THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Operations Groups

- **Operations Monthly Activities for September 2024**

Summary

This monthly report for the Operations Groups provides a summary of activities for September 2024 in the following key areas:

- Enhance Workforce Safety
- Manage Business Operations, Budget, and Staffing
- Develop New Solutions to Enhance Operational and Business Processes
- Provide Reliable Water Deliveries and Manage Storage
- Develop New Supplies and Optimize System Flexibility
- Protect Source Waters and Ensure Water Quality Compliance
- Optimize Water Treatment and Distribution
- Protect Infrastructure and Optimize Maintenance
- Optimize Asset and Maintenance Management
- Ensure Power and Environmental Regulatory Compliance
- Enhance Emergency Preparedness and Response
- Advance Education and Outreach Initiatives
- Engage with Member Agencies and Other Stakeholders on Technical Matters

Purpose

Informational by the Operations Groups on a summary of key activities for the month of September 2024

Attachments

Attachment 1: Detailed Report – Operations Groups' Monthly Activities for September 2024

Date of Report: October 7, 2024

Operations

Operations Groups

Core Business Objectives

Enhance Workforce Safety

The Desert Safety Committee consists of Desert employees; Desert managers; Safety, Regulatory, and Training (SRT) staff; and a Union representative. The committee meets regularly to assess safety recommendations from staff and track progress of safety-related projects. The committee met in September as part of the ongoing commitment to open communication and collaboration on safety.

Desert Safety Committee Meeting

Manage Business Operations, Budget, and Staffing

Business Management Team (BMT) is working with Fleet to prepare Operating Equipment entries for FY 2025/26 into Questica with guidance from the Budget Unit. The BMT is bridging the gap between Accounts Payable and the Business Support Teams in the Operations groups by setting up a monthly forum to discuss key topics and help prevent issues that may arise related to invoice processing. Monthly informational sessions are also being held on various personnel topics with guest speakers to discuss administrative changes and share information.

Develop New Solutions to Enhance Operational and Business Processes

In preparation for rollout of Metropolitan's zero-emission vehicles (ZEV), several teams have been piloting ZEVs to determine best use of the technology and gain feedback. For the past three months, the Jensen Treatment team has utilized a Ford Lightning to complete operations at the treatment plant. This use case demonstrates the application of new technology and its practical functionality. This zero-emission truck has received positive feedback from staff and charging has been effective to maintain continuous utilization by staff in their operation of the treatment plant.

Integrating a zero-emission truck for Jensen plant operations

Provide Reliable Water Deliveries and Manage Storage

Metropolitan member agency water deliveries were 137,800 acre-feet (AF) for September with an average of 4,600 AF per day, which was about 100 AF per day lower than in August. Metropolitan continued delivering water to the Cyclic and Conjunctive Use Programs. Treated water deliveries were 7,000 AF lower than in August, for a total of 73,400 AF, or 53 percent of total deliveries for the month. The Colorado River Aqueduct (CRA) pumped a total of 98,000 AF in September. State Water Project (SWP) imports averaged 3,000 AF per day, totaling about 89,400 AF for the month. The target SWP blend is 25% for Weymouth, Diemer, and Skinner Plants.

Metropolitan expects to have sufficient SWP and Colorado River supplies to meet demands in 2024. Water continues to be managed according to Water Surplus and Drought Management (WSDM) principles and operational objectives with an emphasis on positioning SWP supplies to meet future demands in the SWP-dependent areas. Metropolitan has resumed deliveries to Desert Water Agency and Coachella Valley Water District with the improved supply

