THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Engineering Services Group

- **Engineering Services Group Monthly Activities for July 2025**

Summary

This monthly report provides highlights and a summary of Engineering Services Group activities for July 2025 in the following key areas:

- Colorado River Aqueduct (CRA) Program
- Dams & Reservoirs Program
- Distribution System Program
- Additional Facilities and Systems Program
- Prestressed Concrete Cylinder Pipe (PCCP) Program
- Water Treatment Plants Program
- Pure Water Southern California
- Drought Mitigation – State Water Project Dependent Areas
- Value Engineering Program
- Future Workforce
- Engineering Services' All-Staff Meeting
- 2025 Metropolitan Water District Member Agency Engineering Managers Forum

Purpose

Informational

Attachments

Detailed Report – Engineering Services Group's Monthly Activities for July 2025

Date of Report: August 18, 2025

Engineering Services' Monthly Activities for July 2025

Highlights

In the month of July, Engineering Services embarked on the following major actions in support of the General Manager's business plan for Fiscal Year 2025-2026:

Goal: Follow Through on Business Model Refinement Recommendations
Outcome: Initiate an Integrated Strategy for Infrastructure Reliability
Engineering Services Incorporated feedback from Member Agency Managers' Workshop #2 for the Integrated Strategy for Infrastructure Reliability and begun planning for Workshop #3.
Goal: Develop a Biennial Budget that Meets Metropolitan's Needs
Outcome: Implement risk-informed capital investment planning to ensure reliable critical infrastructure
Engineering Services continued development of a long-term, risk-informed Capital Investment Plan to ensure reliable critical infrastructure. A workshop was conducted in late June underscoring the need to rehabilitate aging infrastructure to reduce Metropolitan's risk. An August board update and potentially a future action to increase the CIP budget for this biennium is planned. The development and evaluation of capital project proposals for the next biennium, which include a description of the project necessity, scope, risk assessment, and preliminary budget and schedule, is also underway.
Goal: Complete EIR and Planning, for Board to Consider Pure Water Southern California
Outcome: Complete EIR analyses and public process
The PWSC EIR public comment period was concluded in July. The program team is updating program cost estimates and preparing information to support the CAMP4W process.

Goal: Achieve Equitable Supply Reliability for State Water Project Dependent Areas
Outcome: Execute board-approved supply reliability projects
Metropolitan's Board authorized construction of the Venice Pump Station as part of the progressive design-build agreement for the 30-cfs Sepulveda Feeder Pump Stations Project.
Outcome: Use annual assessments to inform workplace improvement strategies
As part of all-staff meetings at La Verne and Headquarters, Engineering Services engaged its staff in an exercise to help solicit feedback and suggestions in response to Metropolitan's 2024 survey assessment.

In support of the General Manager's Business Plan Goal of providing organizational stability and delivering operational excellence, Engineering Services manages and executes projects within the adopted Capital Investment Plan (CIP) to maintain infrastructure resiliency, ensure regulatory compliance, enhance sustainability, and provide flexibility in system operations to address uncertain water supply conditions. In addition, Engineering Services provides technical services to enhance reliable system operation and real property planning, valuation, acquisition, and disposition services to protect Metropolitan's assets. Engineering Services empowers our staff and partners with our business partners and the communities we serve to accomplish Metropolitan's mission.

Recent key activities on CIP programs and other key engineering functions are described below.

Protect public health, the regional economy, and Metropolitan's assets

Colorado River Aqueduct (CRA) Program

The CRA program includes CIP projects to replace or refurbish facilities and components of the CRA system to reliably convey water from the Colorado River to Southern California.

- CRA Domestic Water Treatment System — This project upgrades the domestic water treatment systems at all five CRA pumping plants, including the replacement of the water treatment units. The

contractor has installed the temporary treatment skid system at the Intake Pumping Plant. The temporary skid will remain in operation until installation, testing, and commissioning of the new system is complete. Demolition of the existing system is underway. Installation of the temporary skid at Gene Pumping Plant is planned for August, followed by a 14-day water quality testing period. Construction is 49 percent complete and is scheduled to be complete in April 2027.

