



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Board Report

Water System Operations Group

• Operations Monthly Activities for April 2024

Summary

This monthly report for the Water System Operations Group provides a summary of activities for April 2024 in the following key areas:

- Enhance Workforce Safety
- Develop Workforce and Prepare Employees for New Opportunities
- 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
- Manage Power Resources and Energy Use in a Sustainable Manner
- Protect Source Waters and Ensure Water Quality Compliance
- Optimize Water Treatment and Distribution
- Protect Infrastructure and Optimize Maintenance
- Ensure Power and Environmental Regulatory Compliance
- Enhance Emergency Preparedness and Response
- Prepare for Future Legislation and Regulations
- Advance Education and Outreach Initiatives
- Engage with Member Agencies and Other Stakeholders on Technical Matters

Purpose

Informational by the Water System Operations Group on a summary of key activities for the month of April 2024

Attachments

Attachment 1: Detailed Report – Water System Operations Group’s Monthly Activities for April 2024

Operations

Water System Operations

Core Business Objectives

Enhance Workforce Safety

A near-miss is an incident that did not result in injury but could have the potential to if not addressed in a timely manner. Recently, a Metropolitan meter vault was being replaced, while a nearby agency pipe discharged a large volume of water that quickly flooded the 25-foot-deep vault. No staff were injured, and no one was within the vault at the time of the discharge. Review of this near-miss incident resulted in several positive recommendations, including construction of a new berm to prevent water intrusion, safety hazard awareness training for area staff, and installation of warning signs at the structure. Additional long-term recommendations are currently being developed. These near-miss recognitions and reviews are important to identify areas for safety improvements and to safeguard staff.



New berm built to prevent water intrusion into the vault



New warning sign to alert staff not to enter structure without top support

Staff completed the modification of the approach apron to provide safe access to a pump well structure on the Middle Feeder. The structure access hatch, ventilation piping, and sump piping were raised to accommodate the concrete apron, and the site was restored.



Staff excavating concrete slab area (left) and reinforcing wire installation (right) to enhance safe access at a Middle Feeder structure

Develop Workforce and Prepare Employees for New Opportunities

Staff continued work on modifications to the new Electrical Apprentice classroom at the Apprenticeship Training Center, located at the former Diamond Valley Lake (DVL) Visitor Center. The apprentices will have increased room in the new space, leading to a better training and learning environment. The work includes installing new receptacles for the electrical apprenticeship trainers and emergency shut-off switches for safety.



Staff installing a new cut-in box (left) and electrical conduit (right)

Manage Business Operations, Budget, and Staffing

The Business Management Team held a quarterly meeting in April to discuss budget updates and prepare for year-end reporting activities. It is essential to meet year-end due dates to ensure that expenditures are captured for the correct period. The Budget Unit also discussed the Board's approval of Metropolitan's biennial budget for Fiscal Years 2024/25 and 2025/26.

Develop New Solutions to Enhance Operational and Business Processes

Staff successfully shut down the Inland Feeder and Wadsworth pumping plant yard piping to enable a contractor to tie in and complete the Eastside Pipeline intertie at Wadsworth pumping plant in Winchester. The newly constructed bypass will allow the Wadsworth pumping plant to release water from Diamond Valley Lake into the southern portion of the system while simultaneously pumping water north towards Devil Canyon. This is one of four projects that will provide the Rialto Pipeline with a new source of water during drought periods.



Newly constructed bypass encased in concrete to tie into existing piping at Wadsworth pumping plant at DVL

Provide Reliable Water Deliveries and Manage Storage

Metropolitan member agency water deliveries were 79,800 acre-feet (AF) for April with an average of 2,660 AF per day, which was about 140 AF per day higher than in March. As a result of the increased State Water Project (SWP) allocation, Metropolitan has recently started the Cyclic and Conjunctive Use Program deliveries. Treated water deliveries were 7,300 AF higher than March for a total of 44,000 AF, or 55 percent of total deliveries for the month. The CRA pumped a total of 69,000 AF in April. SWP imports averaged 500 AF per day, totaling about 14,900 AF for the month. The target SWP blend is 0 percent 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 to position SWP supplies to meet future demands in the SWP Dependent Area. Metropolitan has resumed deliveries to Desert Water Agency and Coachella Valley Water District because of the improved supply conditions. Metropolitan is continuing to minimize the use of Table A supplies this year to improve SWP Carryover supplies for next year.

