



● **Board of Directors**
Water Planning and Resources Committee

November 16, 1999 Board Meeting

11-1

Subject

Strategies for Implementing Groundwater Storage Programs within Metropolitan's Service Area

Description

The Integrated Resources Plan identified groundwater storage as an important part of Metropolitan's future water resource mix. After the implementation of the Semitropic Groundwater Program, Metropolitan's board directed staff to develop local contractual programs using the Semitropic principles. However, these principles were found to be constraining in their application to local programs.

Currently, Metropolitan has one contractual groundwater storage program within its service area – the Calleguas Municipal Water District Program in the North Las Posas Basin. Final negotiations are also taking place for a storage program within the Raymond Basin. Thus far, Metropolitan has not formally adopted a strategy or principles for developing groundwater storage programs within its service area. Many member agencies are now approaching Metropolitan with specific proposals for storage. The Board has also expressed interest in the development of groundwater storage programs within Metropolitan's service area. Consequently, staff has developed, for board consideration, three proposed alternative strategies for the negotiation and implementation of local groundwater storage programs.

1. **Case-by-Case (status quo)** – Member agencies might propose a storage program based on their needs and expected benefits, or Metropolitan may approach a member agency based on its assessment of regional benefit.

Advantage: Metropolitan has the flexibility to assess the local characteristics of each groundwater basin and the benefits to both the region and local communities of implementing a groundwater storage program.

Disadvantage: There is no standardized approach for determining the need for the program or the budget for implementation, nor are programs compared on a competitive basis.

2. **Request for Proposal (RFP)** – This approach would be similar to the RFP process developed for the Local Resources Programs. Metropolitan would put forth very specific evaluation criteria, ranking projects proposed by member agencies.

Advantage: Each program will be competitively evaluated with other programs, which some have argued would lead to the implementation of the most cost-effective groundwater storage programs.

Disadvantage: This approach tries to standardize all groundwater storage programs. Experience has shown that not all local groundwater programs are alike. Local issues such as water quality, basin adjudication or management, local and regional benefits are all very unique, making it difficult to rank projects using specific criteria.

3. **Hybrid Approach** – This approach would set specific targets for groundwater storage, establish the regional benefit Metropolitan is willing to spend, and a budget for implementation. The IRP established that programs developed for \$300 per acre-foot or less provide regional benefit. The \$300 benefit was based on Metropolitan's avoided costs for supply and capital projects. The IRP also identified that the remaining need for long-term storage is 450,000 acre-feet, with 150,000 acre-feet per year of dry-year production. Metropolitan currently has \$200 million included in the 10-year CIP for implementation of local groundwater programs, of which about \$47 million will be used to complete the existing program in the North Las Posas

Basin. Thus far, \$15 million has been spent for the first and second phases of the project. These targets might have to be re-evaluated given the outcome of the Strategic Plan and update to the IRP.

The approach would also set up a management structure that would ensure that: (1) there would be accountability of both Metropolitan and the participating local agency(s) in the development, implementation and operation of the storage program, with quantifiable measures of progress; and (2) the appropriate staff from the Water Resource Management Group, Water Systems Operations Group, Corporate Resources Group, Outreach and the General Manager's Office would be used during the program's development.

Finally, the hybrid approach would establish principles for negotiation and implementation of local programs, which are listed for board consideration:

- Regional Benefits – Groundwater storage programs must provide regional benefits to increase dry year supply (in accordance with the board's Water Surplus and Drought Management Plan) and reduce capital costs associated with Metropolitan's distribution system. Benefits must outweigh the risks involved with developing the program.
- Partnership – Groundwater storage programs must have strong local support in order to be successful. Partnership might also involve coordination of funds from other sources (e.g., state/federal funds).
- Address Local Needs – When developing groundwater storage programs, Metropolitan must consider the individual needs of the groundwater basin and local communities. Programs should consider issues such as water quality, reliability of supply, financial benefits and groundwater levels.
- No Negative Impact – Groundwater storage programs should be designed so there are no negative financial, water quality or supply reliability impacts to Metropolitan's member agencies. Programs should ensure that investments made by Metropolitan for storage will not be used by local agencies to "roll off" the system.
- Phased Approach – Groundwater storage programs should be implemented in phases. At first, smaller-scale programs should be designed to meet overlying demand in lieu of Metropolitan's surface deliveries. As the programs are operated, levels of trust can be established and technical issues resolved. If successful, these programs can be expanded to the point where groundwater can be exported to other parts of the service area.
- Water Quality – Exporting groundwater, as part of a storage program, into Metropolitan's distribution system must meet all drinking water quality regulations as well as be of acceptable quality to downstream users. Metropolitan should work with local agencies in developing cost-effective solutions to water quality issues as they pertain to groundwater storage, if within established regional benefit.
- Shared Indemnification and Risk – There are risks associated with developing any water resource program, including groundwater storage. Metropolitan should be willing to share the appropriate risk of implementing groundwater storage programs with local entities to the extent benefits outweigh the risks.

