalt analyses, permeability tests and video inspections of the reservoir drain lines.

Metropolitan staff and a consultant concluded that all of the new cracks and subsequent damage following the sealant repairs resulted from a combination of aftershocks from the Northridge Earthquake and ongoing earth movement in the area. This post-earthquake stressing of the asphalt lining caused the pavement to again stretch and fail in tension. The new cracks allowed an excessive amount of treated water that seeped from the reservoir into the ground to enter the drainage system. The migrating seepage water, drawn through a pump system, eroded the supporting foundation material causing the pavement to settle in several areas.

It is proposed to repair the damaged sections of the pavement and make several minor modifications to the lining drains and monitoring systems. Cracked and caved-in areas of the asphalt would be removed to full depth with a bench-type excavation and materials replaced in a manner that will best protect liner integrity. The reservoir would then be filled and hydrotested. Depending upon the "mendability" of the hypalon materials, it is proposed to reinstall the present floating cover. Should field tests indicate that reseaming the existing cover is not a reliable option, a new cover would be recommended. The project estimate of \$2,540,000 includes budget for the more expensive replacement of the existing cover should that prove necessary.

Metropolitan is currently seeking to be reimbursed by FEMA, although the exact percentage of reimbursement is unknown at this time. Construction is anticipated to be completed by mid-1997.

BENEFIT

Completing repairs to the reservoir lining system will allow the reservoir to be placed back into service by preventing potential cross connections with the surrounding ground water and leakage from undermining the structural integrity of the asphalt pavement.

<u>PROJECT PLAN:</u> Repairs to Joseph Jensen Filtration Plant Finish Water Reservoir No. 2						
PHASE	ESTIMATED COST	% COMPLETE	COST THRU FY 1996	FY 1995/96	FY 1996/97	FY 1997/98
Investigation	\$ 160,000	100%	\$160,000	██████		
Study	100,000	100%	100,000	██████		
Final Design	190,000	%	\$		████	
Advertise-NTP	20,000	%	\$		██	
Construction	1,740,000	%	\$		██████	
Testing/As-Built	30,000		\$			█
Contingency	300,000					
TOTAL	\$2,540,000		\$260,000			

ALTERNATIVES TO PROPOSED ACTION

The alternative to the proposed repairs would be to continue operation of the Joseph Jensen Filtration Plant using only Finished Water Reservoir No. 1, which would not allow for adequate detention time to meet peak demands. Also, it is anticipated that Reservoir No. 1 will have to be taken out of service to complete scheduled replacement of its exterior waterproof membrane.

CEQA COMPLIANCE / ENVIRONMENTAL DOCUMENTATION

This project is categorically exempt under the provisions of the California Environmental Quality Act as a Class I Project consisting of the repair of an existing facility with no change or expansion of use (CEQA Guidelines Section 15301).

Attachment

FINANCIAL STATEMENT

(Program No. 5-7270-31)

The total estimated cost breakdown is as follows:

	<u>Cost Estimate</u>
Labor:	
Engineering	\$ 190,000
Operations	63,000
Planning/Environmental	<u>1,000</u>
Total Labor	\$254,000
Materials	\$ 1,000
Incidental Expenses	3,000
Professional & Technical	59,000
Operating Equipment	9,000
Administrative Overhead	139,000
Contingency	<u>40,000</u>
Total	\$505,000
Projected Expenditure of Funds:	
Through Fiscal Year 1995/96	\$ 260,000
Fiscal Year 1996/97	2,245,000
Fiscal Year 1997/98	<u>35,000</u>
Total	\$ 2,540,000
Estimated Funds Required:	
Initial	\$ 505,000
Additional	<u>2,035,000</u>
Total	\$ 2,540,000

Source of Funds: Pay-As-You-Go Fund

Capital Program for Fiscal Year 1996/97:

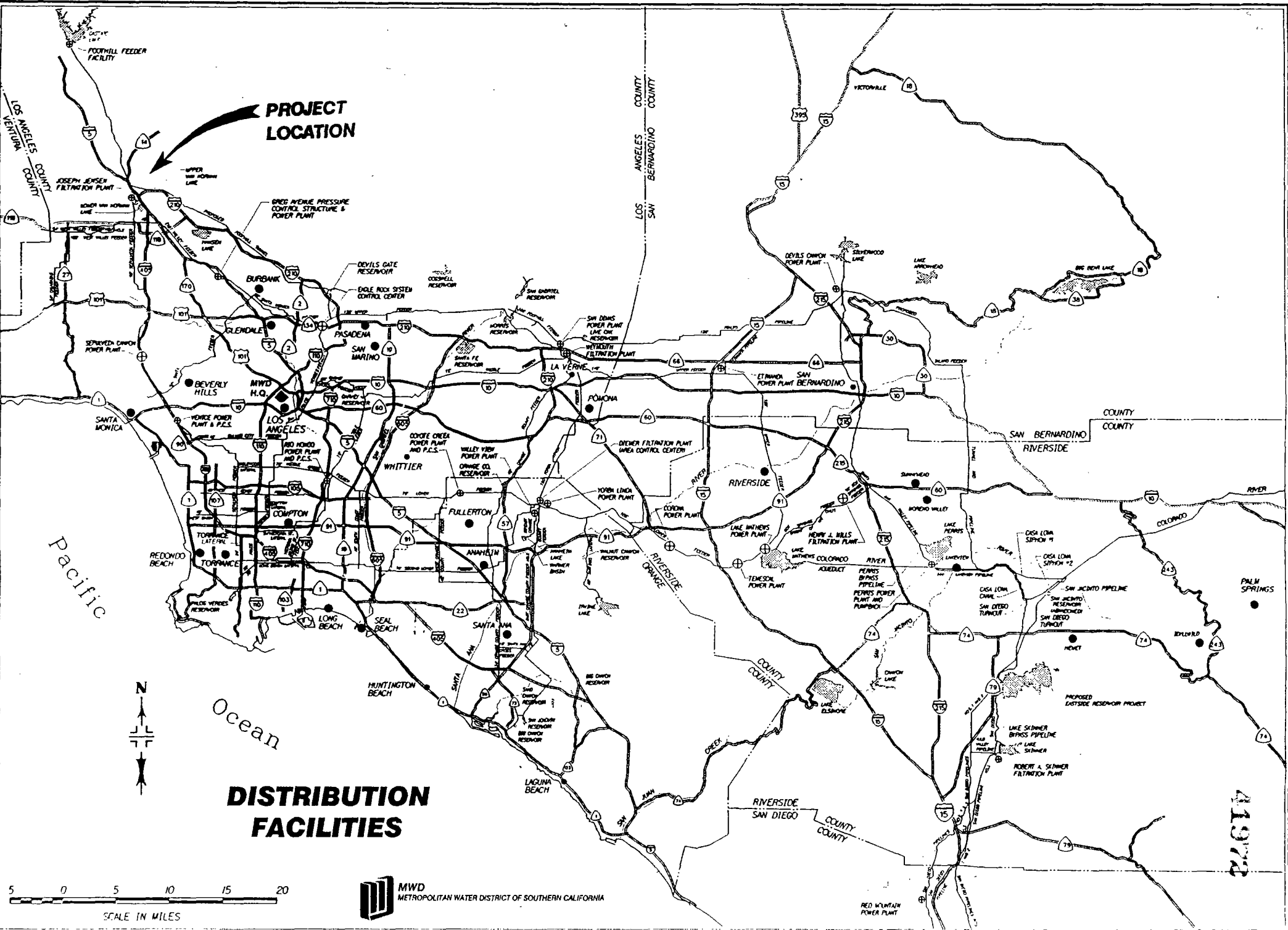
This project was not included in the 1996/97 Capital Program because of the potential that a 90% reimbursement from the Federal Emergency Management Agency would have kept Metropolitan's costs within the General Manager's authority of \$250,000. However, lack of confirmation of the actual amount to be reimbursed makes it prudent to add this project as a non-budgeted project.

Class: One--Projects directly related to the delivery of water, required for health and safety or mandated by governmental requirements.

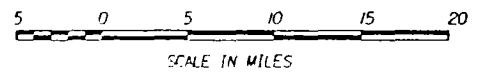
Project Benefit:

Completion of this project will permit normal operation of Finished Water Reservoir No. 2 and allow Finished Water Reservoir No. 1 to be removed from service for repairs.

PROJECT LOCATION



DISTRIBUTION FACILITIES



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