Develop New Supplies and Optimize System Flexibility

During April, staff continued baseline monitoring for tertiary membrane bioreactor (MBR) nitrification-denitrification testing at the Pure Water Southern California Napolitano Innovation Center (NIC) demonstration plant and maintained stable MBR and reverse osmosis (RO) process performance at target operating conditions. Staff also continued to optimize the carbon dosing system to efficiently achieve MBR filtrate nitrate targets. Comprehensive monitoring of source water, RO concentrate, product water, and key intermediate process locations was completed to characterize performance of the treatment train.



Staff collect samples to evaluate performance of the MBR-based treatment train at the NIC demonstration plant

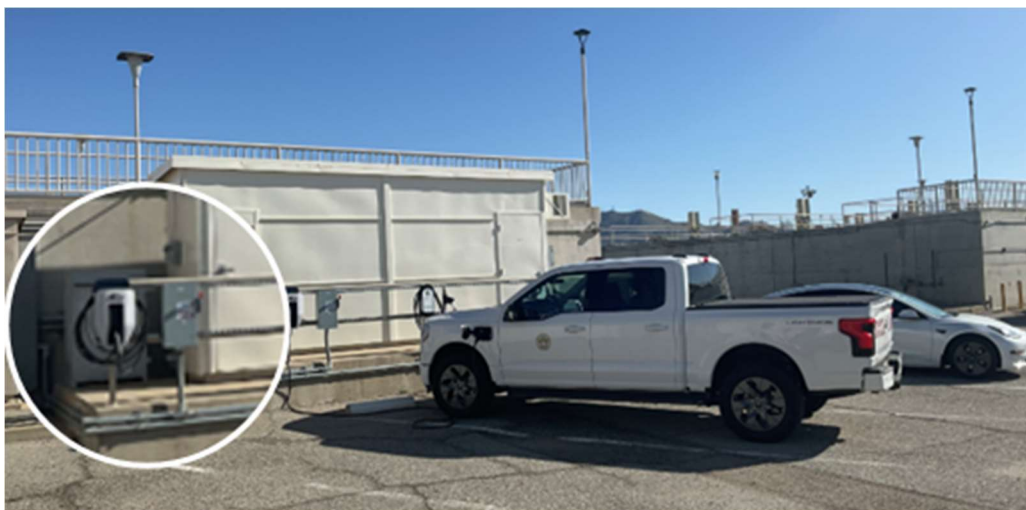
Manage Power Resources and Energy Use in a Sustainable Manner

Energy markets in April 2024 reflected the relatively mild winter of 2023/24 and relatively plentiful natural gas supplies. Natural gas prices fell from their normal winter price range of \$5–10 per Metric Million British Thermal Unit (MMBtu) range into the \$2-5 per MMBtu range, with electricity prices in the California Independent System Operator (CAISO) market following suit. Longer daylight hours and increased solar generation, coupled with relatively low springtime electricity demands, helped keep electricity prices on average in the \$20–40 per megawatt-hour (MWh) and drove prices negative during the high solar hours from 10 AM to 4 PM. No significant energy pricing events occurred either in the western U.S. or nationwide.* Summer electric and capacity price forecasts are also trending lower.

The CRA resumed operation following the March shutdown, averaging five pumps. Reduced water demand and nearly full storage levels at Lake Mathews continued to keep the overall CRA pumping costs trending below budget. The CRA energy cost budget for fiscal year 2023/24 is \$82.6 million; the current cost forecast for the 2023/24 fiscal year is significantly lower at \$44.7 million, because of reduced pumping and lower forward cost curves. Monthly costs are forecast to increase as the CRA returns to a higher scheduled flow and energy prices increase in anticipation of summer.

Metropolitan reached an agreement with Southern California Edison to transfer a block of Import Allocation Rights (IARs) at the Mead 230 kV interconnection for summer 2024. IARs allow for load serving entities within the CAISO to import Resource Adequacy capacity to meet their monthly load serving obligations. Metropolitan possesses IAR capacity at Mead substation in excess of the requirements to meet CRA pumping load for summer 2024; IAR capacity expires without value if not used. This transaction has an approximate value of \$1.6 million for Metropolitan.