- CRA New Storage Buildings — This project furnishes and installs pre-engineered storage buildings at Hinds, Eagle Mountain, and Iron Mountain Pumping Plants and constructs associated site improvements. Construction is ongoing at all three pumping plants. The structural steel members for the storage buildings are being installed at Iron Mountain. Site preparations for asphalt paving are underway at Eagle Mountain. Insulation and roof panels have been installed at Hinds and the contractor will begin installing the electrical components. Construction is 79 percent complete and is scheduled to be complete in April 2026.
- Gene Communications Upgrade — This project will construct a new fiber optic cable line from Parker Dam to Gene Pumping Plant. The new line is predominantly located within the Metropolitan fee property on new power poles with a small underground portion of the alignment within the Bureau of Reclamation's property. Construction is complete and internet service via the fiber optic cable is now fully operational.
- Main Transformer Procurement – This project replaces thirty-five 230 kV and 69 kV step-down transformers that are used to operate the main pumps at all five of Metropolitan's Colorado River Aqueduct pumping plants. The Board awarded a procurement contract and authorized a consulting agreement for final design in May 2025. Contract execution is underway, and final design kick-off meetings are anticipated in August 2025.

CRA Domestic Water Treatment System — Hinds Pumping Plant Ductbank Construction

Dams & Reservoirs Program

The Dams & Reservoirs Program includes CIP projects to upgrade or refurbish Metropolitan's dams, reservoirs, and appurtenant facilities to reliably meet water storage needs and regulatory compliance.

- Garvey Reservoir Rehabilitation — This project will replace the aging reservoir floating cover and liner, structurally strengthen the outlet tower, upgrade the on-site water quality laboratory building, rehabilitate the junction structure, and replace the existing standby generator and a portion of the security perimeter fence. The outlet tower retrofit requires a permit from the California Division of Safety of Dams (DSOD); the design documents were submitted to DSOD in May 2025. Design is 99 percent complete and award of construction contract is planned for November 2025.
- Diamond Valley Lake Secondary Inlet Valve Rehabilitation – This project will rehabilitate the 72-inch inline sleeve valve and inlet piping and replace the instrumentation at the DVL Reservoir secondary inlet. Metropolitan staff has completed the rehabilitation of the sleeve valve and has installed the valve and tested its operation. Installation of the 96-inch piping is expected to be complete in late July 2025.

- Lake Mathews Pressure Control Structure (PCS) and Electrical System Upgrades — This project will replace the aging Lake Mathews discharge facility and electrical system. The project includes a new PCS with a bypass pipeline alongside the existing forebay, a new chlorination facility, and upgrades to the electrical system to accommodate future power needs. This project utilizes a progressive design-build (PDB) project delivery method. It is anticipated that an RFQ for Phase 1 design-build services, will be advertised in August 2025, and the Phase 1 agreement authorized in early 2026. The project is anticipated to complete by 2031.

Distribution System Program

The Distribution System Program includes CIP projects to replace, upgrade, or refurbish existing facilities within Metropolitan's distribution system, including pressure control structures, hydroelectric power plants, and pipelines, to reliably meet water demands.

- Wadsworth Sleeve Valve Refurbishment — This project refurbishes seven sleeve valves at the Wadsworth Pumping Plant. A total of four units have been refurbished. The project is 60 percent complete and is scheduled to be complete in December 2025.
- San Jacinto Diversion Structure Gate Replacement – This project will replace three cast iron slide gates at the San Jacinto Diversion Structure with stainless steel slide gates designed for throttling. The project will also include fabrication of a drop gate at structure to be used for isolating the San Jacinto Pipeline, along with replacement of gate guides and actuators. Final design is complete and board award of a construction contract is planned for August 2025.
- Hollywood Tunnel Valve Procurement – This project will replace two 24-inch sleeve valves operated by electric actuators for pressure control and two 24-inch bonneted knife gate valves for flow isolation at the Hollywood Tunnel North Portal along the Santa Monica Feeder. The valve procurement contract was awarded at the March 2025 board. The procurement is in the submittal phase and the valves are expected in Spring 2026.

