



- Capital Investment Plan (CIP) Quarterly report for period ending September 2015

Summary

This report provides a summary of fiscal year accomplishments, capital expenditures to date, and updates on the status of major capital projects. Also included in this report is information regarding service connections and relocations authorized by the General Manager during the reporting period.

During the first quarter of fiscal year 2015/16, for the period of July to September 2015, 10 Board actions appropriated a total of \$76.1 million. This amount excludes the out-of-budget authorizations to purchase properties in San Bernardino, Riverside, and Los Angeles counties. Eight construction contracts totaling \$35 million were awarded, while two construction contracts were completed. Fiscal year expenditures through September 2015 totaled \$49.4 million (excluding the property acquisitions) or \$305.2 million (including the property acquisitions) for all capital programs. At the end of the first quarter, 30 construction contracts and three procurement contracts were underway with a total value of approximately \$287.5 million.

For the quarter ending September 2015, \$24.4 million in construction contract payments were disbursed, reflecting construction progress on projects such as the Weymouth Oxidation Retrofit Project (ORP), chlorine containment at the Chemical Unloading Facility, the Weymouth filter rehabilitation, and the Diemer basin and filter upgrades.

More detailed information regarding accomplishments is included in the following pages.

Purpose

Administrative Code Requirement Section 2720 (a) (1): General Manager's Quarterly Reports

Attachments

Not applicable

Detailed Report

Section 2720 of Metropolitan's Administrative Code requires the General Manager to report quarterly to the Engineering and Operations Committee on the Capital Investment Plan. The report also covers service connections approved by the General Manager pursuant to Sections 4700-4708, with the estimated cost and approximate location of each, and the execution of any relocation agreements involving an amount in excess of \$100,000 under the authority of Section 8122(c).

No new agreements for service connections or relocations were approved by the General Manager pursuant to Sections 4700-4708 during the reporting period.

Highlights of progress and major milestones on selected projects are presented below, grouped by CIP Program. The programs included in this report are described below:

Water Quality/Oxidation Retrofit – Projects to add new facilities to ensure compliance with water quality regulations for treated water for Metropolitan's treatment plants and throughout the distribution system.

Treatment Plant Reliability – Projects to replace or refurbish facilities and components at Metropolitan's five water treatment plants in order to continue to reliably meet treated water demands.

Colorado River Aqueduct (CRA) Reliability – Projects to replace or refurbish facilities and components on the CRA system in order to reliably convey water to Southern California.

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Distribution System Reliability – Projects to replace or refurbish existing facilities within Metropolitan’s distribution system, including reservoirs, pressure control structures, hydroelectric power plants, and pipelines, in order to reliably meet water demands.

Prestressed Concrete Cylinder Pipe (PCCP) Reliability – Projects to refurbish or upgrade Metropolitan’s PCCP feeders to maintain water deliveries without unplanned shutdowns.

System Reliability – Projects to improve or modify facilities located throughout Metropolitan’s service area in order to utilize new processes and/or technologies, and improve facility safety and overall reliability. These include projects related to Metropolitan’s Supervisory Control and Data Acquisition (SCADA) system and other Information Technology projects.

Supply Reliability/System Flexibility - Projects to increase the capacity and flexibility of Metropolitan’s water supply and delivery infrastructure to meet service demands.

Regulatory Compliance – Projects to provide for prudent use and management of Metropolitan’s assets in compliance with regulations and codes other than water quality.

Cost Efficiency/Productivity – Projects to upgrade, replace, or provide new facilities, software applications, or technology, that will provide economic savings that outweigh project costs through enhanced business and operating processes.

Water Quality/Oxidation Retrofit Program

- **Weymouth Oxidation Retrofit Project (ORP)**

- Main Ozonation Facilities

Weymouth represents the final Metropolitan treatment plant to receive ozone as the primary disinfectant.

Construction of the Stage 1 ozone facilities at Weymouth commenced in July 2012. In December 2013, Metropolitan’s Board authorized an increase in change order authority to construct Stage 2 of the Weymouth ORP, which will increase the ozone treatment capacity up to the full plant capacity of 520 million gallons per day (mgd). Construction of both stages is approximately 88 percent complete.

Construction is scheduled to be completed by late 2016.

The Board awarded a construction contract in August for chemical feed systems needed to commence operation of the ozone facilities.



Weymouth Plant
Structural steel for sulfuric acid tank farm

Treatment Plant Reliability Program

- **Diemer Electrical Upgrades – Stage 2**
- **Diemer Filter Valve Refurbishment**
- **Jensen Electrical Upgrades – Stage 1**
- **Weymouth Buildings Improvements**

- **Diemer Electrical Upgrades – Stage 2**
The electrical upgrades at the Diemer plant are being completed in two stages. The first stage included the new 66 kV Southern California Edison incoming electrical service and substation, new switchgear, standby generators, and duct banks. This work is complete.
The second stage is replacing aged electrical components and reconfiguring power distribution to critical plant processes.
Construction of the second stage is 76 percent complete and is scheduled to be completed by June 2016.