Staff installed a bank of five electric vehicle (EV) chargers at the Mills plant. The chargers will support two Ford Lightnings assigned to the plant. The Mills plant is located between the Desert facilities and Union Station headquarters, providing a safe and reliable place for Metropolitan vehicles to charge. Mills plant staff, with the support of Fleet Services, is also planning to install a “supercharger” station which will allow rapid charging for Metropolitan employees traveling between facilities.



Five new EV chargers installed at Mills plant

Protect Source Waters and Ensure Water Quality Compliance

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

On April 10 and 11, staff participated in an annual stakeholder meeting on perchlorate cleanup at the Nevada Environmental Response Trust site in Henderson, Nevada. The Trust and the Nevada Division of Environmental Protection updated stakeholders on the status of the Remedial Investigations and Risk Assessments for Operable Units, administrative and financial matters, and stakeholder engagement plans for 2024. The meeting included a site tour of the Trust site, the nearby Endeavour cleanup site, and Las Vegas Wash discharge areas. Perchlorate remediation efforts in Henderson are critical to ensure continued protection of Colorado River water supplies. Metropolitan routinely monitors perchlorate levels at the Las Vegas Wash and its CRA intake. Levels at the CRA intake typically remain below 2 µg/L, well below California's perchlorate maximum contaminant level of 6 µg/L.



Site visit to fluidized bed reactors used for perchlorate treatment in Henderson, Nevada

Optimize Water Treatment and Distribution

In April, the SWP target blend entering the Weymouth and Diemer plants, and Lake Skinner, was zero percent. The SWP blend leaving Lake Skinner decreased from approximately 65 to 40 percent, after the release from DVL to Lake Skinner was discontinued at the beginning of the month. Lake Skinner was bypassed from mid-April to the end of the month to support the shutdown of San Diego raw water pipeline No. 3.

Flow-weighted running annual averages for total dissolved solids from March 2023 through February 2024 for Metropolitan's treatment plants capable of receiving a blend of supplies from the SWP and the CRA were 345, 430, and 470 mg/L for the Weymouth, Diemer, and Skinner plants, respectively.

Staff repaired the fish screen Programmable Logic Controller (PLC) at DVL. The fish screens create an electrical field in the water that prevents fish in the lake from swimming near the Inlet/Outlet Tower while water is being withdrawn from the lake.

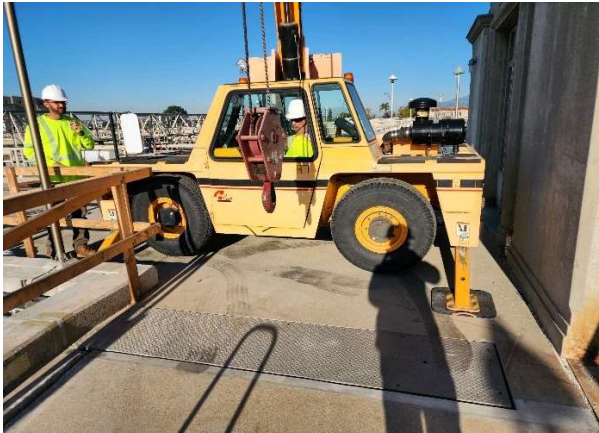


Staff repairing instrumentation PLC for the fish screens at DVL

Operations

(continued)

Staff installed a drop gate as isolation for the ongoing Weymouth Basins 5–8 capital project. The gate is an area with limited access and is directly above the basin effluent channel. Plant and engineering staff worked together to establish a safe crane placement location. Together, they were able to identify a location that could support the weight of both the crane and the suspended gate. This allowed staff to complete the work safely and effectively, without renting expensive specialty equipment.