Additional Facilities and Systems Program

The Additional Facilities and Systems Program includes CIP projects to refurbish, replace, upgrade, or provide new facilities and systems that support Metropolitan's business and district-wide operations.

- Diamond Valley Lake (DVL) Wave Attenuator Replacement — This project adds a second attenuator to the existing wave attenuating system at the East Marina in Diamond Valley Lake. The second attenuator will protect the boats and launch ramp from excessive wave action. As part of the improvements, the existing floating wave attenuator (FWA) will be relocated to a new location, and the new attenuator will be installed in its place. Additional anchors will be placed on the bottom of the reservoir to provide anchorage for the new, longer attenuator. The contractor began spall repairs on the existing South FWA; continued fabrication of the new North FWA modules; installation and hydraulic tensioning of the tie-rods for the new FWA; and assembly and fit-up of the new FWA. Construction is 72 percent complete and is scheduled to be complete in October 2026.

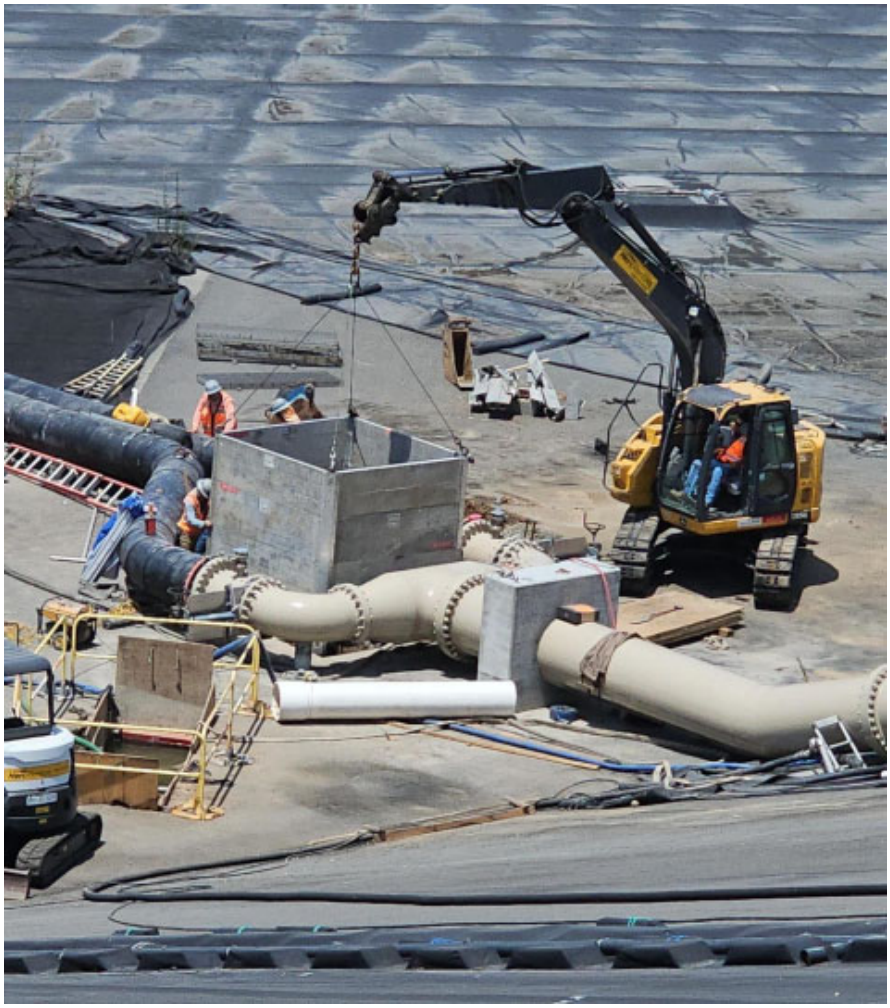
- Water Quality Lab Building Upgrades – This project upgrades the Michael J. McGuire Water Quality Laboratory in La Verne, including building expansion with an approximately 60 percent footprint increase; strengthening of the existing structure to meet current criteria for essential facilities; building amenities and utilities improving laboratory space modularity and configuration potential; sustainability upgrades and revised landscaping; parking and accessibility improvements; and new specialized laboratory equipment. Final design is approximately five percent complete and is scheduled to be complete in March 2028.

