



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Board Report

Operations Groups

- **Operations Monthly Activities for July 2024**

Summary

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

- Enhance Workforce Safety
- Manage Business Operations, Budget, and Staffing
- Develop New Solutions to Enhance Operational and Business Processes
- Ensure Accurate Billing and Support Revenue Generation
- 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
- Optimize Asset and Maintenance Management
- Enhance Emergency Preparedness and Response
- Prepare for Future Legislation and Regulations
- Advance Education and Outreach Initiatives

Purpose

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

Attachments

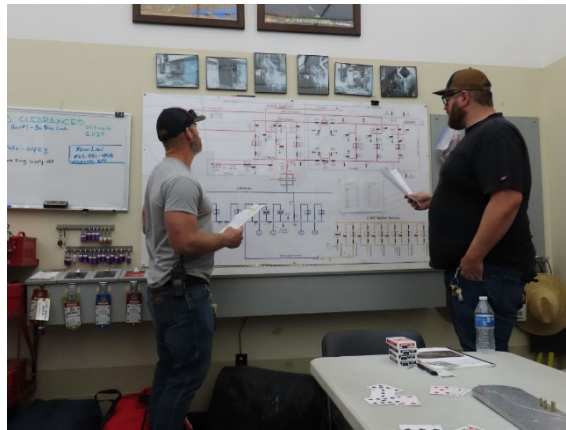
Attachment 1: Detailed Report – Operations Groups Monthly Activities for July 2024

Operations Groups

Core Business Objectives

Enhance Workforce Safety

Hinds pumping plant staff rehearses high voltage switching before performing the actual switching operation in the field. Staff uses a mimic board to ensure understanding of the switching sequence to ensure safe and reliable operations.



Staff rehearse high-voltage switching at Hinds pumping plant

Staff hosted a Safety Day Event at the Soto Street facility to promote safety awareness and to further enhance the safety culture. During this event, many safety improvements were discussed, and staff was recognized for submitting suggestions to improve job safety.



Vendor demonstrating new fall protection equipment

Jensen plant staff participated in a day dedicated to safety featuring several engaging activities. With June being National Safety Month, the Jensen Safety Committee and Management evaluated the plant's safety metrics and overall performance for FY 2023-24. This review also highlighted the Jensen plant's achievement in receiving the 2023 Best in Safety Communication award. The event included several other activities such as safety and pop culture trivia games that kept the competitive juices flowing.



LEFT: Ofelia Perez (Safety, Regulatory, and Training Section Manager) presenting Best in Safety Communication Award to Jeffrey Potter (Jensen Safety Committee Chairperson)

RIGHT: Adam Aranda (Jensen's Safety Rep) presenting to Jensen plant staff

The walkway leading to the middle parking lot at the Skinner plant had wood railings that were over 30 years old and were deteriorated and loose. In response, staff fabricated and installed new steel railings, which were subsequently coated for durability. These newly installed railings now ensure safe and secure access for individuals navigating the stairs.



Newly replaced handrails in parking lot at the Skinner plant

Manage Business Operations, Budget, and Staffing

Fiscal Year 2024–25 has begun with newly created budget books posted on SharePoint for staff to use. Annual evaluations are progressing well; weekly performance evaluation Q&A and informational sessions allowed managers to become apprised of processes, receive clarification, and share thoughts and recommendations. For the month of July, one Operations vacancy has been filled.

Develop New Solutions to Enhance Operational and Business Processes

During July, staff continued baseline monitoring for tertiary membrane bioreactor nitrification-denitrification testing at the Pure Water Southern California Napolitano Innovation Center (NIC) demonstration plant. Considerable time was spent troubleshooting decreased nitrification due to a disturbance in the biological process. Staff conducted advanced oxidation process spike testing using N-Nitrosodimethylamine (NDMA) to demonstrate removal efficiency and verify operational setpoints. These efforts support full-scale permitting and future direct potable reuse testing.



Staff replacing UV lamps for the advanced oxidation system at the PWSC NIC demonstration plant

Ensure Accurate Billing and Support Revenue Generation

Operations staff is working with staff from Finance, Information Technology, and a consultant team to develop the WINS 2.0 application that will eventually replace the current application for invoicing member agencies monthly for water transactions. System Operations staff has been testing the Automatic Meter Reading and Meter Maintenance modules and working with the project team to review various components. Workshops for the new Water Programs module and testing of the previous modules also continued this month.