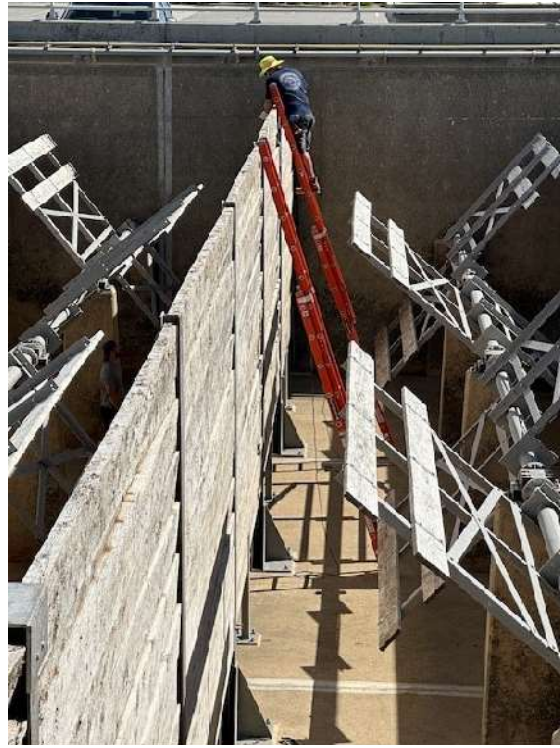
Crane that was used for basin refurbishment at the Weymouth plant

Staff worked with Engineering Services to survey existing fiber optic cables at the Diemer plant as part of the SCADA Upgrade capital project. The survey will determine whether the existing fiber optic cables can support the new SCADA system upgrade or whether some of the existing cables need to be replaced.



Staff opening vaults and cabinets to identify fiber optic cables

Staff improved baffle board anchoring at the Diemer plant within the sedimentation basins. The baffle boards reduce the velocity and turbulence of water flowing through the sedimentation basins by spreading the flow across the entire width of the basin. Given the material weight, the baffle boards could slide out of their support columns when filling an empty basin. By improving the anchoring mechanism, the boards remain in place, which improves operating efficiency and avoids replacement of loose boards.

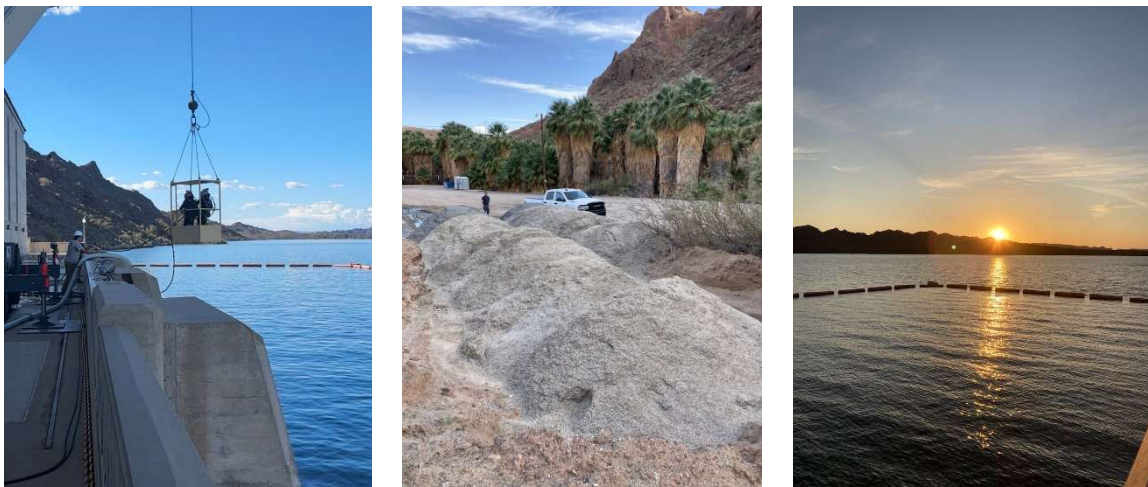


Staff securing baffle boards inside the sedimentation basin at the Diemer plant

Protect Infrastructure and Optimize Maintenance

This month, staff completed installing and commissioning modernized transformer bank protection relays at Iron Mountain pumping plant. Protection relays are high-speed devices that isolate and contain high-voltage faults to prevent widespread damage or cascading events that could create a hazardous condition. The modernized system allows for enhanced event recording and fault data capture, which aids in both regulatory reporting and system troubleshooting.

The La Verne Shops received a request to support activities during the 2024 CRA Shutdown. Those activities consisted of divers dredging the galleries at the Intake pumping plant, repairing a damaged portion of the buoy line, and supporting emergency repairs of a slide gate at Copper Basin. All planned work was completed successfully.



