



- Board of Directors
Water Planning and Stewardship Committee

9/22/2015 Board Meeting

9-1

Subject

Potential Regional Recycled Water Supply Program

Executive Summary

Metropolitan has the opportunity to explore the potential development of a regional recycled water program that would purify and reuse water for the recharge of groundwater basins and augment water supplies within the Southern California region. Such a program would be in partnership with the Sanitation Districts of Los Angeles County (Sanitation Districts). This program would purify secondary effluent from Sanitation Districts' Joint Water Pollution Control Plant (JWPCP) using advanced treatment technologies to produce water, which is near distilled quality and would be equal or better than the quality of water that is currently used to replenish groundwater basins in the Southern California region. The secondary effluent from the JWPCP is currently discharged to the Pacific Ocean. The purified water would be delivered to member agencies to meet their groundwater recharge and storage requirements.

Such a program would further the implementation of Metropolitan's Integrated Resources Plan (IRP), which calls for diversifying the region's water supply sources and improving the storage and delivery capabilities of Metropolitan and its member agencies, in an effort to increase the region's water supplies to deal with droughts, climate change and emergencies, such as a major seismic event. Likewise, this regional program would be consistent with Sanitation Districts' goals to increase the reuse of treated wastewater from the JWPCP. To meet its goal, the Sanitation Districts is also currently working with individual water agencies to reuse water from its San Jose Creek Reclamation Plant, including the Groundwater Reliability Improvement Program with the Water Replenishment District and the Indirect Reuse Replenishment Project with Upper San Gabriel Valley Water District. A regional recycled water supply program would complement these local projects.

Description

Timing and Urgency

Development of a regional recycled water supply program presents a significant opportunity to provide new local resources that would help maintain groundwater recharge and storage for the service area. The unprecedented drought conditions of the past eight years has resulted in significant reductions in local surface supplies and groundwater production and increased the need for groundwater and surface reservoir recharge supplies. The challenges of continued droughts, climate change uncertainties and the hydrologic variability of imported water supplies demonstrate the value in accelerating development of local resources, including conservation, water recycling, groundwater recovery and storage, and ocean desalination.

Details

Advancing Local Resources Development

Over the last twenty years, Metropolitan's 1996 IRP and subsequent IRP Updates have established that the region's water supply reliability depends on diversifying the region's water supplies. Under the 2010 IRP Update, Metropolitan and its member agencies proposed to advance water use efficiency through conservation and recycled water, along with further local supply development such as groundwater recovery and seawater

desalination and core imported supplies from the Colorado River and SWP. To date, Metropolitan has participated in furthering protection of local resources development by providing incentive funds to local member agency projects through the Local Resources Program. The 2010 IRP Update also recognized that future recycling and desalination projects may require new forms of local-regional partnerships and flexibility to provide the necessary incentives, through financial assistance, equity partnerships or ownership.

The current statewide drought emergency has underscored the importance of advancing the development of local resources, in conjunction with conservation and maintaining core imported supplies under the IRP. The 2014/15 water year brought the lowest snowpack and runoff in recorded history and resulted in the loss of local surface supplies and groundwater production. Reservoirs and groundwater basins are now at their lowest storage levels in the last two decades and there is an increasing need for groundwater and surface reservoir recharge supplies. As a result, projected groundwater production within Metropolitan's service area is estimated to have fallen by about 250,000 acre-feet per year. The challenges of continued droughts, ongoing uncertainties from climate change, the low allocation of SWP supplies, and long term-risk of shortage on the Colorado River demonstrate that it is imperative to accelerate the development of local resources, including conservation, water recycling, groundwater recovery and storage, and ocean desalination. These events and potential challenges have led Metropolitan and member agencies to pursue resource strategies to accelerate the development of significant local resources to deal with droughts, climate change and seismic risks and to meet the IRP resource targets. The development of a regional recycled water supply program would be consistent with this strategy and could provide a new significant local water supply. Further, the program offers an opportunity to add value to Metropolitan's core supplies, by in effect recapturing for reuse a significant amount of imported SWP and CRA supplies delivered to Sanitation Districts' service area by Metropolitan.

