THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Engineering Services Group

- **Engineering Services Monthly Activities for April 2025**

Summary

This monthly report provides a summary of Engineering Services Group activities for April 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
- Career Launch Program

Purpose

Informational

Attachments

Attachment 1: Detailed Report - Engineering Services Group's Monthly Activities for April 2025

Date of Report: May 12, 2025

Engineering Services Group's Monthly Activities for April 2025

Engineering Services manages and executes projects within the 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.

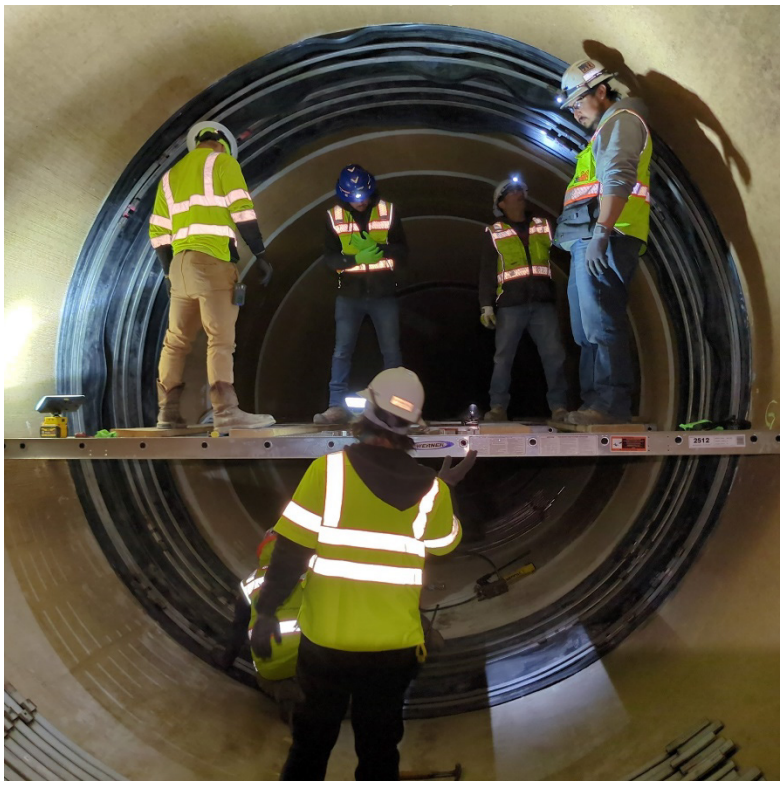
Recent key activities on CIP programs and other key engineering functions are described below.

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

Colorado River Aqueduct (CRA) Program

The CRA program is composed of 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 Freda Siphon Seals Installation — This project installs internal seals at 49 locations along the Freda Siphon Barrel No. 1. Construction was completed during the 2025 CRA shutdown in March.
- 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 CRA pumping plants. Preliminary design was completed in June 2023. The transformer procurement was advertised as a best-value procurement contract, and staff has completed negotiations of the contract terms. Award of a procurement contract and authorization of a consulting agreement for final design are scheduled for a May 2025 board action.
- Eagle Mountain and Hinds Utilities Improvements — This project will replace the existing potable water, non-potable water, and sewer lines at the Eagle Mountain and Hinds Pumping Plants. Final design was completed in April 2025, with a board action to award a construction contract to follow.



CRA Freda Siphon Seals Installation — Contractor Adjusting Retention Bands on the Seal

Dams & Reservoirs Program

The Dams & Reservoirs Program is composed of 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. Final design is approximately 75 percent complete. Garvey Reservoir is currently out of service, and staff are developing approaches to expedite construction completion.
- Lake Skinner Drainage Improvements — This project will replace the existing drainage ditch at Lake Skinner Dam with an improved trapezoidal drainage ditch to improve stormwater drainage. The contractor is currently demolishing the existing drainage ditch and excavating for the new ditch. Construction is scheduled to be complete by September 2025.
- Diamond Valley Lake (DVL) Secondary Inlet Valve Refurbishment — 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 is currently rehabilitating the sleeve valve at the La Verne Shops and will deliver the valve to DVL in April 2025. Installation is scheduled to be complete in June 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 the construction of a new PCS with a bypass pipeline alongside the existing forebay and upgrading the

electrical system to accommodate future power needs. This project utilizes a progressive design-build (PDB) project delivery method. An RFQ for Phase 1 design-build services is anticipated to be advertised in mid-2025, and the Phase 1 contract will be awarded by the end of 2025. The project is anticipated to be completed by 2031.