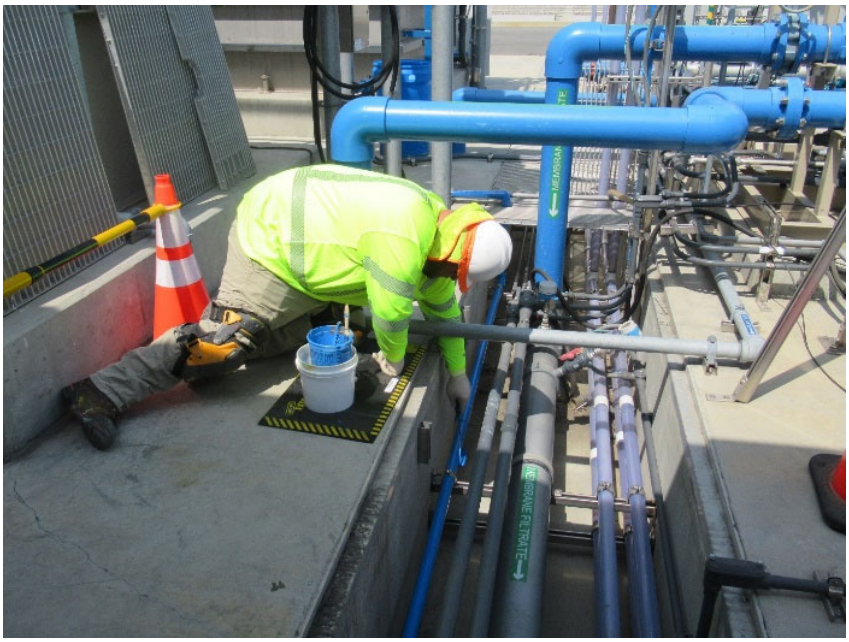
conditions. Metropolitan is continuing to minimize the use of Table A supplies this year to improve SWP Carryover for next year.

Develop New Supplies and Optimize System Flexibility

Staff completed a white paper, *"Roadmap for Direct Potable Reuse: Considerations for Implementing DPR through the Pure Water Southern California Program"*. This document outlines the role of DPR in the PWSC program, the implications of newly adopted DPR regulations, and the research and planning needed for successful implementation. It also explores the unique opportunities and challenges of different DPR approaches, specifically raw and treated water augmentation. The paper provides several recommended next steps for Metropolitan to guide future research and implementation strategies. A collaborative effort, the white paper reflects contributions from staff across Water Quality, System Operations, Engineering, and External Affairs, underscoring the teamwork and collective expertise of Metropolitan staff. It was presented to the Board's Pure Water Southern California and Regional Conveyance Subcommittee on September 24.

During September, staff continued baseline monitoring for tertiary membrane bioreactor (MBR) nitrification-denitrification testing at the Pure Water Southern California Napolitano Innovation Center demonstration plant. Staff resolved a biological upset involving partial nitrification loss that began in late June. Staff also returned the reverse osmosis (RO) system to 85% recovery and resolved operational issues with running the RO at the design setpoints.

Staff coated piping at the Grace F. Napolitano Pure Water Southern California Innovation Center in Carson. The coatings applied enhance reliability of the piping system and help with identification of the pipe contents to provide safety awareness for staff working at the facility.



Staff coating pipes at Napolitano Center

Staff continued to perform VOC spike testing using acetone to demonstrate removal in gas and liquid forms and confirm operational setpoints to support full-scale permitting and future direct potable reuse testing. Metropolitan staff supported Los Angeles County Sanitation Districts emissions testing to support future environmental permitting of the full-scale system.

Staff replacing cartridge filters ahead of reverse osmosis system (left) and collecting samples during VOC spike testing (right)

Protect Source Waters and Ensure Water Quality Compliance

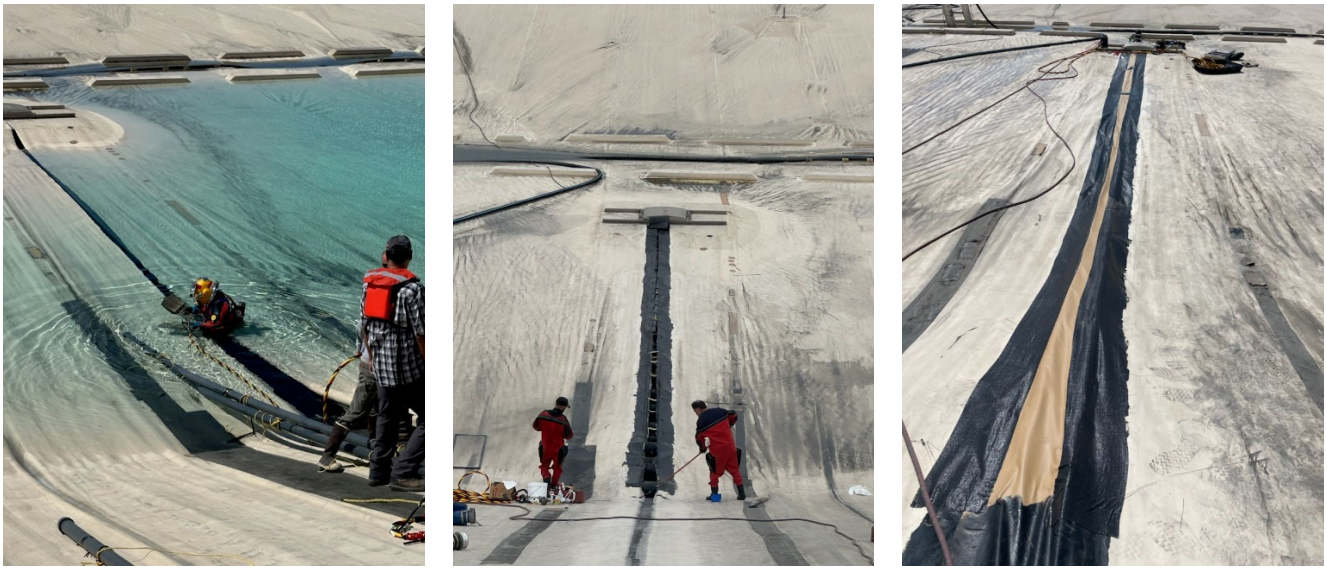
Metropolitan complied with all water quality regulations and primary drinking water standards during August 2024.