**Diemer Plant
Installation of conduits and ductbank**

- **Diemer Filter Building Upgrades**
This project replaces the existing filter valves that have deteriorated due to corrosion of the valve bodies and degradation of the embedded seals.
Fabrication of the new valves has been completed, and the valves have been delivered and stored at a warehouse near the plant.
For construction efficiency, the filter valves will be replaced in conjunction with filter building seismic upgrades. A construction contract for the east filters was awarded in February 2015. Construction is 13 percent complete and is scheduled to be completed by November 2016.
Replacement of the west filter valves will also be performed in conjunction with seismic upgrades to the west filter buildings. Final design is 30 percent completed and is scheduled to be completed by June 2017.



**Diemer Plant
Filter gallery**

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- **Jensen Electrical Upgrades – Stage 1**
This project will replace electrical equipment, provide backup in the event of individual component failures, and upgrade the electrical system to be consistent with current codes and industry practices.
Stage 1 work will be completed in two phases. The design for the initial phase, which will construct urgent upgrades and install needed infrastructure for the planned solar facilities, is complete. Award of a construction contract is planned for December 2015.



**Jensen Plant
Switchgear**

- **Weymouth Filter Rehabilitation**
This project replaces the internal components of the Weymouth plant’s 48 filters, including the underdrains, filter media, launder troughs, and surface wash system. The filters need to be rehabilitated to maintain reliable operation and enable the new ozone system to commence operation on schedule.
Construction is 15 percent complete and is scheduled to be completed by May 2017.



**Weymouth Plant
Removal of existing concrete trough**

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Colorado River Aqueduct (CRA) Reliability Program

- **CRA Sand Trap Rehabilitation**
- **CRA Canal Improvements**

- **CRA Sand Trap Rehabilitation**

This project will replace deteriorated sand trap equipment located upstream of the Iron Mountain, Eagle Mountain, and Hinds Pumping Plants. The sand traps are needed to remove water-borne sand to protect internal surfaces of the main CRA pumps from abrasion. Final design is complete and award of a construction contract is planned for October 2015.



**CRA Sand Trap
Traveling bridge over settling basins**

- **CRA Canal Improvements**

This project will replace deteriorated concrete panels and install parapet walls along portions of the open canal to increase freeboard during periods of high flow.

The Board awarded a construction contract in September 2015.



**CRA Canal
Erosion behind sidewall**

Distribution System Reliability Program

- **Palos Verdes Reservoir Rehabilitation**
- **Etiwanda Pipeline Lining Repairs**
- **Orange County Feeder Relining**
- **Santa Ana River Bridge Seismic Retrofit**

- **Palos Verdes Reservoir Rehabilitation**

This project will replace the floating cover and install a new geomembrane liner and subdrain system. The project will also remove a portion of the inlet/outlet tower and modify the spillway.

A Mitigated Negative Declaration was adopted by the Board in July 2015 and bids for construction were opened in September 2015. Award of a construction contract is planned for November 2015.



Palos Verdes Reservoir

- **Etiwanda Pipeline Lining Repairs**

This project will replace the Etiwanda Pipeline's damaged interior mortar lining with a polyurethane lining. The first phase of repairs, which was completed in 2014, lined approximately 2,800 feet of the pipeline. The remaining five miles of the pipeline will be relined in two phases.

Final design for Phase 2 is 90 percent complete and is scheduled to be completed by October 2015. Final design for Phase 3 is 50 percent complete and is scheduled to be completed by December 2015.



**Etiwanda Pipeline
Application of polyurethane coating**

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- **Orange County Feeder Relining**
This project replaces the deteriorated internal lining along an 11-mile portion of the Orange County Feeder.
The work is planned to be completed in three phases. Phase 1 includes removal and inspection of a segment of pipe to verify the proposed lining methodology prior to finalizing and issuing the Phase 2 bid documents. Phase 1 is being performed by Metropolitan staff and is scheduled to be completed by May 2016. Final design of Phase 2 is approximately 99 percent complete.



**Orange County Feeder
Pinhole leak**

- **Santa Ana River Bridge Seismic Retrofit**
This project strengthens the Santa Ana River Bridge, which supports an above-ground portion of the Upper Feeder as it crosses the streambed. Base isolators that minimize lateral movement of the bridge deck in the event of an earthquake will also be replaced.
The Board awarded a construction contract in August 2015. Construction is 10 percent complete and is scheduled to be completed by April 2016.



Santa Ana River Bridge

Prestressed Concrete Cylinder Pipe (PCCP) Reliability Program

- **Second Lower Feeder PCCP Rehabilitation**

- Second Lower Feeder PCCP Rehabilitation

This comprehensive long-term program was established to enhance the reliability of Metropolitan’s distribution system and reduce the risk of unplanned outages and costly emergency repairs of PCCP lines.

Urgent repairs to 6,300 feet of the Second Lower Feeder were completed in 2015. The remaining 28 miles of PCCP in the feeder will be lined under multiple construction contracts. Preliminary design has been completed. The first phase of final design, which will address approximately one half of the remaining PCCP segments, is 30 percent complete and is scheduled to be completed by June 2016. A programmatic EIR for the rehabilitation work is scheduled to be released for public review and comment in late 2015.



