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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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Barbara E. Duff
EXECUTIVE SECRETARY

August 29, 1995

To: Board of Directors (Water Planning and Resources Committee)
From: General Manager
Subject: Incentive and Pricing Alternatives for Local Storage Programs

RECOMMENDATION:

For information only.

John R. Wodraska
General Manager

Submitted by:

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Debra C. Man, Chief
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Concur:

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John R. Wodraska
General Manager

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dr895/board

EXECUTIVE SUMMARY:

The purpose of this Board letter is to: (1) describe some of the storage alternatives being evaluated by staff and the IRP Workgroup; (2) summarize the benefits evaluation approaches; and (3) highlight the policy issues to be considered by your Board as the implementation of the IRP Preferred Resource Mix moves forward.

In June 1995, your Board approved the approach of the IRP Preferred Resource Mix to achieve Metropolitan's supply reliability goal. The Preferred Resource Mix diversifies Metropolitan's investments in imported and local resources as well as critical distribution system facilities. A major component of that resource mix is the effective use of local groundwater basins and reservoirs to store imported water.

Metropolitan has supported local conjunctive use storage operations through the Seasonal Storage Program since 1989-90. In addition, Metropolitan has encouraged the effective use of groundwater basins through the sale of replenishment water since 1950 and developed the temporary in-lieu program in 1978 to develop drought related storage. Finally, such programs as the Cooperative Storage Program and Cyclic Storage Programs are designed to increase yield, provide drought storage, and offer operating flexibility to Metropolitan and its member agencies.

As Metropolitan moves forward with the development of a comprehensive storage program, the following policy issues will need to be reviewed and analyzed:

Defining Different Types of Storage. The Joint Program Advisory Committee (JPAC) and IRP Workgroup have identified three types of storage operations - seasonal shift, put and take, and long-term carryover. Should Metropolitan's storage programs recognize these different functions through different pricing/compensation approaches?

Determining Appropriate Incentive Levels. What is the appropriate level of financial assistance?

Ensuring Equity and Effective Use of the Resource. How will storage benefits be realized? That is, should contractual obligations, economic incentives, or the drought allocation be utilized to ensure that water sold for storage is used in the most effective manner?

Staff is currently evaluating several storage program proposals, including the winter/summer pricing proposal forwarded by the Joint Program Advisory Committee (JPAC). These storage program alternatives will be discussed extensively with the IRP Workgroup and your Board before a final recommendation is made.

DETAILED REPORT:

During the Integrated Resources Planning (IRP) process, a Preferred Resource Mix was developed, balancing local supply and imported supply investments in order to achieve Metropolitan's water supply reliability goal. Conjunctive use storage, using local groundwater basins and surface reservoirs within Metropolitan's service area, was evaluated and found to be a cost-effective strategy in helping to achieve the necessary emergency, seasonal, and

carryover storage requirements for the region. The IRP identified the need for about 300,000 acre-feet of additional local production during dry years, with most of that production being needed during the summer season.

The Preferred Resource Mix includes the use of groundwater basins and local reservoirs to store available imported water during surplus conditions for latter use during periods of need. However, it is important to note that different storage operations provide different benefits for Metropolitan. During the IRP, three different types of storage operations have been identified:

Shift Operations: Metropolitan water delivered during the winter which is used by local agencies during the summer, not changing the total annual demand for Metropolitan water. This type of operation reduces the summer season peaks on Metropolitan's distribution system which allows Metropolitan to defer and downsize facilities such as treatment plants. In addition, by increasing Metropolitan's ability to deliver water during periods of excess availability, the yield of the import system may be increased.

Put and Take Operations: Interruptible water that is taken most years when available from Metropolitan, and used to increase the operating yield of a groundwater basin or reservoir system above the safe yield operation. These operations have characteristics that reflect both shift and long-term storage (drought) benefits.

Long-term Carryover Operations: Water that is stored in Metropolitan's name which can be called by Metropolitan for drought or operational purposes. An example of such water is the recently approved agreement with the Calleguas Municipal Water District.

The JPAC and the IRP Workgroup have reached consensus on these three different types of storage operations. Major program considerations that need to be addressed when developing a comprehensive storage program that incorporates all three storage operations include:

1. Determining the appropriate storage needs for shift and long-term operations.
2. Developing appropriate prices and incentives.
3. Designing adequate measurement and call provisions.
4. Ensuring equity for participants and non-participants.
5. Determining the appropriate drought management signals and allocations to ensure effective use of storage during periods of shortage.

