MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- **Board of Directors**
  Engineering and Operations Committee

December 14, 1999 Board Meeting

9-4

Subject

Transfer of Metropolitan's Interests in San Joaquin Reservoir.

Description

Transfer Metropolitan's trustee function and ownership share in San Joaquin Reservoir to the Irvine Ranch Water District (IRWD). The reservoir has been out of service since a major landslide in 1995, rendering it unusable for Metropolitan's purpose to regulate flows and meet peak demands. IRWD plans to use the reservoir as a part of its recycled water system and has actively sought to acquire most, if not all, of the storage capacity. Staff presents to the board the following alternatives regarding the transfer. Please see **Attachment 1**; which provides background information on the San Joaquin Reservoir, Metropolitan's involvement and the associated financial and contractual obligations.

Policy

Contractual commitments associated with the existing San Joaquin Reservoir Trust Storage Agreement of July 1, 1980 (as amended), and the Memorandum of Understanding (MOU) dated September 19, 1990.

Board Options/Fiscal Impacts

Option #1

Do nothing. The reservoir would remain out of service.

Fiscal Impact: $100,000 - $200,000 annually for continuing maintenance purposes, based on costs since 1995; plus potential additional costs associated with further landslides, flooding, etc. Metropolitan's share of all of these costs would be 9.8 percent.

Option #2

The reservoir is currently out of service and will require considerable improvements to return it to a serviceable condition. Proceed with the original purposes of the 1990 MOU; repair and put the reservoir back into service.

Fiscal Impact: Metropolitan's share would be 50 percent of $1.2 million for the annual cost to operate the reservoir for drinking water storage; plus $32 million (estimated repair and improvement project costs), per the 1990 MOU.

Option #3

Metropolitan would transfer to the Irvine Ranch Water District its trustee function under the 1980 Trust Storage Agreement and would sell to Irvine Ranch Water District its 300-acre-foot storage interest in San Joaquin Reservoir for $100 per acre-foot. Metropolitan would no longer be responsible for operation and maintenance of the reservoir. Furthermore, the potential financial and contractual commitments of Metropolitan, as represented by Option #2, would be voided.

Fiscal Impact: Realize $30,000 benefit from this transfer of Metropolitan's 300-acre-foot share to IRWD and avoid all annual operational cost of the reservoir. Additionally, Metropolitan would have no liability associated with any repairs due to future landslides, flooding, etc.

Staff Recommendation

Option #3

11/19/99
JM T. Wicke Date
Acting Manager, Water System Operations

11/22/99
General Manager Date

Attachment 1

Detailed Report

San Joaquin Reservoir was constructed in 1966 in the San Joaquin Hills area of Orange County, about 2½ miles south of the UC Irvine campus. The reservoir was designed to hold 3,050 acre-feet of treated water delivered from Metropolitan's Diemer filtration plant via the East Orange County Feeder No. 2. Within this portion of Metropolitan's system, Metropolitan's primary function has been to meet peaking demands of member agencies serving approximately 400,000 people in the 35-mile coastal strip from Huntington Beach to Dana Point.

Metropolitan began its participation in the reservoir as a result of a 1962 agreement among Metropolitan, the Municipal Water District of Orange County and Coastal Municipal Water District. Under the terms of the agreement, the Irvine Ranch Water District (IRWD) leased capacity to other agencies. Following construction, Metropolitan began operating the reservoir and gained the use of 300 acre-feet of storage capacity, primarily to meet peaking demands. Under this agreement, any repair costing less than $25,000 was to be funded by Metropolitan, with any such costs over that amount to be shared by the three signatories.

As a resolution to legal disputes among the participating parties, a Trust Storage Agreement was negotiated and signed in 1980 (1980 Agreement). Under the 1980 Agreement, all facilities related to the reservoir were turned over to Metropolitan as Trustee and ownership interests were distributed as follows:

Agency Name	Capacity Allocation (acre-feet)	Percentage Ownership
Irvine Ranch Water District	1,461	47.90%
Mesa Consolidated Water District	583	19.11%
City of Huntington Beach	400	13.11%
Metropolitan Water District of Southern California	300	9.84%
City of Laguna Beach	156	5.12%
The Irvine Company	64	2.10%
South Coast Water District	50	1.64%
City of Newport Beach	36	1.18%
Total	**3,050**	**100.00%**

As a condition of the 1980 Agreement, Metropolitan made no cash contribution for its share of the reservoir's capacity. Metropolitan's share was granted in recognition of the fact that it would be responsible for operation and maintenance of the reservoir for the benefit of the other parties. As Trustee, Metropolitan was responsible for the reservoir's normal operation. Final authority was given to the San Joaquin Reservoir Advisory Committee, comprised of representatives from each of the reservoir owners.