**Second Lower Feeder
Installation of steel liner section**

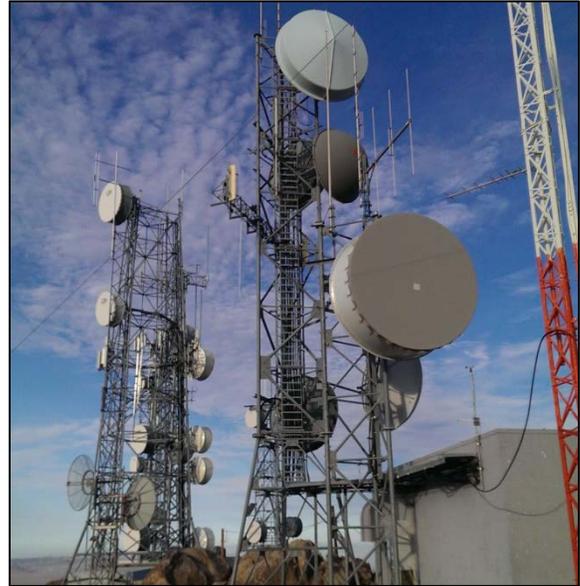
System Reliability Program

- **Emergency Radio Communications Upgrade**
- **Wadsworth Pumping Plant Control and Protection Upgrades**

- Emergency Radio Communications Upgrade

This project will improve emergency and day-to-day communication, enhance workplace safety, and improve site security throughout Metropolitan’s treatment plants and distribution system.

Construction is 70% complete and is scheduled to be completed by December 2015.



**Emergency Radio Communications Upgrade
Chuckwalla site**

- Wadsworth Pumping Plant Control and Protection Upgrades

This project will replace the control and communications systems, protection relays, vibration monitoring system, and portions of the power controls at Hiram Wadsworth Pumping Plant. Under the initial phase of the project, upgrades for a single pump/turbine unit will be completed and tested.

The initial phase of the project is approximately 40 percent complete and is scheduled to be completed by November 2016.



**Wadsworth Pumping Plant
Pump/turbine controls**

Regulatory Compliance Program

- **Chemical Unloading Facility Chlorine Containment**

- Chemical Unloading Facility Chlorine Containment

The Chemical Unloading Facility is used to transfer liquid chlorine from vendor-supplied rail cars to Metropolitan-owned cargo trailers.

Construction of the containment system is 48 percent complete and is scheduled to be completed by February 2017.



Chemical Unloading Facility

Cost Efficiency/Productivity Program

- **Yorba Linda Power Plant Upgrades**

- Yorba Linda Power Plant Upgrades

This project is replacing the existing Pelton wheel hydraulic turbine on the grounds of the Diemer plant with a Francis turbine capable of operating under post-ORP hydraulic conditions.

The turbine/generator has been manufactured and delivered to the site. Testing of the new turbine-generator commenced in September 2015. Construction is 97 percent complete and is scheduled to be completed by November 2015.



**Yorba Linda Power Plant
New generator assembly**

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Capital Program for Projects Costing Less Than \$250,000 (Minor Cap Program)

The Minor Cap Program is authorized each fiscal year to enable staff to expedite small capital projects that arise during the year. Since many of these projects require rapid response to address unanticipated failures, safety or regulatory compliance concerns, or to take advantage of shutdown opportunities, the Minor Cap Program authorizes the General Manager to execute projects that meet defined criteria during the fiscal year without seeking additional Board approval.

Fourteen projects were authorized under the 2014/15-2015/16 Minor Cap appropriation through the first quarter of fiscal year 2015/16. The three projects authorized during the first quarter (July through September) are listed below:

- WR-24D Flowmeter Replacement – This project will replace the existing obsolete meter with a new unit.
- Eagle Mountain Pumping Plant Potable Water Line Replacement – This project will replace a portion of the water line loop that has severely deteriorated since it was constructed in the 1930’s.
- Garvey Reservoir Fencing – This project will upgrade the existing perimeter security fencing that was constructed in the 1950’s.

The following table provides the overall status of the 2009/10 through 2014/15 –2015/16 Minor Cap appropriations.

FY Budget	2009/10	2010/11	2011/12	2012/13-2013/14	2014/15-2015/16
Amount Appropriated	\$4.15M	\$3.5M	\$3M	\$10M	\$5M
Number of Projects Approved	23	17	15	47	14
Number of Projects Completed Through Sept. 2015	23	17	13	27	2
Percent of Work Complete	100%	100%	98%	74%	30%
Number of Projects Over 3 years	0	0	2	0	0
Expenditures Through Sept. 2015	\$3.65M	\$2.94M	\$2.66M	\$6.79M	\$621.1K

Through September 2015, 82 of the 113 projects have been completed, and two projects have exceeded three years in duration. The Yorba Linda Feeder Discharge Return System for Quagga mussel control experienced delays due to scheduling shifts to accommodate other project shutdowns, and is scheduled to be completed by

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November 2015. The Skinner Washwater Reclamation Plant Solids Handling Pump project experienced delays due to fabrication and equipment delivery delays. This project is scheduled to be completed by November 2015.