Partnership with Los Angeles County Sanitation Districts

Metropolitan is exploring a partnership with Sanitation Districts to implement a regional recycled water program that would purify and reuse water for the recharge of groundwater basins and augment water supplies within the Southern California region. The opportunity for Metropolitan and Sanitation Districts to jointly develop recycled water supplies has been developed over the course of the last five years with careful consideration of the technical feasibility and institutional collaboration. In March 2010, the Metropolitan Board authorized Metropolitan to work with Sanitation Districts to study the feasibility of a regional indirect potable reuse program and perform pilot studies. Between June 2010 and July 2012, the pilot study was conducted jointly by the two districts at the JWPCP to evaluate the feasibility of advance water treatment of the JWPCP secondary effluent. The pilot study also evaluated how Metropolitan could meet draft Title 22 Groundwater Replenishment Regulations administered by the California Department of Public Health, now the Division of Drinking Water. The results of the pilot study indicated that the advanced treatment for indirect potable reuse was technically feasible. On this basis, Metropolitan and Sanitation Districts have continued to discuss potential terms and responsibilities of a partnership to implement a regional program.

Recently, the staffs of Metropolitan and Sanitation Districts began discussing a proposed set of key terms and conditions for a potential Memorandum of Understanding (MOU) to jointly implement a regional water recycling supply program that would achieve the goals of both districts. The draft terms and conditions of the MOU would be similar in approach and principle to those of the executed agreement for the Groundwater Replenishment Program executed by Orange County Water District and Orange County Sanitation District.

Sanitation Districts is a partnership of 24 independent and special districts that provide wastewater and solid waste management for approximately 5.3 million people in Los Angeles County. Sanitation Districts published its first report on potential water reclamation in 1949 and its first formal plan for water recycling, "A Plan for Water Reuse" (the Plan) in 1963. Since that time, the Plan has been endorsed by Sanitation Districts' boards of directors and has been updated multiple times. In accordance with the Plan, Sanitation Districts' goal is to maximize the use of purified wastewater from its facilities for the benefit of the region. Sanitation Districts currently treats an average of 460 mgd of wastewater at 10 water reclamation plants and at the JWPCP located in Carson, California.

The JWPCP is Sanitation Districts' largest wastewater treatment plant with a capacity of 400 mgd. It currently provides primary and secondary treatment up to 280 mgd of wastewater before it is discharged through outfall tunnels to the Pacific Ocean. In considering the flow reductions due to conservation and regulatory compliance issues associated with the brine discharge, Sanitation Districts estimates that approximately 150 mgd of secondary effluent would be available for purification and reuse.

Potential Regional Recycled Water Supply Program

Under a regional program, Metropolitan would purify the secondary effluent from Sanitation Districts' JWPCP using advanced treatment technologies to produce reuse water, which is near distilled quality and would be equal or better than the quality of water that is currently used to replenish groundwater basins in the Southern California region. Up to 150 mgd of secondary effluent from the JWPCP, which is currently discharged to the Pacific Ocean, could be available for purification and reuse. The purified water could be delivered annually to member agencies to meet groundwater recharge and storage requirements.

Any proposed regional recycled water program would be implemented in phases. The initial demonstration phase would determine the construction and operating requirements for the full-scale treatment and delivery facilities and would provide the business case and due diligence for determining whether to proceed with the implementation of a full-scale regional recycled water system. A full-scale program to purify and reuse water up to 150 mgd for the recharge of groundwater basins would be implemented in phases.

The initial demonstration phase would consist of:

- A one mgd demonstration project at the JWPCP plant site to optimize the advanced treatment processes for a full-scale facility that would purify JWPCP secondary effluent into a supply that is of a high quality suitable for indirect potable reuse through groundwater replenishment purposes.
- Feasibility studies for constructing the first phase of a large-scale program, a facility capable of producing 60,000 acre-feet of recycled water per year to recharge groundwater basins in Los Angeles and Orange Counties. These feasibility studies will evaluate the right-of-way, environmental and regulatory compliance, and construction for a treatment plant, delivery facilities, and groundwater injection wells. In addition, Metropolitan will coordinate with the member agencies and groundwater basin managers on the appropriate operations and deliveries for the recharge of groundwater basins.
- Financing plan to determine the capital and O&M funding required for the phases of the large-scale project. Metropolitan and Sanitation Districts would also jointly pursue state funding through low interest loans and grants.

Next Steps

Staff plans to return to the Board in October to provide additional information and opportunity for discussion and in November to seek authorization for a Memorandum of Understanding with Sanitation Districts to implement a regional recycled water supply program and authorization to proceed with the initial Demonstration Phase.

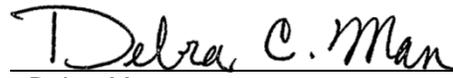
Policy

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

By Minute Item 42287, dated February 11, 1997, the Board adopted a set of policy principles on water recycling.

Fiscal Impact

None



Debra Man 9/10/2015
Assistant General Manager and Chief *Date*
Operating Officer



Jeffrey Rightlinger 9/14/2015
General Manager *Date*

Ref# wrm12638118