

## **EXECUTIVE SUMMARY**

### **BACKGROUND AND PURPOSE**

Enacted in 1983, the Urban Water Management Planning Act (Act) requires every urban water supplier providing water to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt an Urban Water Management Plan every five years. The Municipal Water District of Orange County (MWDOC), a water wholesaler and regional planning agency, fits the defined criteria and has prepared this Urban Water Management Plan (Plan) to address all the requirements set forth in the *State of California Water Code* Section 10610 through 10657.

Since its passage, many amendments have been added to the Act. These changes are intended to encourage increased regional planning and the cooperative management of California's most precious commodity – water. As a result, Urban Water Management Plans have evolved to become:

- foundation documents and sources of information for Water Supply Assessments (*California Water Code* Section 10613) and Written Verifications of Water Supply (*California Water Code* Section 66473.7);
- long-range planning documents for water supply;
- source data for the development of regional water plans;
- source documents for cities and counties preparing their General Plans;
- key components of Integrated Regional Water Management Plans; and
- a condition to qualify for receipt of certain State grant funds.

For MWDOC, the benefits of updating our Plan extend beyond legislative compliance. The regional approach of documenting water-service planning allows MWDOC to:

- evaluate supply-reliability goals for the region and provide a comprehensive assessment of water resource needs in its service area;
- provide a regional perspective on current and proposed water use efficiency programs and identify measures that can be accomplished in a cost effective manner;
- provide assistance to maximize the beneficial use of recycled water and other local resource supplies that reduce the need for imported supplies; and
- offer opportunities for public participation through publicly-noticed meetings and provide information that will allow the public to gain a better understanding of the region's comprehensive water planning.

Please note that MWDOC is a wholesaler of imported water for the region. For the purpose of evaluating a comprehensive assessment of the region's water services, MWDOC has taken a regional approach in compiling this Urban Water Management Plan. This Plan documents information on all sources of supplies – imported supply, groundwater supply, surface supply, recycled supply, and wastewater, as a summary of information for the regional planning. MWDOC does not currently provide any source of water other than imported supplies from Metropolitan, and it is not responsible for any of the projects or sources other than imported supply discussed in this Plan.

## **PLAN FINDINGS**

The following are summaries for the sections discussed in this Draft Plan:

### **Water Service Reliability**

Based on the preliminary information gathered, the Draft Plan concludes that the MWDOC service area will have sufficient existing and planned supplies to meet 100% of its projected demand under every water-year scenario for the next 25 years.

Retail consumptive demand is projected to grow at a slower rate of 0.5% per year compared to historical demand growth of 1.54% per year. Water demand for municipal and industrial use will continue to grow from approximately 500,000 acre-feet per year at the present time to more than 610,000 acre-feet per year in 2030. Demand in the agricultural sector is expected to decline from nearly 17,000 acre-feet per year today to less than 5,000 acre-feet per year in 2030. As driven by the availability of some of its replenishment supplies, the recharge of the Orange County Groundwater Basin is expected to increase from approximately 325,000 acre-feet per year (via the seawater intrusion barrier, in-lieu water, and spreading basins) to more than 400,000 acre-feet per year in 2030.

This Plan also evaluates each source of water in the region. The resource mix for meeting direct consumption includes local groundwater, recycled water, surface water, and imported water from Metropolitan Water District of Southern California (Metropolitan). The Plan documents MWDOC's cooperative efforts with its member agencies in developing local supplies. In fact, the region anticipates increasing its local supply from its current 53% of direct consumption to 60% in 2030. In particular, groundwater supplies are projected to grow from 45% to 48% and recycled water from 6% to 10%. As a result, it is projected that the region will decrease its dependence on imported supplies under normal climate conditions from 47% in 2005 to 40% in 2030. The resource mix for indirect consumption used for groundwater recharge and the seawater intrusion barrier also includes local and imported supplies. Currently, surface supplies from the Santa Ana River and local streams are meeting approximately 79% of demand for indirect use. Local recycled supply is meeting about 1% of the demand. Imported supplies, primarily from Metropolitan, are used to meet 20% of the indirect consumptive demand. Local supplies for meeting indirect consumptive demand are expected to increase when the Groundwater Replenishment System comes on line in 2007-08, and as municipal discharge continues to increase into the Santa Ana River due to population growth in the upper Santa Ana Watershed. By 2030, the region is projected to meet its indirect consumption with 69% of

surface supplies from the Santa Ana River and local streams, 18% recycled water, and 13% imported water.