Divers being lowered in the water to dredge galleries (left), removed debris (center), and the repaired buoy line (right) at Intake pumping plant



Damaged gate shaft (left and center) and as-found actuator assembly (right) for the gate at Copper Basin



New bevel gear (left) and repaired actuator assembly (center and right) for gate at Copper Basin

The 230kV main transformers are some of the oldest operating pieces of equipment in the CRA system. The transformers are oil-filled, and regular testing is conducted to assess fluid quality. Metropolitan owns a sophisticated oil purification system to restore the oil to factory specifications when needed. Staff at the Gene pumping plant perform maintenance on the oil purification system before processing transformer oil.



Staff maintaining the oil purification unit prior to operation

The CRA Desert pumping plants undergo constant repairs and upgrades to bring the aging systems up to current standards. A capital project in the Desert Region to replace the main motor room crane at each pumping plant is wrapping up with the replacement of the last crane at Intake pumping plant.



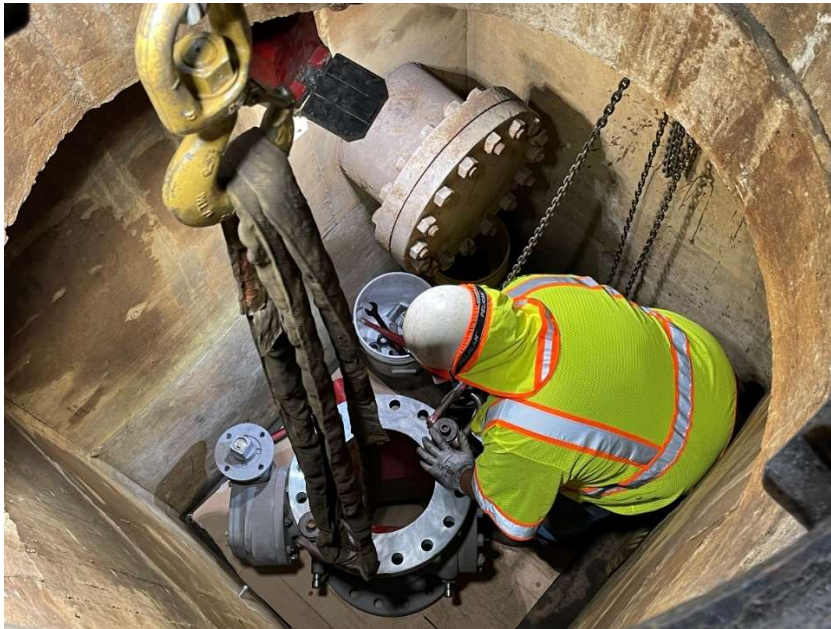
Motor room main crane replacement at Intake pumping plant

The harsh environment and temperature extremes of the Desert Region can quickly degrade equipment. Consistent maintenance ensures that Metropolitan obtains the maximum life expectancy of its assets. Staff repaired a valve in the cooling circulating water system for the CRA main pump motors.



Staff repairing a circulating water valve at Gene pumping plant

Staff recently completed a shutdown on a 15-mile portion of the 36-inch Orange County Feeder from the Weymouth plant to the sectionalizing valve at service connection F-6 in the city of Fullerton. During this outage, an internal inspection of the pipeline was performed, and two minor mortar repairs were identified and completed. This outage also provided the opportunity to replace several faulty valves throughout the shutdown zone.