Determining the Value of Storage

As part of the implementation phase of the IRP, the value of water management programs (such as reclamation and groundwater storage programs) in total dollars and dollars per acre-foot (AF) was estimated. These dollar benefits were determined based on deferring and downsizing Metropolitan's capital improvement program, reducing O&M costs needed to treat and distribute water, and lowering resource development costs. In realizing these cost savings, it is important to understand how different storage operations affect Metropolitan's capital facilities. Seasonal shift operations increase Metropolitan's deliveries during the winter season and reduce deliveries during the summer season. Therefore, those capital facilities that are

designed to meet peak deliveries (such as treatment plants) could be deferred and/or downsized if summer season deliveries were reduced. Long-term carryover storage provides both a resource and capital facilities benefit. Instead of shifting water from summer to winter, additional local production is made available throughout the entire year during a drought. This additional local production allows Metropolitan to defer and/or eliminate the need for facilities that are designed to increase water supply during a drought (such as surface reservoirs and ocean desalination). The dollar benefits associated with these two different storage operations were estimated to be \$70/AF for shift and \$300/AF for long-term carryover. In addition, a third type of storage operation called put and take replenishment has characteristics of both shift and long-term. Those agencies that do put and take replenishment enhance their ability to do more shift. Replenishment deliveries also provides a drought benefit because even when replenishment deliveries are cut, groundwater agencies can maintain local production above natural safe-yield for several years.

Through Metropolitan's Seasonal Storage Service (SSS) and other storage programs, local agencies have been storing available imported water in the groundwater basins and surface reservoirs in order to seasonally shift imported water from the summer season (when Metropolitan's distribution system is at or near maximum capacity) to the winter season (when capacity in the system is available). In addition, local agencies have been storing imported water for long-term purposes such as droughts, when annual imported water supplies may be limited. However, the current incentive for the SSS program does not differentiate between shift and long-term storage operations. In addition, many of the member agencies and sub-agencies have indicated that the current SSS program is complicated and that the certification process needs improvements. For these reasons, Metropolitan, the member agencies, and groundwater management agencies formed the Joint Program Advisory Committee (JPAC). The purpose of JPAC was to address the administrative issues surrounding the SSS program for the next fiscal year and to make recommendations for a long-term solution to the IRP Workgroup, which is responsible for the evaluation and final recommendation of water management programs that are consistent with the IRP goals.

Storage Program Alternatives

Metropolitan staff, working with the JPAC and IRP Workgroup, is evaluating three basic approaches to achieve the storage goals identified in the IRP Preferred Resource Mix. These approaches include: (1) cost-based pricing; (2) combination of pricing and seasonal storage certification; (3) contractual storage arrangements; and (4) modification of current Seasonal Storage Service. Some combination of these alternatives may also be appropriate.

Cost-Based Winter/Summer Pricing Alternative. Metropolitan would develop winter/summer rates reflecting the difference in Metropolitan's costs of delivering water during the winter and summer. Under this proposal, storage delivery certifications would not be required. All water would be sold at the appropriate price, whether stored or consumed. The advantage of such a proposal is that the rules are very simple, prices are cost-based, and all member agencies can participate.

Winter/Summer Pricing and Storage Certification Alternative. The JPAC identified the need to simplify Metropolitan's current Seasonal Storage Service program. As such, they suggested that Metropolitan evaluate the use of winter/summer pricing as a means to encourage shift operations and discounts for put and take operations. Under this suggestion, shift operations would be encouraged by the difference in the price of basic water delivered during the winter and the summer, where winter deliveries were priced

at a lower rate than summer. In addition, the JPAC noted that put and take (replenishment) deliveries would be made at an even larger discount, recognizing the added benefit associated with the interruptible component of such deliveries. However, this alternative would still require certification for in-lieu replenishment deliveries.

Contractual Arrangements. Contracts such as the one approved for storage in the North Las Posas Basin would be used to store Metropolitan water for use during droughts or for other operational purposes. This water would be operated in a fashion similar to that of a Metropolitan surface reservoir.

Modification of Existing Seasonal Storage Service. The current Seasonal Storage Service does not differentiate between shift and long-term operations. Based on the different benefits that the different types of storage operations have, modifications to the current SSS program could be made, such that different incentives would apply to different types of operations.

Integrated Resources Planning Schedule

To provide time to consider and evaluate the alternatives, a pending Board Letter on proposed comprehensive storage program will be submitted for your Board review in October. In addition, a full Board Workshop will be held on October 17th in order to receive comments regarding storage programs as well as the other IRP issues, including the Local Resources Program, the Drought Management Plan, the Conservation program, and Wheeling principles. This total package of IRP programs is scheduled for action by your Board in November.