When assessing the water supply reliability for the region, MWDOC used an inference approach to conclude that Metropolitan is capable of supplying imported water to meet the demand projected by MWDOC under various hydrologic conditions. In its Draft 2005 Urban Water Management Plan (September 2005), Metropolitan presents its supply availability at the regional level, rather than at the member-agency level. This approach does not enable MWDOC to quantify the availability of imported supply from Metropolitan specific to MWDOC. However, in that Draft Plan (Section II.2 – *Evaluating Supply Reliability*), Metropolitan was able to demonstrate it can maintain 100% reliability in meeting direct consumptive demand under a normal hydrologic year, the single-driest hydrologic year, and a series of multiple dry years through 2030. By inference, MWDOC determined the availability of its imported supply should equate to its projected imported demand. Thus, MWDOC concludes Metropolitan will meet all of the imported demand for direct consumption projected by MWDOC under this Draft Plan.

Water transfers and exchange and ocean water desalination are two potential sources of supply that are discussed in the Plan as part of MWDOC’s long-term resource evaluation, but they are not included in the current resource mix. MWDOC and some of its member agencies are now developing long-term relationships with water suppliers in Northern California. MWDOC is also exploring water transfers from other Metropolitan member agencies. These relationships may lead to mutually beneficial transfer agreements in the near future. The Plan also discusses potential ocean desalination projects in the region: the Poseidon Resources Corporation proposed project in Huntington Beach; a potential joint San Diego/Orange County regional project at San Onofre; and the potential MWDOC/Dana Point Desalination Project.

Finally, the Plan compares the region’s supply and demand to determine water service reliability under different climatic conditions – types of water years. The Plan first establishes the hydrologic conditions that define the types of water years in the MWDOC region by considering a combination of the following three variables:

1. Total retail demand of the water year;
2. Local supply condition of the water year; and
3. Imported supply condition of the water year.

Imported-supply demand typically increases during dry years when the weather is hot and there is a decrease in local runoff. Furthermore, in its preliminary Draft Plan Metropolitan demonstrated it has developed flexible water supplies through transfers and storage programs designed to increase its resources during dry water year conditions. As a result, the water year is defined by the net difference of total retail demand less local supplies. The greater the net difference, the more critical it is for MWDOC to depend on imported supply. Using this approach, the Plan defines the types of water years in the region as:

- Normal Water Year: average of 83 years, representing the historical hydrology from 1922 to 2004;
- Single Dry Water Year: 1961 hydrology (yields the highest one year demand for imported supply);
- Multiple Dry Water Years: 1959 to 1961 (a sequence that yields the highest three-year demand for imported supply);

When comparing supply and demand under those defined water years, the Plan concludes that the region is projected to maintain 100% water-service reliability under each type of water year. Under normal water years, the total retail demand from 2010 to 2030 is expected to be met by 60% local supply and 40% imported supply. Under single dry water years, retail demand is expected to increase by 6%. Local supply is anticipated to decrease from 60% in normal year to 57% in a single dry year for 2010 and to 52% for 2030. To compensate for the wide gap between retail demand and local supply, imported supply is expected to increase from 40% in a normal year to 43% in a single dry year for 2010, and to 48% in a single dry year for 2030. Similar trends can be observed under multiple dry water years.

### **Impact of Water Quality on Water Service Reliability**

Water quality evaluation is based on known contaminants applicable to local and imported supplies by three levels of standards:

- Primary Drinking Water Standards (health);
- Secondary Drinking Water Standards (aesthetics);
- Notification Levels (not yet regulated contaminants).

After evaluating the water quality in the region, the Plan concludes that current management strategies have accounted for all known and foreseeable water quality impacts. The region does not anticipate that any water quality issues would either reduce supply availability or could not be handled through existing management strategies.

### **Programs to Improve Water Service Reliability**

As a regional provider and resource planning agency, MWDOC is committed to programs that maximize existing water resources and minimize the region's dependency on imported supplies. To that end, MWDOC has taken a proactive stance, participating in the following efforts:

- Integrated Regional Water Management Plan;
- Water Use Efficiency Programs;

- Orange County Water Reliability Plan;
- South Orange County Water Reliability Study;
- Metropolitan’s Local Resources Incentive Program - Assisting agency participation in this program for local supply development;
- Cooperative Agreement with Orange County Water District;
- Ocean Water Desalination Feasibility Investigation; and
- Southern California Comprehensive Water Reclamation and Re-Use Study.

### **Water Conservation Program**

The Plan documents MWDOC’s water use efficiency efforts. As a wholesaler, MWDOC is committed to developing and implementing regional conservation programs on behalf of its retail water agencies and their customers. This regional approach enables economies of scale, ensures a consistent message to the public, and assists in the acquisition of grant funding for program implementation.