DVL Wave Attenuator Replacement — Setting Concrete Modules in the Water

Prestressed Concrete Cylinder Pipe (PCCP) Program

The PCCP Program includes CIP projects to refurbish or upgrade Metropolitan's PCCP feeders to maintain water deliveries without unplanned shutdowns.

- Second Lower Feeder PCCP Rehabilitation Reach 3B — This project installs 3.7 miles of steel lining and three conical plug valves along a portion of the Second Lower Feeder that traverses the cities of Lomita, Los Angeles, and Torrance. The contract completed the installation of the three conical plug valves and the installation of steel lining in April 2025. The electrical and SCADA work at the valve vaults and site restoration is complete. The contractor continues warranty work and punch list items on Western Ave and has commenced the modifications to the Palos Verdes Reservoir Bypass Line. Construction is 96 percent complete and is scheduled to be complete in September 2025.
- Electromagnetic Inspection — Regular inspections of the PCCP feeders are a critical step in evaluating the condition of each pipeline and assist staff in prioritizing the relining work on each feeder. This project conducts the fifth cycle of electromagnetic and visual inspections of Metropolitan's approximately 146.4 miles of PCCP pipelines. Inspections of the Skinner Plant Effluent No. 2 and San Diego Pipeline No. 4 were completed in June 2025.



Second Lower Feeder PCCP Rehabilitation Reach 3B —Installing Shoring at Piping Excavation

Water Treatment Plants Program

The Water Treatment Plants Program includes CIP projects to replace or refurbish facilities and components at Metropolitan's five water treatment plants to continue to reliably meet treated water demands.

- Weymouth Basins 5–8 and Filter Building No. 2 Rehabilitation — This project rehabilitates major mechanical and structural components of Basins 5–8 and Filter Building No. 2 at the Weymouth plant, including the flocculation/sedimentation equipment, sludge pumps, baffle boards, and walls, launders, and outlet drop gates. Rehabilitation work also includes seismic upgrades of basin walls and inlet channel, hazardous material abatement, and replacement of inlet gates in Basins 1-4 and filter valves and actuators in Filter Building No. 2. The contractor completed all basin rehabilitation work, including structural wall modifications, mechanical piping, replacement of inlet gates and electrical equipment and performed equipment testing. The contractor continued the replacement of filter valves and actuators in Filter Building No. 2. Construction is approximately 96 percent complete and is scheduled to be complete in December 2025.
- Weymouth Administration Building Upgrades — This project upgrades the Weymouth Administration Building to withstand a significant earthquake. The planned upgrades include structural strengthening consistent with current seismic standards for essential facilities, accessibility and fire/life safety improvements, architectural modifications near the areas of structural upgrades, and improvements associated with the preservation of historic architectural features. Final design is approximately 99 percent complete and is scheduled to be complete in August 2025.
- Diemer Filter Rehabilitation — This project rehabilitates the 48 filters at the Diemer plant to enhance filter performance, minimize filter media loss, and rehabilitate or replace aging components. Planned upgrades include replacing filter media, filter valve actuators, and instruments; modifying the filter upstream influent weir and surface wash laterals; and improving the coal grit removal facilities for the east and west sides of the plant. Final design is approximately 99 percent complete and is scheduled to be complete in August 2025.
- Mills Electrical Upgrades, Stage 2 — This project upgrades the electrical system with dual-power feeds to key process equipment to comply with current codes and industry practices, improve plant reliability, and enhance worker safety. Stage 1 construction is complete. Stage 2 improvements will add a second incoming 12 kV service from Riverside Public Utilities, reconfigure the existing 4.16 kV switchgear, and replace the standby generator switchgear and the emergency generator programmable logic controller. Riverside Public Utilities energized the second incoming service to the plant. Construction is complete and Notice of Completion was recorded with the Riverside County Recorder.