On August 29, Metropolitan participated in a Municipal Water District of Orange County (MWDOC) Water Quality and Operations Management Workshop that included several MWDOC subagencies. The focus of the workshop was nitrification and how Metropolitan, MWDOC, and the subagencies were addressing nitrification in their systems. Discussion topics included a review of the state of the science of nitrification, distribution systems, operational considerations, and mitigation strategies that included how agencies can collaborate to tackle this system-wide issue. Metropolitan staff participated in the workshop and provided presentations. A follow-up workshop will be held on October 1.

On September 11, staff attended a Nevada Environmental Response Trust Feasibility Study Roundtable discussion in Las Vegas, Nevada. The meeting focused on reviewing draft information on the preliminary screening of remedial technologies for chemicals of potential concern in soil and groundwater, including perchlorate, at the Trust site in Henderson, Nevada. Discussions centered on evaluating potential remediation options, addressing stakeholder input, and preparing for the upcoming Feasibility Study Report.

On September 12, staff participated in the annual Clean Colorado River Sustainability Coalition meeting in Lake Havasu City, Nevada. This meeting covered updates and discussions on various initiatives aimed at protecting and sustaining the Colorado River ecosystem. The discussions contribute to Metropolitan's ongoing efforts to monitor and address water quality concerns along the Colorado River to ensure continued safety and reliability of water supplies.

The floating cover at Garvey Reservoir experienced a large tear along a seam while staff were walking on the cover completing routine maintenance. A staff member wearing personal protective equipment fell into the reservoir but was quickly and safely assisted out. Staff and management immediately responded to assess safety concerns and evaluate potential water quality impacts from the tear. Urgent repairs were made to restore normal operations, and additional monitoring was conducted to confirm no water quality impact resulting from the tear. The event was also promptly reported to the state's Division of Drinking Water. Staff's quick thinking, expertise and teamwork ensured no operational issues and safeguarded the integrity of the reservoir.



Reservoir floating cover ripped open (right), staff repairing the cover (middle), and repaired cover (left) at the Garvey reservoir

Optimize Water Treatment and Distribution

The SWP target blend entering the Weymouth and Diemer plants stayed at 25 percent in September. The SWP blend entering Lake Skinner remained at 25 percent. Flow-weighted running annual averages for total dissolved solids from July 2023 through June 2024 for Metropolitan's treatment plants capable of receiving a blend of supplies from the SWP and the CRA were 460, 535, and 475 mg/L for the Weymouth, Diemer, and Skinner plants, respectively.

At the Diemer plant, staff wired the control panel for a sodium hypochlorite feed pump as part of a chemical injection system that will be used at the OC-88 pump station to control nitrification. Nitrification is a process of biological conversion of ammonia to nitrite within chloraminated water systems, potentially causing a decrease in chloramine residual. Under more serious nitrification events, there can be a notable decrease in chloramine residual that allows bacterial growth. This chemical feed system was designed to inject sodium hypochlorite directly into the Allen-McColloch Pipeline at OC-88 to help maintain a target chloramine residual and minimize nitrification.