Distribution System Program

The Distribution System Program is composed of 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.

- Service Connection OC -88 Chillers Replacement — This project replaces deteriorated cooling equipment, including three chillers and two chilled water pumps that provide cooling for the pump station's pump motors and air conditioning system. The contractor has completed the installation of all three chillers and both chilled water pumps and is currently performing the start-up and commissioning of the new chillers' control systems. Construction is approximately 97 percent complete and is scheduled to be complete in May 2025.
- Foothill Hydroelectric Plant and Control Building Seismic Upgrade — This project enhances the facility's structural integrity to better withstand a significant seismic event. Major scope items included the removal and replacement of the roofing system, installation of concrete column encasements to enlarge and strengthen existing structural members, and reinforcement of shallow foundations. In addition, improvements such as the construction of a new walkway on the south side of the hydroelectric building have been finalized. Construction is complete and the facility is now fully operational with enhanced seismic resiliency.
- Santa Monica Feeder Cathodic Protection — This project will install cathodic protection for a steel portion of the Santa Monica Feeder to address corrosion detected during a 2018 inspection of the pipeline. This project will install two 400-foot-deep anode wells along with rectifiers and remote monitoring equipment along the feeder. The contractor continued installation of conduit for the anode cables and began installing power conduits. Construction is 85 percent complete and is scheduled to be complete by June 2025.
- San Jacinto Diversion Structure Gate Replacement — This project will replace the three existing cast iron slide gates at the San Jacinto Diversion Structure with Metropolitan-furnished stainless steel slide gates. The project will also include the replacement of gate guides, stems, actuators, and structural improvements to support the loads of the new equipment. Final design is 90 percent complete and scheduled to be complete by April 2025.

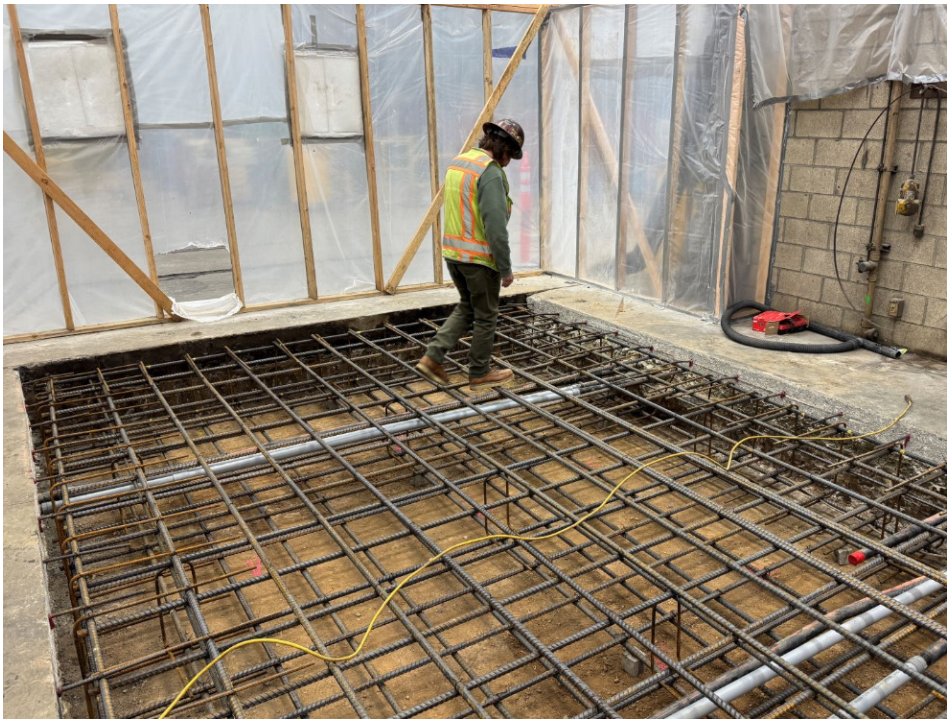
Service Connection OC -88 Chillers Replacement — Contractor Installing New Chilled Water Pump