Weymouth Basins 5–8 and Filter Building No. 2 Rehabilitation — New Handrail Base Plates at Basin 6

Adapt to changing climate and water resources

Pure Water Southern California

The Pure Water Southern California (PWSC) Program is a large regional recycled water program that will provide a new local source of safe and reliable drinking water for Southern California. PWSC currently focuses on four areas: demonstration testing, environmental planning, technical studies, and preliminary design of initial pipeline reaches. PWSC will produce up to 150 million gallons per day of purified water from the Advanced Water Purification Facility (AWPF) in Carson for indirect potable reuse and direct potable reuse (DPR) applications.

- Environmental Planning — The draft Environmental Impact Report (EIR) was completed and published in May 2025 for a 60-day review period. Three public meetings were held in May and June. The public review period has closed. Board certification of the final EIR is scheduled for early 2026.
- Program Management — PWSC program management provides project controls, scheduling, budget development, risk management, coordination with program partners and stakeholders, grants and funding, and preparation of various plans and studies.
    - In December 2024, the Board authorized entering into an agreement with the United States Bureau of Reclamation (USBR) to accept up to $125,472,855 in funding under the USBR Large-Scale Water Recycling Program grant. Metropolitan has received approximately $17.4 million from USBR to date.

- Technical studies are underway to support the planning of DPR implementation and development of program phasing options, including treated water augmentation.
- A board workshop was held on July 22 to discuss term sheets for future agreements with member agencies that will be directly taking water.
- Updated program costs are in development and will be presented to the Board this Fall.

- Advanced Water Purification Facility — The AWPF will purify treated wastewater from Los Angeles Sanitation Districts' (LACSD) A.K. Warren Water Resource Facility using membrane bioreactors (MBRs), reverse osmosis, and ultraviolet/advanced oxidation. With its expertise in biological wastewater treatment, LACSD will be responsible for implementing the AWPF pretreatment, including the MBR facilities.
  - A final draft of conceptual facilities has been prepared. This document records key assumptions of AWPF components.
  - Metropolitan received the Method of Services study from Southern California Edison in May. This study identifies the infrastructure and costs needed to meet AWPF power requirements.
- Direct Potable Reuse — Metropolitan has completed bench-scale testing to screen the potential DPR treatment processes that could be used for the program. Planning of pilot-scale and demonstration-scale testing is in progress. Key testing equipment will be procured in the coming months to facilitate the design of the DPR testing facility.
- Conveyance Pipeline System — The PWSC conveyance system consists of the backbone pipeline that extends 39 miles from the AWPF, repurposing an existing pipeline owned by the San Gabriel Valley Municipal Water District, and constructing a new DPR pipeline to convey water from the backbone eastward for raw water augmentation at Metropolitan's Weymouth plant.
  - Completed the Conceptual Design Report for the conveyance system and continued preparing the comprehensive cost update.
  - Continued coordination with Southern California Edison (SCE) in drafting a lease agreement for Metropolitan's usage of approximately 12 miles of SCE right-of-way along the San Gabriel River.
  - Continued utility and geotechnical field investigations for Reaches 1 and 2, with preliminary design anticipated to complete by the year's end.

Drought Mitigation—State Water Project Dependent Areas

The Drought Mitigation—State Water Project Dependent Areas Program includes CIP projects to replace, refurbish, upgrade, or construct new facilities, which are identified to mitigate the vulnerability experienced by specific member agencies that are affected during shortages of State Water Project supplies.

- Wadsworth Bypass — This project installs a bypass pipeline and an isolation valve to interconnect the Wadsworth Pumping Plant with the Eastside Pipeline. This project is also one of the four Rialto Pipeline service area supply reliability improvement projects. The contractor is currently installing owner-furnished control components. Construction is 96 percent complete and is scheduled to be complete in August 2025.