Staff is working on a nitrification control chemical feed system

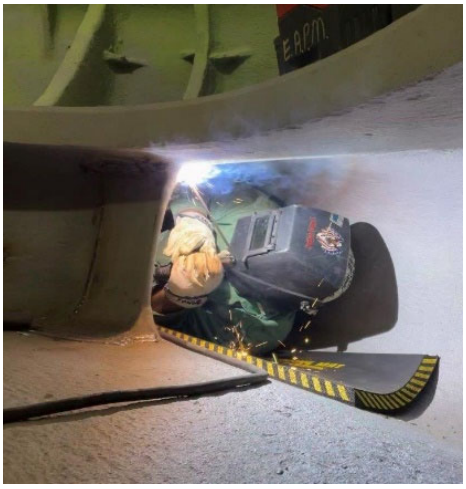
Staff continued upgrading the 240V electrical distribution panels at the Skinner Administration Building and a Service Building which houses the Skinner Fleet, Mechanical, and Electrical Teams. The existing panels are original equipment from the 1970s which are obsolete and beyond their useful life. The replacements will ensure safe and reliable electrical distribution for critical control room and maintenance shop operations.

Staff replacing electrical distribution panel in the Mechanical, Electrical, and Fleet shop at the Skinner plant

Protect Infrastructure and Optimize Maintenance

Pump maintenance team and pump plant staff worked together at the Eagle Mountain pump plant to disassemble the Unit 9 pump. The pump was removed from service and will undergo maintenance to repair or replace worn components. Pump plant staff removed a lubrication oil pump for repair. The lubrication system ensures the 12,500hp motor and pump bearings are lubricated during operation. Proactively maintaining the auxiliary systems mitigates the risk of costly repairs to the CRA main pump units. Data collected throughout this maintenance will be analyzed by Engineering to help determine the scope of the CRA Main Pump Rehabilitation capital project.

Removing the rotor and hydraulic jacks from Eagle Mountain Unit 9 stator



Removing a lubrication pump and motor for rebuild (left), splitter welding to build up worn areas (middle), and splitter weld repairs completed and ready for coating repairs (right)

The desert coaters installed temporary containment specifically designed for blasting pump bowls. For this application, this containment is quicker to assemble than traditional speed rails and shrink wrap type of containment. It is also less likely to be breached while blasting. This ridged containment is built in 4’ x 4’ sections and incorporates a personnel access door, plexiglass viewing window, interior lighting, and ventilation equipment access.


Installing pump bowl containment at Eagle Unit 9 (left), and a look inside the containment (right)

Staff began installation of an infiltration basin and drainage piping to capture the Service Connection WB-06 Valve Structure sump pump discharge water. Installation of this basin will allow the sump pump drainage water to percolate into the soil and eliminate water discharge onto the public street.


Excavating for percolation test pit (left) and conducting percolation test (right)

Operations (continued)

Staff completed the installation of new communications infrastructure on the Auld Valley Pipeline as part of a SCADA Network upgrade to enhance network reliability and security. The local utility service provider will install a new fiber communications line to complete the project.

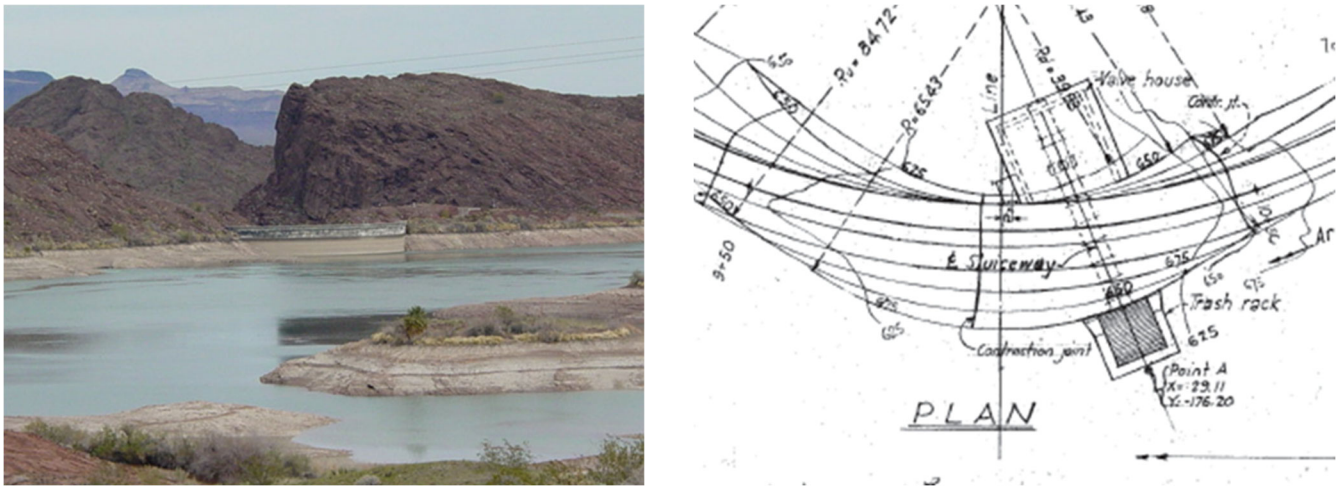
Potholing for existing utilities (left) and backfilling over new conduit for fiber optic cable (right)