Santa Monica Feeder Cathodic Protection — Contractor Performing Slurry Backfill of the Anode Cables

Additional Facilities and Systems Program

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

- La Verne Shops Improvements — This project improves the La Verne Shops building and installs Metropolitan-furnished shop equipment. The contractor completed installation of the plasma cutter, roof access ladders, air compressor equipment, and new waterjet system. The contractor continued installation of the new Unit Power Center and grading for the band saw foundation. Construction is approximately 97 percent complete and is scheduled to be complete in December 2025.
- La Verne Warehouse — Metropolitan's Central Stores and warehouses are located at the Weymouth Treatment Plant site in the city of La Verne. This project replaces the current main warehouse and annex building with a new warehouse building of 55,000 sf and outdoor canopies of 30,000 sf. Preliminary design is approximately 20 percent complete and is scheduled to be complete by December 2025.



La Verne Shops Improvements — Inspecting Reinforcement for the Vertical Saw Foundation

Prestressed Concrete Cylinder Pipe (PCCP) Program

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

- Second Lower Feeder Valves — This procurement contract provided 13 conical plug valves for the Second Lower Feeder PCCP rehabilitation. All thirteen valves were delivered as of December 20, 2024.

Three 48-inch valves were recently installed as part of the Reach 3 Second Lower Feeder PCCP Rehabilitation Project in March 2025 and went into service in late April 2025. The remaining ten 54-inch valves are being stored at the Lake Mathews Valve Warehouse.

- 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 installation of the three conical plug valves and installation of steel lining in April 2025. Work continues at the valve vaults to complete the remaining electrical and SCADA work to be followed by site restoration. Construction is 87 percent complete and is scheduled to be complete in September 2025.
- Yorba Linda Feeder and Sepulveda Feeder Inspections — Regularly scheduled electromagnetic and visual inspections of PCCP portions of the Yorba Linda Feeder and Sepulveda Feeder (Reach 2) were performed in April 2025. Inspection results will be available from the consultant in late May.

Second Lower Feeder PCCP Rehabilitation Reach 3B — Contractor Installing 12-Inch Bypass Piping

Yorba Linda Feeder PCCP Electromagnetic Inspection

Water Treatment Plants Program

The Water Treatment Plants Program is composed of 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 rehabilitation work in Basins 5–8, including structural wall modifications, mechanical piping, and equipment testing. The contractor began work in Basins 1–4, including the replacement of inlet gates and electrical equipment. Construction is approximately 93 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 as well as 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 98 percent complete and is scheduled to be complete in June 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 97 percent complete and is scheduled to be complete in July 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. The contractor completed system-level testing and facility switchover to the permanent system. Construction is approximately 95 percent complete and is scheduled to be complete in August 2025.

Weymouth Basins 5–8 and Filter Building No. 2 Rehabilitation — Torquing upgraded backwash valves at Filter 44

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 environmental planning phase began in 2020. Technical studies have been completed to support the effort. The draft EIR is currently scheduled for publication in May 2025, with board certification of the document in early 2026.
- Program Management — PWSC program management efforts lead the planning for the PWSC Program, including 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 USBR to accept up to $125,472,855 in funding under the USBR Large-Scale Water Recycling Program grant. The agreement was executed on January 10, 2025. The first two invoices were submitted in March, and USBR promptly paid Metropolitan approximately $15.6 million.
    - Program internal governance and program plans are currently being developed. Technical studies are underway to support planning of DPR implementation, and development of program phasing options, including treated water augmentation.
    - Metropolitan staff met with member agency managers to discuss the potential terms for future agreements between the member agencies that would directly receive pure water and Metropolitan.
- Advanced Water Purification Facility — The AWPF will purify treated wastewater from LACSD's 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 assume the responsibility of implementing the AWPF pretreatment, including the MBR facilities.
    - A draft conceptual facilities plan has been prepared to document key assumptions of AWPF components. The final draft plan is currently being prepared.
    - Southern California Edison has completed the Method of Services study to identify infrastructure needed to meet AWPF power requirements.
    - Staff is preparing a Request for Qualification document for the procurement of a PDB entity to progress the design of the AWPF.