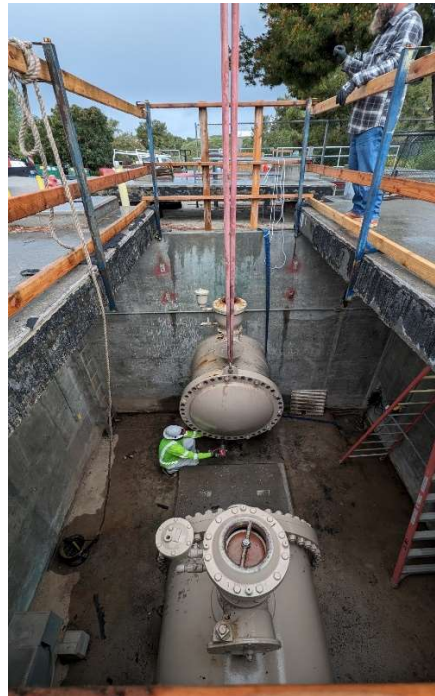


Staff installing a new lubricated plug valve on the Orange County Feeder

Staff removed the Allen-McColloch Pipeline (AMP) from service to allow relining of the pipeline in key areas. A previous inspection showed multiple wire breaks of the prestressed concrete cylinder pipe (PCCP). This shutdown allowed multiple contractors access to reline portions of the pipeline and ensure its structural integrity.



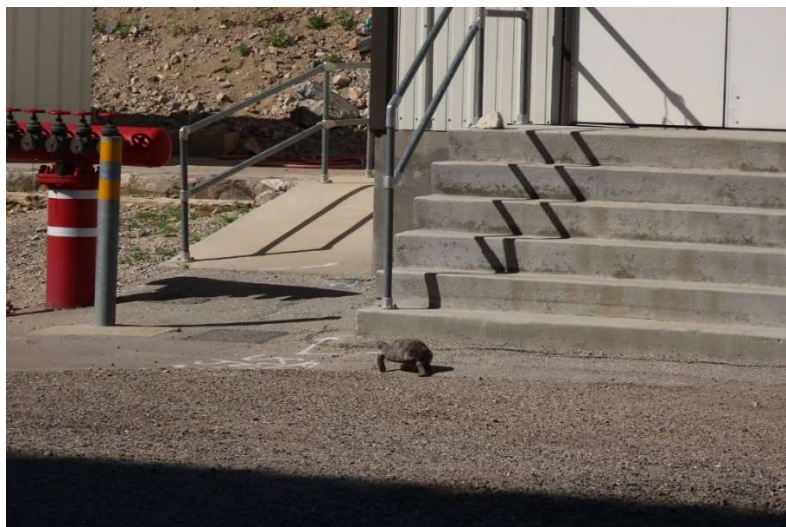
Staff dewatering the AMP to prepare for relining work



Staff removing flanges to provide access for contractors to complete relining work for the AMP

Ensure Power and Environmental Regulatory Compliance

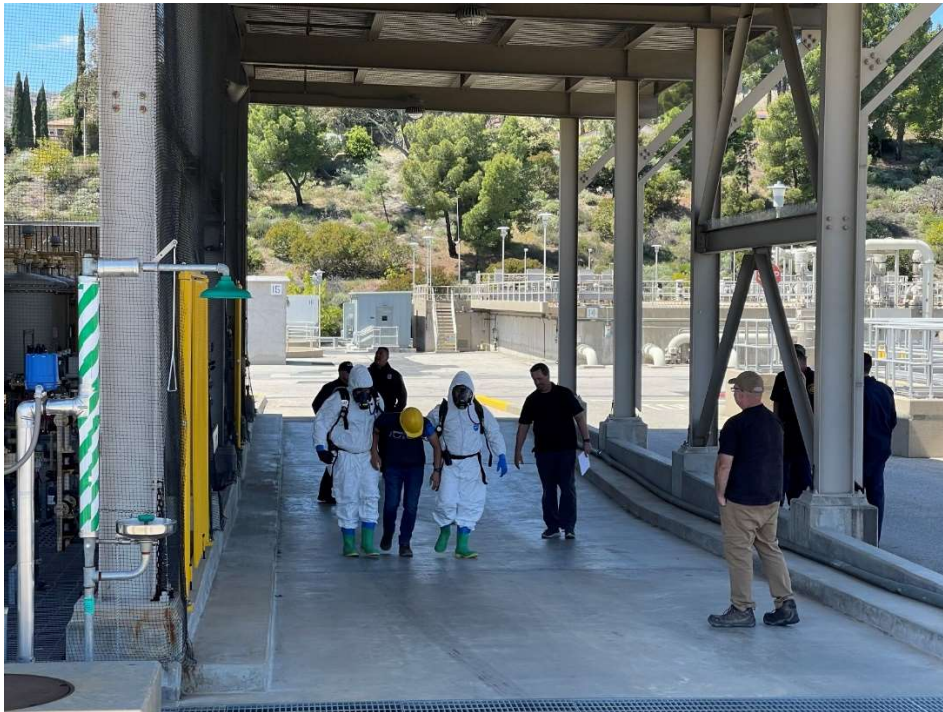
New storage buildings are being built at several of the Desert Region's pumping plants. Projects of this size require environmental approval and a steady watch for animals entering the work zone. Once installed, temporary fencing will help to keep animals like the desert tortoise safely away from the construction zones.