Provide Reliable Water Deliveries and Manage Storage

Metropolitan member agency water deliveries were 136,300 acre-feet (AF) for July with an average of 4,400 AF per day, which was about 1,000 AF per day higher than in June. Metropolitan continued delivering water to the Cyclic and Conjunctive Use Programs. Treated water deliveries were 17,800 AF higher than in June for a total of 76,300 AF, or 56 percent of total deliveries for the month. The Colorado River Aqueduct (CRA) pumped a total of 99,000 AF in July. State Water Project (SWP) imports averaged 2,900 AF per day, totaling about 88,900 AF for the month. The target SWP blend is 25 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 on positioning SWP supplies to meet future demands in the SWP-dependent areas. Metropolitan continued maximizing deliveries to Desert Water Agency and Coachella Valley Water District. Metropolitan is also continuing to minimize the use of Table A supplies this year to improve SWP carryover for next year for drought reliability.

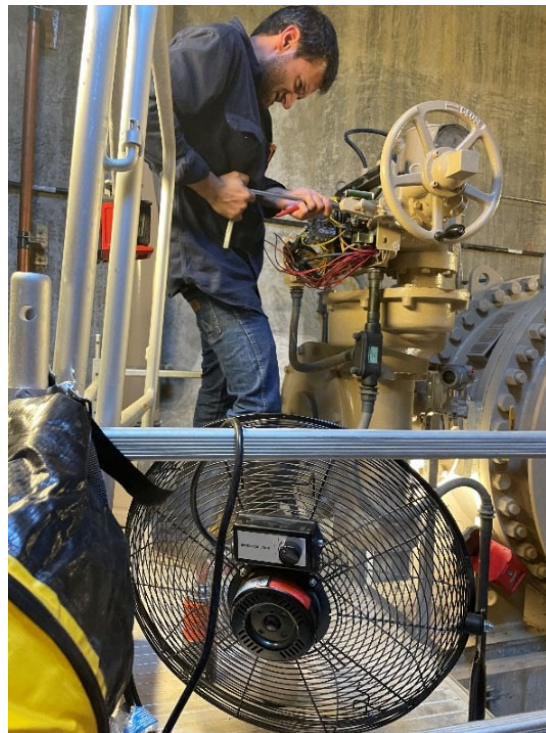
Develop New Supplies and Optimize System Flexibility

Staff coordinated the delivery and storage of three large-diameter butterfly valves that will be installed along the Inland Feeder as part of the Rialto Pipeline Water Supply Reliability Improvements Project. These isolation and sectionalizing valves will route water from Diamond Valley Lake (DVL) toward Devil Canyon and back into the Rialto Pipeline during periods of drought.



Delivery and storage of three 84-inch butterfly valves with actuator (each weighing 60,000 pounds)

Staff is evaluating the operational integrity of the EM-24 service connection valve, used to link the Mills plant to areas east of the 215 freeway in the Riverside area. The valve and meter structures, originally installed in 2010 as part of the Perris Valley Pipeline project, have remained dormant because of environmental constraints that halted the pipeline's completion. Resuming construction late last year, the project will complete the remaining pipeline reach and deliver potable water to Eastern Municipal Water District. Given that the valve has not been operated since its commissioning in 2010, a thorough assessment was conducted by staff. This involved inspection, component replacement, and operation of the valve. The valve was determined to be in a serviceable condition and will be operational following the pipeline's anticipated completion at the end of 2024.



Staff servicing equipment at the EM-24 service connection along the Perris Valley Pipeline

Protect Source Waters and Ensure Water Quality Compliance

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

Optimize Water Treatment and Distribution

The SWP target blend entering the Weymouth and Diemer plants and Lake Skinner remained at 25 percent in July. The blend leaving Lake Skinner has gradually increased over the past few weeks and now matches the blend entering the lake.

Flow-weighted running annual averages for total dissolved solids from May 2023 through April 2024 for Metropolitan's treatment plants capable of receiving a blend of supplies from the SWP and the CRA were 397, 478, and 463 mg/L for the Weymouth, Diemer, and Skinner plants, respectively.