- Direct Potable Reuse — The California Division of Drinking Water published the final DPR regulations in December 2023. On August 6, 2024, the California Office of Administrative Law approved these DPR regulations, which took effect on October 1, 2024. 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 mid-2025 to facilitate design of the pilot/demonstration system.
- Conveyance Pipeline System — The PWSC conveyance system consists of the backbone pipeline that extends over 40 miles from the AWPF in the city of Carson to as far north as the city of Azusa, 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 in the city of La Verne. It also includes several pump stations, service connections, isolation valves, and other pipeline appurtenances. As part of the current environmental planning phase efforts, the project team is preparing the Conveyance Facilities Conceptual Design Report to support the environmental studies and permitting processes required by CEQA. The final report is anticipated to be complete next month. In addition, preliminary design of the first two pipeline reaches is currently underway and is anticipated to be complete by the end of the year. Staff is also conducting a market-sounding for conveyance projects through early April, with plans to advertise for Construction Management / General Contractor (CM/GC) alternative delivery pre-construction services for Reaches 1 and 2 as early as July 2025.

  In January, the Southern California Edison (SCE) executive council authorized their staff to move forward with drafting a lease agreement for Metropolitan's usage of SCE right-of-way, effectively allowing us to co-locate our pure water backbone pipeline within their transmission corridor along the San Gabriel River. This, in turn, minimizes the overall impact on cities and communities along the backbone alignment. Additional progress updates are provided below.

  - Reach 1 — This reach is approximately 6.3 miles long, primarily within public rights of way in the city of Carson, with service connections for LADWP and West Basin MWD. Current work includes utility field investigation and geotechnical work and designing to incorporate more tunneling into this project to minimize construction risks and impacts to the public.
  - Reach 2 — This reach is approximately 7.5 miles long, primarily within public rights of way in the cities of Long Beach and Lakewood, with a service connection for Long Beach Utilities. Current work includes utility field investigation and geotechnical work, development of a preliminary design report and drawings, as well as coordination with the City of Long Beach, Long Beach Utilities, Caltrans, Army Corps, and other permitting entities for the major tunnel crossing of the I-710 and Los Angeles River.

Drought Mitigation—State Water Project Dependent Areas

The Drought Mitigation—State Water Project Dependent Areas Program is composed of 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.

- Foothill Pump Station Intertie — This project will connect Metropolitan's Inland Feeder to San Bernardino Valley Municipal Water District's Foothill Pump Station. The project is one of four Rialto

Pipeline service area supply reliability improvement projects. Final design was completed in late 2024; however, the project requires permits from CA Fish and Wildlife and US Fish and Wildlife (USFWS) to address impacts to endangered species found at the project site. In April 2025, USBR executed a $5M grant for this project. And as a result, USBR will assist Metropolitan with permit consultation with USFWS. USBR is currently preparing NEPA documentation.

- 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 recently completed work associated with the April 2025 shutdown, including replacing depleted sacrificial anodes inside the pipeline and installing the 84-inch butterfly valve. Construction is scheduled to be complete in July 2025.

54-Inch Butterfly Valve for Foothill Pump Station Intertie –Butterfly Valve Factory Testing