In order to illustrate how these principles would be applied, a summary of the **Raymond Basin storage program** is attached for reference.

Advantage: Metropolitan would make clear its needs for groundwater storage and its budget, but not develop specific evaluation criteria that might be restrictive and not address the unique characteristics of the local groundwater basins.

Disadvantage: The process will take longer to implement than a standard RFP process.

Policy

Adopt a strategy to implement groundwater conjunctive-use storage programs within Metropolitan's service area.

Board Options/Fiscal Impacts

Option #1 Case-by-Case (status quo) Approach

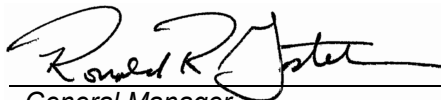
Option #2 RFP Approach

Option #3 Hybrid Approach

Staff Recommendation

Option #3

 10/28/99
Stephen N. Arakawa, Acting Manager Date
Water Resource Management Group

 11/2/99
General Manager Date

Attachment 1 Raymond Basin Storage Program

Raymond Basin/Metropolitan Groundwater Storage Program

Metropolitan is currently negotiating with the Raymond Basin Management Board, the City of Pasadena, Foothill Municipal Water District (MWD), and the City of San Marino for a contractual groundwater storage program in the Raymond Basin. The program would give Metropolitan 75,000 acre-feet of storage from the unused storage capacity in the basin. Metropolitan would build an extension to the East Valley Feeder and additional ASR wells to inject water into the basin during times when Metropolitan has water available and to pump water from the basin during times when Metropolitan needs water. The dry-year yield of the program is estimated to be 25,000 acre-feet. The program is an example of how the principles drafted in this Board letter have been applied:

Regional Benefits—The program will develop 25,000 acre-feet of water for use during dry years at a cost of approximately \$250 per acre-foot, which is below the regional benefit of \$300 per acre-foot established during the IRP. Total cost of the program is estimated to be \$22 million.

Partnership—The program has strong local proponents, including the City of Pasadena, the Foothill Municipal Water District, the City of San Marino and the Raymond Basin Management Board.

Address Local Needs—As part of the program Metropolitan will construct an extension to the East Valley Feeder. This capital project will allow for State Water Project water to be injected into the Raymond Basin to meet their water quality objectives. The overall program will provide increased reliability to the participating local agencies.

No Negative Impacts—Metropolitan's member agencies will gain additional reliability at a reasonable cost. In addition, Pasadena and Foothill MWD will pay the full service water rate when the water is extracted from storage. As part of the agreement, these agencies agree to purchase a fixed amount of water from Metropolitan in order to ensure that the wells constructed by Metropolitan will not be used to "roll off" of the system. Since no groundwater is being put into Metropolitan's distribution system, there are no adverse water quality impacts.

Phased Approach—Initially, the program calls for water to be pumped to meet only overlying demand. This means when Pasadena or Foothill MWD requests surface deliveries from Metropolitan, Metropolitan has the contract provision to have the local agencies pump groundwater from storage in-lieu of the Metropolitan delivery. The delivery that would have gone to Pasadena and Foothill can now be delivered to the other member agencies, increasing reliability for all.

Water Quality—The agreement allows for future expansion, which would include export of groundwater into Metropolitan's system. However, water quality issues would have to be addressed.

Shared Indemnification and Risk—This issue is still under negotiation.