Staff replaced existing end-of-life reduced voltage starters for Lake Skinner Outlet Tower chlorine pumps. The new soft starters gradually increase pump speed, ensuring a controlled build-up of system pressure to meet operational needs. This mitigates the risk of water hammer, a phenomenon that can cause pipe ruptures and leaks because of sudden pressurization. The chlorine pumps are used four times per year for quagga mussel control in the Lake Skinner Outlet Tower and associated Lake Skinner Outlet Conduit.



Staff installing electrical soft starters for Lake Skinner Outlet Tower chlorine pumps

With the southern portion of the Allen-McColloch Pipeline shut down for maintenance, the OC-88 pump station is projected to experience higher flows than usual. Because of this, a temporary power source is necessary to allow two chiller units to function at full capacity so they can provide the required cooling water for additional pumps. Staff used a nearby motor control center to supply temporary power for the additional chiller units.

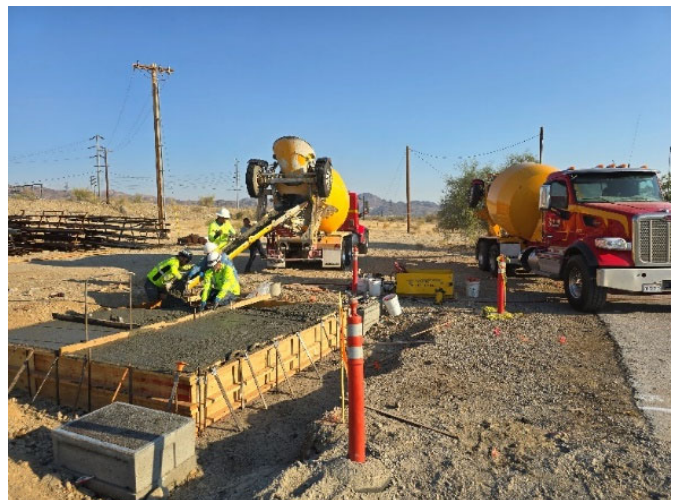


Installing conduit for temporary power at OC-88 pump station

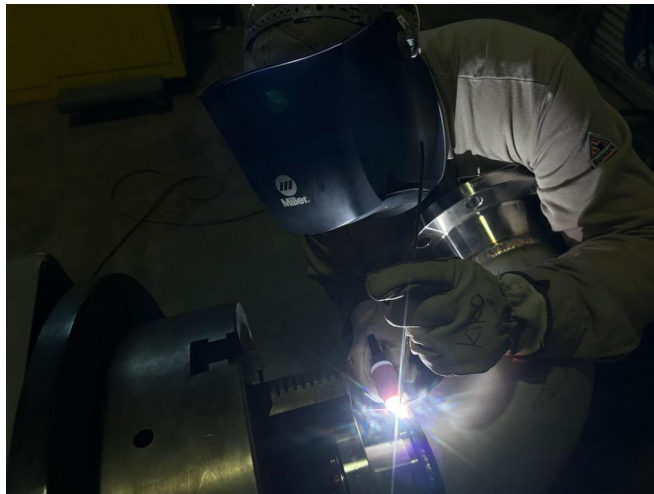
Staff continued construction of the Eagle Mountain Village Domestic Water Loop Chiller System. The piping, controls, and components are being pre-assembled at the Lake Mathews facility to improve the efficiency of the system's installation. Onsite construction of the chiller system is progressing, with placement of buried infrastructure and concrete pads for the chiller unit piping and controls. The system is designed to lower the temperature of the water main loop, which provides potable water to the employee residences at the facility.



Staff excavating trench at the Eagle Mountain village



Staff placing concrete at the Eagle Mountain village

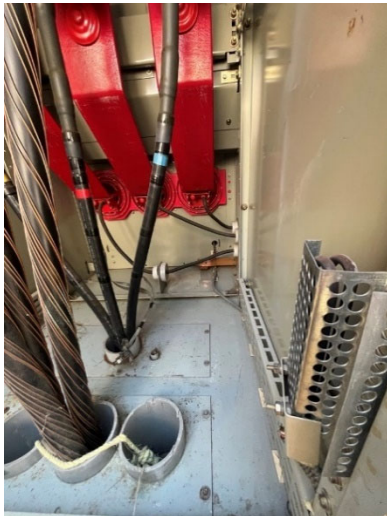


Staff TIG welding stainless steel piping for the chiller system at Eagle Mountain

Protect Infrastructure and Optimize Maintenance

OC-88 Pump Station is a pumping facility on the Allen McCulloch Pipeline, with a flow capacity of up to 175 cfs, which provides water to agencies in south Orange County. OC-88A is a backup pump station on the same site that can provide up to 20 cfs.