Wadsworth Bypass — Installing the 84-inch Butterfly Valve

Sustain Metropolitan's mission with a strengthened business model

Value Engineering Program

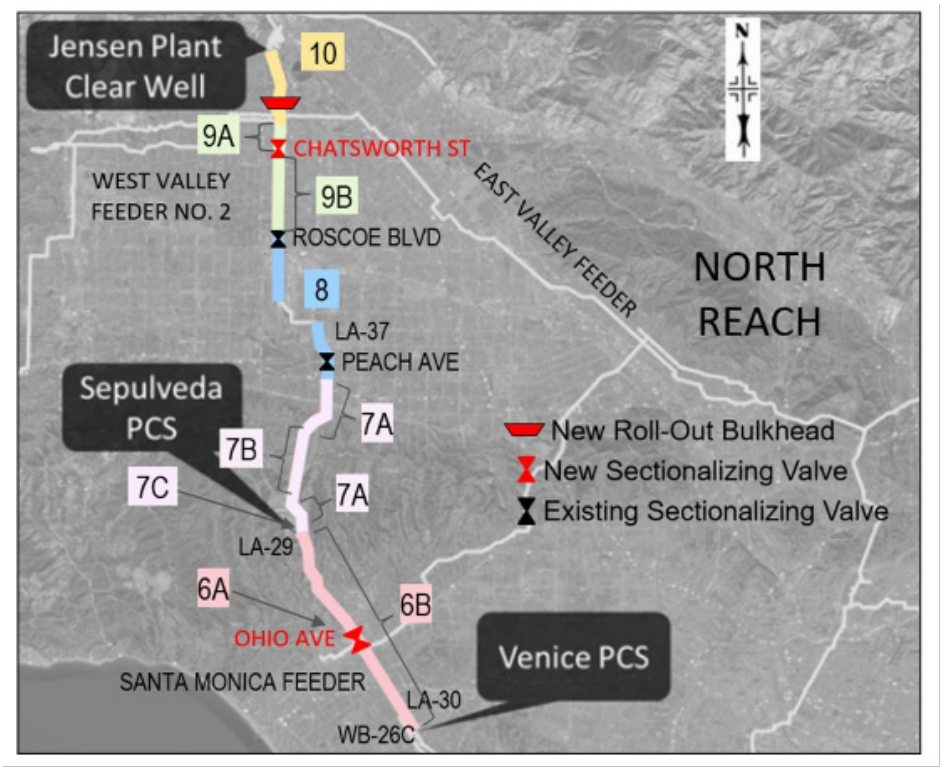
Engineering Services conducts a Value Engineering (VE) program to review capital projects and identify opportunities and alternatives to enhance project performance, optimize the use of funding for CIP projects, and demonstrate responsible use of public funds. The objective of the VE program is to improve 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.

Sepulveda Feeder PCCP Rehabilitation — Reach 9

In April, a Constructability Review workshop was held that focused on the Sepulveda Feeder PCCP Rehabilitation — Reach 9 Project. This project involves rehabilitating approximately 3.5 miles of large-diameter PCCP in the northern section of the Sepulveda Feeder.

The workshop gathered key stakeholders, including representatives from construction management, project management, design, operations, real property, water quality, environmental planning, external affairs, VE and design consultants, and industry subject matter experts, to assess the construction schedule, critical milestones, and risk mitigation strategies.

Strategies were discussed to minimize operational impacts during construction, including contingency planning for unanticipated conditions. Key project risks were identified, such as permitting challenges with the City of Los Angeles for after-hours work and construction near major intersections. Mitigation strategies were outlined to address environmental, regulatory, and technical risks. The workshop provided valuable insights to advance the project efficiently, ensuring a well-coordinated approach to the rehabilitation of the Sepulveda Feeder's northern section.



Sepulveda Feeder PCCP Rehabilitation – Reach 9 (shown in light green)

Empower the workforce

Career Launch Program

The Engineering Services Group's Career Launch Program, which is in its 13th year, provides a series of modules to enhance the onboarding process for new staff members. Recently, for Module 5, new hires had the opportunity to "Meet the Managers" in person at Metropolitan's Headquarters building and learned more in-depth about the organizational structure of the Engineering Services Group and its four sections — Design, Engineering Planning, Infrastructure Reliability, and Program Management. This module was led by Assistant Group Manager Howard Lum and the Section and Unit Managers in Engineering Services. Participants gained more insight into each team's roles and responsibilities and got to know the managers with respect to their personal profiles, including their education, career and leadership experiences, and hobbies. The next and final

module will consist of project highlights and a celebratory culmination to close out this program for the 13th cohort.

Career Launch Program Module 5 with New Engineering Services Staff