- Inland Feeder Rialto Pipeline Intertie – This project installs an interconnection pipeline and isolation valve structure between the Inland Feeder and Rialto Pipeline so that water can be delivered from DVL to the Rialto Pipeline. The contractor is currently coating all the mechanical equipment in the valve vault. Construction is 90 percent complete and is scheduled to be complete in January 2026.
- Inland Feeder-Badlands Tunnel Surge Protection – This project installs a new open-to-atmosphere surge tank at the south portal of the Badlands Tunnel, which will protect the Inland Feeder from hydraulic transients when pumping water from Diamond Valley Lake to the Rialto Pipeline. The Contractor is currently installing valve structure grating and electrical power to the isolation valve. Construction is 92 percent complete and is scheduled to be complete in August 2025.

Inland Feeder-Badlands Tunnel Surge Protection –Scaffold Install for Tank Coaters

Value Engineering Program

Engineering Services conducts a Value Engineering (VE) program to review capital projects and identify opportunities and alternatives to enhance project performance, optimize funding for CIP projects, and demonstrate responsible use of public funds. The objective of the VE program is to improve the overall value of CIP projects by applying an industry-accepted assessment methodology to examine a project's function, design, equipment, material selections, and contracting approach. This comprehensive assessment is conducted at strategic stages in a project's life cycle.

Headquarters HVAC System Rehabilitation

Engineering held a VE workshop for the Headquarters HVAC System Rehabilitation project. Metropolitan's Headquarters (HQ) Building was completed in 1999 and after 26 years of continuous operation, the three existing chillers and other HVAC system components throughout the building have reached the end of their useful life and require replacement or refurbishment. This project will upgrade the HVAC system by replacing key system components such as chiller units, open and close loop cooling towers, chilled and condenser water pumps and valves, full refurbishment of existing air handling units, new system controls, and integration of controls with the existing Building Automation System.

The workshop focused on enhancing the HVAC system reliability, efficiency, and adaptability while minimizing disruption and supporting integration with concurrent initiatives. Emphasis was placed on strategic planning for construction challenges, sustainability goals, and seamless coordination with the HQ Building Automation System (BAS). Participants included Metropolitan staff from Engineering, Facilities Management, Environmental Planning, design consultants, value engineering consultants, and subject matter experts.

Site Tour for the HQ HVAC System Rehabilitation VE Workshop

Empower the workforce

Future Workforce

In July, ten student interns came on board to support Metropolitan's capital programs for Fiscal Year 2025-2026. This is an opportunity for sophomore, junior, and senior college students to gain experience in engineering (e.g., design, project management, construction contracts, substructures, or construction management) and real property. Since its inception, there has been a total of 293 students who have participated in the program. A number of activities are planned for the interns, and these include project site visits, a field trip at the Weymouth treatment plant, a tour of the Carson PWSC demo plant, and various project-related meetings in addition to already having attended the Engineering, Operations, and Technology Committee meeting in July. As an added enhancement to the program, this year's cohort has the unique opportunity of being matched with a Mentor, who is a seasoned Engineer, as a part of Engineering Services Mentoring Program, in addition to working directly with their supervisor.

Student Interns getting ready to attend the July Engineering, Operations, and Technology Committee meeting

Construction management intern checking the C02 flow rate on the welding equipment at the La Verne shops

Engineering Services' All-Staff Meeting

Engineering Services conducted all-staff meetings at La Verne and Headquarters and engaged Engineering Services staff in an exercise to help solicit feedback and suggestions in response to Metropolitan's 2024 survey assessment.

All-Staff Meeting at La Verne

All-Staff Meeting at Union Station Headquarters

Partner with interested parties and the communities we serve

2025 Metropolitan Water District Member Agency Engineering Managers Forum

On July 10th, Western Municipal Water District (WMWD) hosted the 2025 Member Agency Engineering Managers Forum at their headquarters in Riverside. This forum allows engineering managers from Metropolitan and its member agencies to share challenges, solutions, and networking opportunities among our engineering leaders. Twenty agencies were represented, and this year's event featured presentations on a challenging WMWD large diameter valve replacement, an urgent prestressed concrete cylinder pipe rehabilitation by the San Diego County Water Authority, and Metropolitan's engineering standard specifications. The event concluded with a tour of Metropolitan's Mills Water Treatment Plant.

2025 Member Agency Engineering Managers Forum attendees