Staff completed installation of a replacement mobile chlorinator connection and feed line at the Lake Mathews Outlet Tower. This secondary sodium hypochlorite feed point is utilized quarterly to allow the mobile chlorination unit to apply sodium hypochlorite to the outlet tower. This is a critical operation to control quagga mussel growth between the outlet tower and forebay. Continuous chlorination is utilized at the forebay to control quagga mussel growth downstream of the forebay and through the Upper and Lower Feeders to the Weymouth and Diemer treatment plants.

Fabricating the pipe supports (left) and completed chlorination line with coated containment piping (right)

Operations (continued)

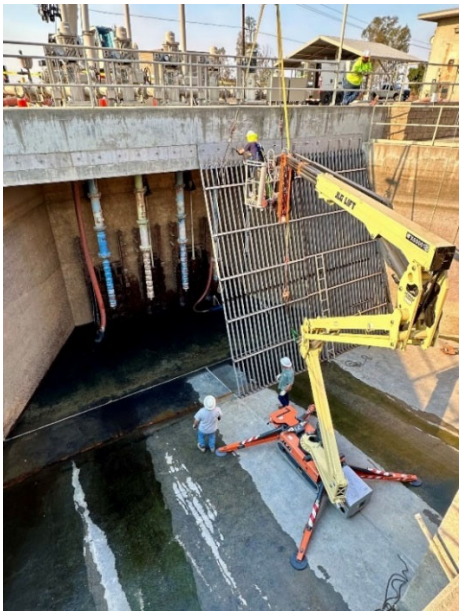
The La Verne Shops completed an inspection of the inlet side of the Gene Wash Dam fixed cone valve using an underwater remote-operated vehicle (ROV). The valve, which is submerged 100 feet under water, will be operated next month to perform a full-flow operational test. The inspection was completed to verify there was no large debris or obstructions on the inlet side of the dam's fixed cone valve.



Gene Wash Dam (left) and plan view of valve location (right)

Inspection of valve inlet trash rack

Staff completed installation of a new trash rack for the East Lake Skinner Bypass structure. This structure transitions the San Diego Canal into raw water pipelines that feed San Diego County Water Authority. Metropolitan staff built and installed the trash rack that is used to prevent debris from entering the San Diego pipelines while the lake bypass is in operation.



Staff installing a new trash rack at the East Lake Skinner Bypass

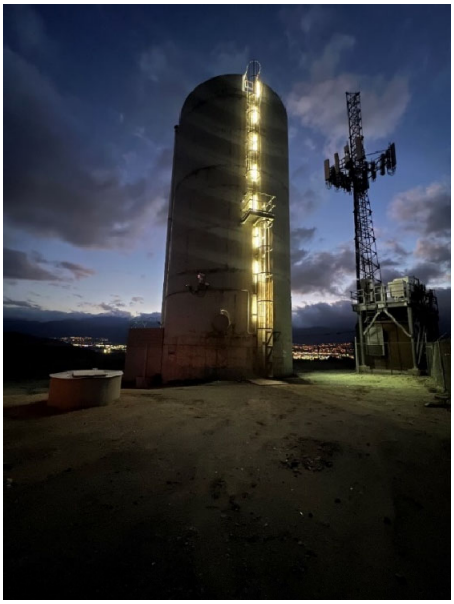
The Weymouth Mechanical Team installed two drop gates that isolated six filters from service. The filters were isolated and removed from service to allow staff to replace the influent and effluent valve on one for the filters. Following the valve replacement, plant staff worked with water quality staff to complete disinfection and bacteriological testing of the filters prior to being placed back into service. Over the next 12 months, a similar procedure will be followed to replace additional filter valves as part of the Weymouth Basin 5-8 Rehabilitation capital project.

