

- Transmittal of Final Groundwater Assessment Report

Summary

Report assessing the use and status of groundwater basins within Metropolitan's service area

Attachments

[Attachment 1: Final Groundwater Assessment Report](#)

Detailed Report

In October and November 2005, the Board directed staff to prepare a report assessing the use and status of groundwater basins within Metropolitan's service area. The purpose of the study is to provide a technical and factual baseline from which to consider how Metropolitan should move forward to achieve its Integrated Water Resources Plan (IRP) groundwater storage targets for dry-year water supply reliability. A draft of the report was provided to your Board in April 2007, and was also copied to the member agencies and groundwater basin managers. The final report accompanies this Board transmittal ([Attachment 1](#)). This letter provides an overview of the report and summarizes key findings.

Report Content and Organization

The Final Groundwater Assessment Report includes data analysis for the groundwater basins for the period 1984/85 through 2004/05. The final report includes a stand-alone Executive Summary. The main body of the report is organized into four chapters: Chapter I: Introduction and Purpose; Chapter II: Methodology regarding data, mapping and glossary; Chapter III: Regional Overview; and Chapter IV: Groundwater Basin Reports.

The report is organized by sub-regional areas: Northwest Metropolitan service area, San Fernando Valley, Los Angeles County coastal plain, San Gabriel Valley, Orange County, Inland Empire, Eastside Metropolitan service area, and San Diego County. The regional overview compares these eight areas as well as addresses trends for the overall Metropolitan service area. The groundwater basin reports are organized by the sub-regions, with reports for groundwater basins within each sub-region.

Each groundwater basin report provides information on a basin or group of basins. The information includes physical characteristics and capabilities of the groundwater aquifers, management structure and agencies involved in the management activities, basin facilities and operations including production, recharge, water levels, water quality issues and treatment, existing storage programs, and available storage space.

Report Development Process

The final Groundwater Assessment Report has been prepared in collaboration with member agencies and groundwater basin managers utilizing existing reports and data. A workshop was held in December 2005 with the member agencies and basin managers and it was agreed that a questionnaire would be used. The questionnaire was sent out in February 2006, and the parties subsequently provided data, GIS shape files, and copies of existing technical and management reports. The report contains a regional overview and detailed chapters addressing the groundwater basins within the Metropolitan service area. Each of the groundwater basin chapters was reviewed by the respective member agencies and basin managers. Metropolitan staff subsequently prepared the regional overview by analyzing the patterns in the data for the sub-regions and region.

The member agencies and basin managers were provided the draft report for review and comment in April 2007. A workshop was held on May 24, 2007, with the member agencies and groundwater basin managers to solicit comments on the draft report during the comment period through mid-June 2007. Further input on the groundwater basins filled some of the data gaps and provided clarification on the information in the draft report. Workshop input focused on comprehensive messages provided by the report and highlighted in an Executive Summary prepared to accompany the final report. Concerns were expressed that the report conclusions

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regarding the availability of substantial storage space not be misconstrued in broader water supply discussions in the Bay-Delta. Discussion was added to emphasize the need for continued availability of surplus supplies for storage as well as resolution of issues and provision of funding. Member agencies and basin managers were also requested to review the water quality discussions for groundwater basins to ensure that an appropriate overview was presented.

Regional Overview Findings

The regional overview presents recent data (2004/05) and compares two 10-year time frames (1985-1994 and 1995-2004) within the study period to characterize trends. Each of the 10-year periods includes wet and dry years sufficient to allow a reasonable comparison.

Groundwater Basin Facilities In 2004/05, groundwater basin facilities throughout the Metropolitan service area included more than 4,300 active groundwater production wells, 36 aquifer storage and recovery wells that both inject and extract water, about 5,000 acres of spreading basins, seven seawater intrusion barriers, 16 desalters and 400 acres of water quality wetlands.