When OC-88 Pump Station tripped offline earlier this month, reducing agency flow from 38 cfs to 0 cfs, Metropolitan's Operations Control Center (OCC) promptly started OC-88A to provide a flow of 20 cfs. Staff found that a blown surge arrester, which feeds one of the three main breakers, and the buss providing power to three of the seven pumps were the cause for the trip. Staff immediately began coordination with Southern California Edison (SCE) to safely isolate the plant to establish a clearance and conduct a thorough investigation. Staff also contacted the affected agencies to inform them of the incident and request they lower demand until the issue could be resolved. Staff initially thought they could return the rest of the plant to service to augment flow capacity; however, upon further investigation, the copper buss and motor grounding cables were found missing in all the cabinets. This prompted an immediate response to mobilize staff from other projects to replace the surge arresters, fabricate and install all the buss and grounding cables, and perform testing before the plant could be returned to service.



Missing ground buss



Drilling buss bar for bolting



Installation of new buss



Failed surge arrester on incoming power line



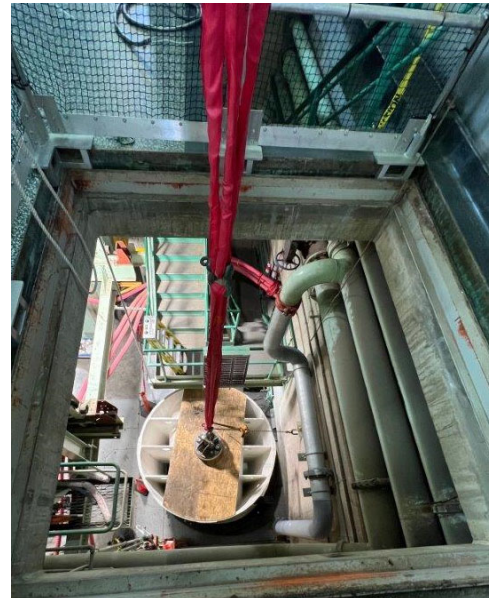
Replacement at OC-88 pump station

Staff installed new office and storage areas at the Hinds pumping plant. This involved constructing pads, placing pre-fabricated buildings, and installing utilities including water, sewer, and electricity.



Installation of storage and office buildings at Hinds pumping plant

Work continues with the Iron Mountain discharge valve rehabilitation. Actuator components for a 42-inch conical plug valve are being manufactured by the La Verne Shops. Desert Pump Maintenance staff prepared the rest of the valve for reassembly. The plug, which has been blasted and recoated, was removed for thickness testing of the metal seating surfaces. The plug weighs approximately 17,000 lbs.



Staff removing a discharge valve plug for inspection and testing at Iron Mountain pumping plant

Hinds pumping plant staff is ready to rack out a 6.9kV circuit breaker. The circuit breakers are part of the annual electrical preventative maintenance for each pump unit. The circuit breakers are inspected, cleaned, lubricated, and tested as part of the maintenance program.



Staff racking out a 6.9kV circuit breaker at Hinds pumping plant

Because of the age of the systems involved, utilities within the Desert facilities require consistent maintenance and repair. Desert staff are currently replacing a 60-year-old drain line in the Iron Mountain common area. This project required trenching approximately 1,000 feet and installing new pipe.



Installation of a new drain line at Iron Mountain

The CRA 230kV transformers use a heat exchanger system to combat high ambient temperatures and heavy electrical loads. The transformer oil is circulated through a crossflow heat exchanger where CRA water is used as a medium to remove heat from the oil. Desert Pump Maintenance staff rebuilt two of the forced oil pumps at the Hinds pumping plant to ensure reliability during the hot summer months.