Mechanics removing filter effluent channel drop gate at the Weymouth plant

Skinner staff replaced existing bollards surrounding a fire hydrant in a high traffic area with taller bollards. This will improve safety by increasing visibility of the protective devices when traveling through the area, as the shorter bollards have been hit in the past.

Replacement of bollards protecting fire hydrant with new, taller bollards for increased protection and visibility

The Mills Electrical Team installed lighting on Temescal and Corona power plant towers located on the Lower Feeder in Corona, between Lake Mathews and the Diemer plant. These towers are often accessed at night to complete operational activities. This lighting improvement will provide necessary illumination improving staff safety and accessibility.



Temescal tower lighting improvements with the sun setting in the west

Optimize Asset and Maintenance Management

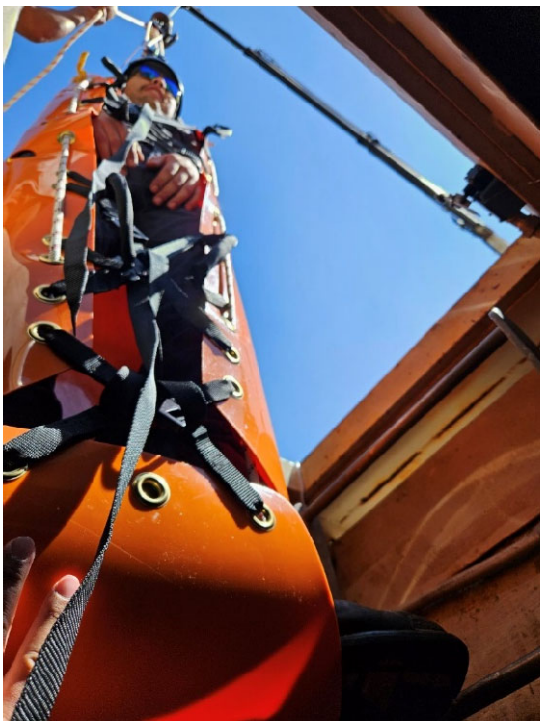
Staff installed a new Human Machine Interface (HMI) on the local control panel of the Ozone Contactor maintenance air compressor system. A Human Machine Interface (HMI) serves as a user interface that allows humans (staff) to interact with machines and/or systems by providing a visual way to monitor and control processes. The HMI essentially acts as a bridge between the operator and the machine, simplifying complex operations and improving efficiency, safety, and productivity through intuitive displays and controls. This installation enhances the local monitoring and troubleshooting capabilities for the critical air compressor system, which is essential for purging residual ozone gas when the system is taken out of service, ensuring a safe environment for workers.

Staff installing Human Machine Interface (HMI) for interactive control and data related to the ozone contactor air compressor system

Enhance Emergency Preparedness and Response

During the week of August 26, the Water Quality Incident Command Post collaborated with Metropolitan's Emergency Operations Center and participated in the USEPA Water Laboratory Alliance Full-Scale Exercise that provided staff with essential hands-on training in standardized emergency communication pathways and continued experience in emergency response actions.

A vendor provided extraction device training at Garvey Reservoir to train staff in the event an employee must be safely lifted from a pipeline or sub-structure. The certified instructor held a field session on using extraction devices, followed by hands-on exercises to safely lift an employee wrapped in a specialized stretcher using a crane or tripod. This class satisfies Cal/OSHA's requirement for annual confined space rescue.



Extraction training from a substructure

Advance Education and Outreach Initiatives

On August 26, staff at the Diemer plant conducted a tour for MWDOC and the Orange County Grand Jury, a body impaneled annual to investigate and report on county criminal and civil matters. The tour provided participants valuable insight into the plant's operations, highlighting key water treatment processes and the staff's commitment to maintaining public safety and water quality.

Staff conducted a tour for MWDOC and the Orange County Grand Jury

Engage with Member Agencies and Other Stakeholders on Technical Matters

Metropolitan hosted a group of young professionals from Japan Water Works Association, whose trip was coordinated through the American Water Works Association (AWWA). Various staff members provided presentations on risk assessment, source water protection, treatment process, and operation and maintenance of the conveyance and distribution system.