Temporary fencing to protect desert tortoise and other animals from entering construction zone at Hinds pumping plant

Enhance Emergency Preparedness and Response

Staff partnered with the Los Angeles City Fire Department to complete a joint training and exercise as part of routine chemical responder training at the Jensen plant. This joint exercise provided an opportunity for Metropolitan staff to strengthen our relationship with local fire department staff. All parties gained better understanding of the role each would play during an emergency response related to a chemical leak or chemical exposure requiring worker rescue.



Staff working with Los Angeles City Fire Department to simulate a rescue operation at the Jensen plant

Prepare for Future Legislation and Regulations

On March 18, U.S. Environmental Protection Agency (EPA) published its final rule under the Toxic Substances Control Act (TSCA) that bans the production, importation, and distribution of chrysotile asbestos, the only known form of asbestos that is currently imported into the United States. To date, there are still eight chlor-alkali plants (about one-third of the production capacity) in the United States that still use asbestos diaphragms for the manufacture of chlorine and caustic soda. While the chlor-alkali industry has committed to stop the importation of asbestos and phase out the use of asbestos diaphragms, this action could potentially increase the costs of chlorine and caustic soda used for water and wastewater treatment. Staff worked with AWWA and The Chlorine Institute on implementation delays to support the industry in meeting the phase-out deadlines.

On March 26, staff submitted the first of two comment letters on EPA's two proposals to regulate PFAS under the Resource Conservation and Recovery Act (RCRA). The first proposal revises the definition of "hazardous waste" such that PFAS can be included in corrective actions for treatment, storage, and disposal facilities (TSDFs). Staff's primary concern was that while the rule is focused on TSDFs, the rule could raise the disposal costs of PFAS-laden materials sent to TSDFs and that this was not included in the cost analysis. Staff also asked that EPA adopt formal RCRA

enforcement guidance for TSDFs, such that water utilities are protected against future liability; and that EPA follow the “polluter pays” principle and/or make additional funding available for treatment and cleanup costs.

On April 5, the Office of Environmental Health Hazard Assessment (OEHHA) adopted Public Health Goals (PHGs) for PFOA and PFOS in drinking water. A PHG is the level of a drinking water contaminant that does not pose a significant risk to health with lifetime exposure from all uses of tap water. The PHGs are 0.007 ppt for PFOA and 1 ppt for PFOS. The Division of Drinking Water (DDW) will use the PHGs to develop California drinking water standards for PFOA and PFOS that are as close to the PHGs as possible but still technically and economically achievable for drinking water systems. Staff will closely monitor any future activity by DDW towards regulating these compounds.

On April 8, staff submitted a second comment letter on EPA’s proposals to regulate PFAS under RCRA. The second letter addressed EPA’s proposal to list nine PFAS (PFOA, PFOS, PFBS, HFPO-DA, PFNA, PFHxS, PFDA, PFHxA, and PFBA) and their salts and isomers as “hazardous constituents” under RCRA. A hazardous constituent listing is the first step towards a potential “hazardous waste” listing. If these nine PFAS were to be classified as hazardous wastes under RCRA, they would automatically be classified as hazardous substances under the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA). Similar to comments on the PFAS-CERCLA regulatory effort, Metropolitan emphasized that while we support regulating PFAS, the regulatory community needs guardrails in place (e.g., analytical methods, regulatory limits, and cleanup standards) before regulating these compounds. Staff also reiterated that EPA should follow the “polluter pays” principle. Staff will continue to track any future regulations with respect to PFAS.