To facilitate the implementation of Best Management Practices (BMPs) throughout Orange County, MWDOC focuses its effort on the following three areas:

- **Regional Program Implementation:** MWDOC develops, obtains funding for, and implements regional BMP programs on behalf of all retail water agencies in its service area. Program details are discussed in Section 5.4.3 of the Plan.
- **Local Program Assistance:** Upon request, MWDOC assists retail agencies in developing and implementing local programs within their individual service areas. MWDOC provides assistance with a variety of local programs including, but not limited to, Home Water Surveys, Landscape Workshops (residential and commercial), Public Information, School Education, Conservation Pricing, and Water Waste Prohibitions.
- **Research and Evaluation:** An integral component of any water use efficiency program is the research and evaluation of potential and existing programs. In the past five years, MWDOC has conducted research that allows agencies to measure the water-savings benefits of a specific program and then compare those benefits to the costs of implementing the program. This cost/benefit analysis enables individual agencies to evaluate the economic feasibility of a program prior to its implementation.

### **Wastewater Management and Water Recycling**

This Plan documents wastewater collection, treatment, recycling, and disposal in the MWDOC service area. Currently the region collects nearly 340,000 acre-feet of

wastewater per year. 11% of that wastewater is used for recycled supply. The remainder is disposed through ocean outfalls. However, the Plan projects the amount of recycled water will increase in the future. The amount of wastewater is expected to grow to approximately 460,000 acre-feet per year in 2030, with 30% expected to be treated for recycled use and only 70% disposed through ocean outfalls.

The Plan projects that recycled water will become a significant, reliable source of supply in the future and examines its expanded use. The mechanisms encouraging recycled water use include:

- assisting retail agencies to secure funding from local, state, and federal agencies;
- promoting partnerships to encourage water recycling projects (example: the Groundwater Replenishment System, which is jointly funded by Orange County Water District and Orange County Sanitation District);
- urging regulatory agencies to streamline regulatory requirements;
- lobbying for state and federal assistance for the construction of brine lines to offset the cost of brine disposal; and
- supporting research that addresses public concerns on recycled water use, develops new technology for cost reduction, and assesses health effects to protect the public.

### **Water Shortage Contingency Plan**

During water shortages, MWDOC works with its member agencies to manage the water supply in the region to ensure it meets the demands of its member agencies. Water shortages may result from variations in weather, natural disasters, or unanticipated situations (i.e. system failures, acts of terror). During a severe water shortage (such as a Stage 7 supply reduction as defined in Metropolitan's Water Surplus and Drought Management Plan), the MWDOC Board would be responsible for allocating imported water from Metropolitan. MWDOC would use the same principles as identified in Metropolitan's Water Surplus and Drought Management Plan for the allocation of imported water to its member (retail) water agencies, subject to any locally developed principles which would be developed in consultation with the retail agencies.

In the early 1980s, three regional water agencies – MWDOC, Coastal Municipal Water District (later merged with MWDOC), and Orange County Water District – jointly formed the Water Emergency Response Organization of Orange County (WEROC) to coordinate emergency response on behalf of all Orange County water agencies. Details of a catastrophic supply interruption plan developed through WEROC are discussed in Section 7.4 of the Plan.

## **COORDINATION**

It is important to note that Metropolitan and many of MWDOC's retail member agencies are also required to prepare Urban Water Management Plans and are doing so simultaneously. As a result, MWDOC recognizes that close coordination among its wholesale agency and MWDOC's retail member agencies is the key to the success of its Plan.

The MWDOC Plan is meant to aggregate the planning information in a meaningful way so the public can better understand water resource planning on the regional level. Every effort has been made to coordinate information with local retail agencies' plans as they were being prepared to avoid any significant discrepancies in facts, figures, and estimates contained in each local Urban Water Management Plan. To that end, much of the information presented in this Plan is based on the BEST AVAILABLE information at the time of drafting. To the extent that any discrepancies exist, the local retail agency plan controls.

## **PLAN SUMMARY AND ADOPTION**

Based on the data compiled in this Plan, water service in the MWDOC region is expected to be 100% reliable for the next 25 years. The Plan also finds that the region is continuing to improve its water reliability by designing programs to protect and ensure water quality, maximize local supplies, promote conservation, encourage recycled water use, and meet its demands during shortages.

In compliance with *California Water Code* Section 10644(b), MWDOC is required to file this Plan with the Department of Water Resources on or before December 31, 2005.