Water Quality Improvement Project

San Joaquin Reservoir has had a long history of problems that have affected the water quality of the reservoir. In the mid-1970s, an infestation of midge fly larvae caused severe turbidity problems in the reservoir and distribution system. About this same time, there was an unintentional introduction of African Clawed Frogs,

which were feeding on the fly larvae. The California Department of Health Services subsequently requested submittal of a plan to improve water quality. Though some remedial measures were taken to prevent the larvae and frogs from entering the distribution system, the problems persisted in the reservoir into the early 1980s. At that time, drawdown of the reservoir revealed a frog population of approximately 850,000, as well as a large amount of associated sediment and debris. With the reservoir drawn down, a trapping program was initiated which brought the frog population under control. Since 1985, the fly and frog populations have been held at manageable levels and high-dose chlorination has kept algae and bacteria under control. Monitoring for the formation of trihalomethanes has become very important to avoid the production of levels in excess of maximum allowable limits.

As a result of these water quality concerns, Metropolitan and the other agencies negotiated the 1990 Memorandum of Understanding (MOU). The primary component of the MOU was the need for a capital project to address water quality concerns. The major feature of this project was to be the installation of a floating cover, which was estimated in 1990 to cost $17 million. The MOU provided that Metropolitan would bear the cost of this project in exchange for additional storage capacity in the reservoir. Specifically, Metropolitan would acquire 1,255 acre-feet of capacity from the other signatories to the 1980 Agreement. The transfer date for this transaction was set for July 1, 1991, or to be postponed automatically until all of the construction contracts for the project were awarded. Metropolitan had the right to void the 1990 MOU if it could not proceed with the project for any reason, or if the estimated cost of the project increased to the point it was deemed economically undesirable to proceed with installation of the cover.

Since the MOU was signed, Metropolitan experienced significant obstacles to implementing the reservoir improvements. Overwhelming public response during the California Environmental Quality Act (CEQA) documentation phase resulted in the need to publish several additional CEQA documents before the project was certified, resulting in a lengthy delay. During the design phase, the need to install a membrane liner, expand the chemical system, and install submersible mixers was identified, significantly increasing the project's anticipated cost. Flow analysis performed during the design phase also revealed severe circulation problems within the reservoir. Metropolitan's experience with the covered Garvey Reservoir indicated that the lack of circulation and long detention time might result in nitrification problems. Unfortunately, the solutions employed at Garvey Reservoir, which is half the size and has a fraction of the turnover time, cannot be used at San Joaquin Reservoir without a significant redesign of the reservoir and inlet/outlet works itself. Then, as the design was nearing completion in 1995, a major landslide occurred within the reservoir, requiring the reservoir to be removed from service. Design of the reservoir improvements was placed on hold during a lengthy geotechnical investigation and landslide repair performed under the direction of IRWD. The repair itself resulted in the need to redesign some of the reservoir improvements as a result of the revised reservoir geometry. In addition, recent changes mandated by the Orange County Fire Authority to the existing chemical system further increased to the project's scope and cost. The most recent cost estimate for all measures needed to place the reservoir back in service to supply drinking water is $32 million.

The numerous delays and increases in project cost caused staff to perform a cost/benefit analysis of the improvement project. Metropolitan and the other reservoir owners were able to operate during the prolonged reservoir outage without hardship. Metropolitan's newly installed SCADA system, and improvements to the local systems by their respective owners, reduced the peaking demands on Metropolitan's system in the immediate area. The improvement project's increased cost and decreased necessity, coupled with an inability to guarantee water quality, resulted in staff's recommendation to the board in April 1998 that Metropolitan exercise its option under the MOU to void the agreement.

Proposed Transfer

Subsequently, IRWD has actively sought to acquire most, if not all, of the storage capacity of San Joaquin Reservoir. IRWD intends to utilize the reservoir as a part of its recycled water system, allowing IRWD to store reclaimed water for irrigation and other purposes. Because of the change in the use of the reservoir, the need for a cover would be eliminated. In advancement of this purpose, IRWD has notified all of its partners in San Joaquin Reservoir that it will purchase any available storage for $100 per acre-foot. In response, many of the participants have tendered their shares of the reservoir. Metropolitan would realize a $30,000 benefit from this transfer of its 300 acre-foot share to IRWD. In addition, Metropolitan would realize an annual cost saving equivalent to its share of the operational cost of the reservoir. Under IRWD's plan, the reservoir will be disconnected from Metropolitan's system. The cost and source of funding for this activity has not yet been determined.