On April 10, the EPA announced the final drinking water standards for six PFAS. EPA set individual maximum contaminant levels (MCLs) for PFOA and PFAS at 4 parts per trillion (ppt), and 10 ppt for PFNA, PFHxS, and GenX. EPA will also regulate PFAS mixtures containing at least two or more of PFHxS, PFNA, HFPO-DA, and PFBS using a unitless Hazard Index of one. Lastly, EPA finalized health-based, non-enforceable Maximum Contaminant Level Goals (MCLGs) for PFOA and PFOS at 0 ppt and 10 ppt for PFNA, PFHxS, and GenX. Staff are evaluating these new standards on how they will affect Metropolitan and its member agencies. Initial monitoring must be completed by 2027, and public water systems must implement measures to reduce the levels of PFAS in their systems that exceed the MCLs within five years. To prepare for the required monitoring in Metropolitan’s waters, staff will be developing in-house detection capabilities over the next year. However, based on monitoring results over the last eight years, none of the PFAS included in this regulation have been detected in Metropolitan’s treated water.

On April 11, Representatives Curtis (R-Utah) and Perez (D-Wash.) introduced H.R. 7944—the Water Systems PFAS Liability Protection Act. The bill is narrower in scope than S. 1430 (Lummis), introduced last year which proposed CERCLA liability exemptions for water systems, as well as agriculture, airports, fire suppression users and waste managers. H.R. 7944 only offers exemptions for water and wastewater systems from potential liability for PFAS contamination under CERCLA.

On April 17, DDW adopted a 10 µg/L maximum contaminant level (MCL) for hexavalent chromium. The rule was adopted as proposed (with minor language changes)—10 µg/L MCL; detection limit for purposes of reporting (DLR) of 0.1 µg/L; 2–4 year compliance timelines depending on system size; need for a compliance plan, among other provisions. If approved by the Office of Administrative Law (OAL), the rule will be effective on October 1, 2024. Staff will continue tracking the implementation of the rule. The process of finalizing this regulation has taken over ten years and staff has provided comments to the SWRCB throughout the process, expressing support for the MCL but also noting concerns over the cost of compliance and treatment for some agencies.

On April 19, the EPA published a final regulation listing PFOA and PFOS as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Such listing could expose water utilities to liability and clean-up costs if they detect and must remove PFOA and PFOS from their water supplies. Metropolitan has consistently advocated for water utilities to be protected from CERCLA liability.

Advance Education and Outreach Initiatives

On April 4, staff gave a presentation on Pure Water Southern California at an event hosted by American Society of Civil Engineers, Orange County branch in collaboration with the Environmental and Water Resources Institute, Orange County Chapter in Irvine, California.

Staff also provided a presentation on the sources, treatment, and science of drinking water to high school age students at a youth academy on April 11. Lastly, staff participated in a panel discussion on water quality monitoring and measurement hosted by the Center for Science, Society, and Public Policy at the California Institute of Technology on April 12.

On April 17 and 18, staff provided tours of the Water Quality Laboratory for staff from Metropolitan's office of Equal Employment Opportunities (EEO) and Sustainability, Resilience, and Innovation (SRI) department, respectively. Staff also provided a lab tour for the American Water Works Association Young Professionals Committee on April 25.

Engage with Member Agencies and Other Stakeholders on Technical Matters

On April 18, the Water Quality Section celebrated its 50-year anniversary with a Member Agency Water Quality Managers meeting. The event included invited speakers who provided a retrospective overview on the development of the Safe Drinking Water Act (enacted in 1974) and the formation of the Water Quality and Research Branch (as it was called in 1974), a summary of current water quality issues, and an informed prediction of likely water quality issues and regulations over the next five to fifteen years. This special event included several Metropolitan retirees and a message from Metropolitan's General Manager recognizing the critical role Water Quality staff has played in ensuring Metropolitan's safe water deliveries for southern California.



Presentation on the development of drinking water regulations during a Member Agency Water Quality Managers workshop celebrating the 50-year anniversary of Metropolitan's Water Quality Section

Metropolitan staff began training staff from LACSD's A. K. Warren Water Resource Facility in the operation of the NIC demonstration facility. LACSD will be shadowing Metropolitan staff in routine operation and maintenance activities of each of the unit processes at the NIC. This operational coordination between the agencies also helps to facilitate partnering for potential joint operations of future full-scale advanced water treatment facilities.



Advanced water treatment training for LACSD operations staff from the A. K. Warren Facility