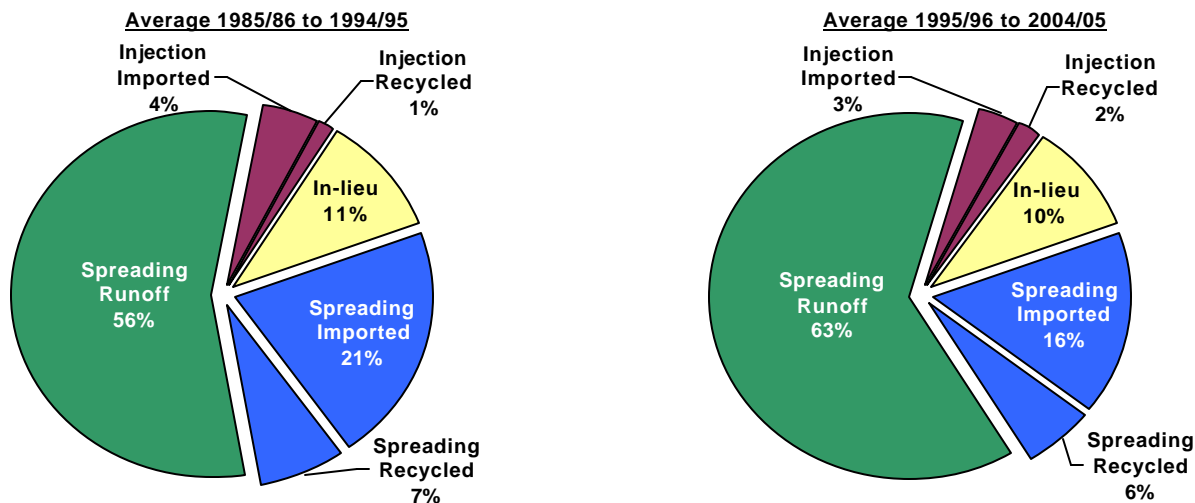
Groundwater Production and Recharge Trends Overall, throughout the Metropolitan service area, groundwater production is used to meet nearly 40 percent of the demands for water supplies, though a portion of this relies on replenishment deliveries from Metropolitan. Total groundwater production in 2004/05 was 1.41 million acre-feet. Groundwater production in the Metropolitan service area increased by 8 percent when comparing the average annual production for the period 1985-1994 with the period 1995-2004. Production increased in all sub-regions except the northwest Metropolitan service area, which decreased 20 percent due to mandatory pumping restrictions to correct declining water levels and seawater intrusion. Also comparing these two ten-year periods, groundwater production supported by artificial recharge (all active recharge using local, imported and recycled waters) declined by five percent.

Comparison of Production to Active Recharge for the Metropolitan Service Area 1985-1994 to 1995-2004

Time Period	Average Annual Production (AF)	Average Annual Active Recharge (AF)	Percent of Production supported by Active Recharge
1985-1994	1,451,000	767,000	53%
1995-2004	1,563,000	750,000	48%

Additionally, the use of imported water for direct recharge as proportion of the total groundwater recharge portfolio declined five percent, and reliance on local runoff increased seven percent when comparing the two ten-year periods. Use of the in-lieu method for storage remained fairly constant between the two periods at about ten percent of the total recharge portfolio.

Comparison of Artificial Recharge 1985/86 –1994/95 to 1995/96-2004/05



During the recent wet year 2004/05, 1.11 million acre-feet of water (all sources) were spread or injected throughout the service area as compared to the reported 1.85 million acre-feet of spreading and injection capacity available in that year. This is about a 60 percent usage rate for the year, and reflects rainfall patterns, and availability of regional and local conveyance and recharge capacity.

Trends in Groundwater Basin Water Levels. Five patterns of water level trends are identified throughout the Metropolitan service area: (1) basins in slow decline from 1985-2004, (2) basins in arrested decline and recovery, (3) basins with very flat water levels for the period, (4) basins with flat average water levels but wide swings during the period, and (5) basins with rising water levels often due to poor water quality and decreases in use.

Trends in Groundwater Basin Management. Over 90 percent of the groundwater production within the Metropolitan service area is subject to adjudication or formal management. The basins are adjudicated, managed pursuant to state statute, or managed pursuant to adopted groundwater management plans consistent with the California Water Code. Many of the basins not currently in such a formal arrangement are moving in that direction. Basins with no apparent movement in this direction tend to be small with little production and often of poor water quality.

Water Quality. Substantial groundwater treatment capacity for various contaminant issues has come on-line within the last five years, including many of the desalters to treat brackish groundwater. Given the data that was provided for the study, in 2004/05 approximately 21 percent (300,000 acre-feet) of all groundwater production was either treated or blended for water quality purposes. About 40,000 acre-feet of this received incentives through Metropolitan’s Local Resources Program groundwater recovery element.

Groundwater Basin Capacity Available for Storage. The analysis of the groundwater basins reviewed the physical capacity of the basins for storage of water, the unused storage space, and importantly, the portion of the unused space that is available for storage. Based on the analysis of data provided by the member agencies and groundwater basin managers, there are as much as 3.2 million acre-feet of physical storage space available in the groundwater basins within the Metropolitan service area as of 2006. However, there are significant reasons why this space is not currently utilized that would need to be addressed to allow the development and implementation of storage programs. Issues range from institutional disagreements and uncertainties, need for capital investments in conveyance, recharge, and/or extraction facilities, water quality considerations including contaminant remediation operations, and lack of overlying demand for increased groundwater conjunctive use.

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Next Steps

The Groundwater Assessment Report was prepared to provide a technical basis for furthering discussion on achievement of increased groundwater storage in the Metropolitan service area to meet the dry-year supply targets of the Integrated Water Resources Plan (IRP). A workshop will be scheduled with the member agencies in October 2007, to initiate discussion of concepts for encouraging additional groundwater storage to meet the IRP targets.