230kV transformer oil pump disassembled and ready for rebuild



230kV transformer oil pump after rebuild (right)

The electrical team at the Skinner plant reconfigured the trip-unit parameters on five main circuit breakers. These adjustments altered the settings of Reduced Energy Let Through (RELT) switches, which are engaged during electrical maintenance procedures. In the event of an arc flash fault caused by equipment failure, the RELT mode substantially diminishes the electrical current, which will enhance safety for personnel working on or near energized equipment.



Staff testing a de-energized circuit breaker at the Skinner plant

Staff promptly addressed a fluoride leak at a flow meter at the Weymouth plant. This flow meter is integral to measuring chemical injection into the treatment process at the reservoir inlet. The facility's redundant feed systems ensured uninterrupted fluoride injection, thereby maintaining regulatory compliance. The repairs were completed with no injuries or disruptions to the treatment process.



Repairing a fluoride flow meter at the Weymouth plant

Staff performed functional testing of the San Dimas pressure control structure and hydroelectric plant (HEP) facilities during annual testing of the emergency power systems. During this testing, staff discovered a flaw in the control scheme that would not allow the flow to automatically transfer should an unscheduled shutdown of the HEP occur. Staff developed a solution and, working across multiple units, completed and tested the work to ensure reliable operations.



Electricians verifying cable sizes in electrical equipment at San Dimas HEP

Staff completed the replacement of a 24-inch drainage culvert in the City of Fallbrook. The existing corrugated metal pipe was corroded beyond repair. Staff replaced nearly 100 linear feet of pipe with a new 24-inch HDPE pipe to prevent future pipe corrosion. The drain line conveys runoff from neighboring properties over San Diego Pipeline Nos. 4 and 5.



Existing drainage culvert near San Diego Pipeline Nos. 4 and 5



Staff installing new drainage pipe near San Diego Pipeline Nos. 4 and 5

Optimize Asset and Maintenance Management

Staff finalized updating Metropolitan’s facility-level criticality analysis this month, which identifies operationally critical facilities based on varying operational and water supply scenarios. Criticality analyses with updated operating scenarios is an important step to managing Metropolitan’s aging infrastructure while balancing budgetary constraints and risk through a robust Asset Management Program. This milestone also included a process-level analysis of the Jensen plant as part of the effort to apply a layered approach using facility, process, subprocess, and asset levels across Metropolitan systems.



Cross-functional facility criticality meeting as part of Metropolitan’s Asset Management Program

Enhance Emergency Preparedness and Response

Staff conducted a functional emergency response exercise at the Diemer plant. This exercise is a collaboration between Diemer Incident Command System staff and the Emergency Management team. This emergency exercise primarily focused on implementation of the recently completed Dam Emergency Action Plan.



Functional emergency response exercise at the Diemer plant

Prepare for Future Legislation and Regulations

On June 20, the Occupational Safety and Health Standards Board (OSHSB) adopted the Indoor Heat Illness Prevention Standard. The rule applies when indoor workplace temperatures meet or exceed 82°F while employees are present. Key actions include providing water access, promoting hydration and breaks in cool areas, monitoring for signs of heat illness, and comprehensive training for acclimatization, monitoring, and response. The standard is set to go into effect in early August 2024. Staff is developing a comprehensive Heat Illness Prevention Program that will incorporate both outdoor and indoor heat illness prevention measures.

On June 27, the California Air Resources Board (CARB) adopted the Zero-Emission Forklift (ZEF) Regulation. Starting January 1, 2026, the regulation will phase out the use or purchase of new Class IV (any lift capacity) and V (lift capacity ≤ 12,000 lbs.) gas-, propane-, or compressed natural gas-powered forklifts. Fleet owners may continue to acquire used affected forklifts provided that the model year has not been phased out or an exemption is granted (e.g., for a low-use forklift). Staff is currently working on a replacement strategy for Metropolitan's approximately 20 affected forklifts.

Advance Education and Outreach Initiatives

This month, the Jensen plant hosted a tour for Director McMillan and her guests from the Calleguas Municipal Water District. Participants learned about Metropolitan, the water treatment process, and advanced treatment techniques through a presentation and facility tour.



Staff providing a presentation and tour of the Jensen plant for Director McMillan and guests