



- Capital Investment Plan quarterly report for period ending March 2016

## Summary

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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 third quarter of fiscal year 2015/16, for the period of January to March 2016, 11 Board actions appropriated a total of \$47.7 million. Four construction contracts totaling \$21.5 million were awarded, while six construction contracts were completed. Fiscal year expenditures through March 2016 totaled \$164.4 million (excluding the unbudgeted property acquisitions authorized during the first three quarters) or \$420.5 million (including the property acquisitions) for all capital programs. At the end of the third quarter, 31 construction contracts and two procurement contracts were underway with a total value of approximately \$348.4 million. All capital appropriations are within their authorized budgets.

For the quarter ending March 2016, \$36.2 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 rehabilitation.

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

## Purpose

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

## Attachments

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Not applicable

## Detailed Report

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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, located at Metropolitan's treatment plants and throughout the distribution system.

**Treatment Plant Reliability** – Projects to replace or refurbish facilities and components of 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 of 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.

**Regional Recycled Water Supply Program** – Projects under this program are planned to demonstrate the feasibility of recycling wastewater for recharge of groundwater basins within Southern California, for development of a potential regional recycled water supply system.

<p>Water Quality/Oxidation Retrofit Program</p> <ul style="list-style-type: none"><li>• <b>Weymouth Oxidation Retrofit Project (ORP)</b></li></ul>	
<ul style="list-style-type: none"><li>• <b>Main Ozonation Facilities</b></li></ul> <p>Weymouth represents the final Metropolitan treatment plant to receive ozone as the primary disinfectant.</p> <p>Construction is underway to install an ozone treatment system for the full plant capacity of 520 million gallons per day (mgd). A full plant shutdown to perform the tie-in of the plant inlet conduit to the inlet and outlet of the new ozone contactors was successfully completed in March 2016. Construction is approximately 95 percent complete, and is scheduled to be completed by late 2016.</p> <p>The Board awarded a construction contract in August 2016 for chemical feed systems needed to support the ozonation process. Construction is 15 percent complete and is scheduled to be completed by May 2018.</p>	 <p><b>Weymouth Plant Removal of existing 140-inch inlet pipe</b></p>

Treatment Plant Reliability Program

- **Diemer Electrical Upgrades – Stage 2**
- **Diemer Filter Building Upgrades**
- **Diemer East Basin Rehabilitation**
- **Weymouth Filter Rehabilitation**

• 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. That 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 88 percent complete and is scheduled to be completed by June 2016.



**Diemer Plant  
New motor control center**

• 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.

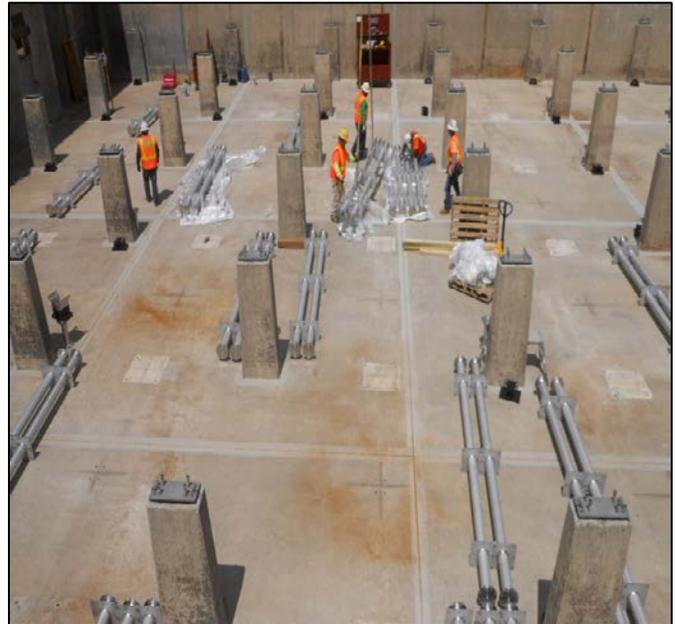
For construction efficiency, the filter valves are being replaced in conjunction with filter building seismic upgrades. Construction is 65 percent complete and is scheduled to be completed by November 2016.

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  
New 48-inch drain valve**

- **Diemer East Basin Rehabilitation**  
This project rehabilitates aging mechanical equipment and electrical and structural components inside the four east flocculation/sedimentation basins.  
Construction is 25 percent complete and is scheduled to be completed by July 2017.



**Diemer Plant  
New flocculator drive shafts**

- **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 filter rehabilitation needs to be completed prior to start-up of the plant's new ozonation system.  
Construction is 33 percent complete and is scheduled to be completed by December 2017.



**Weymouth Plant  
Existing backwash drain troughs**

**Colorado River Aqueduct (CRA) Reliability Program**

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

- **CRA Sand Trap Rehabilitation**

This project replaces 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.

Construction is 19 percent complete and is scheduled to be completed by August 2017.



**CRA Sand Trap**  
**Formwork and reinforcing steel for new concrete slab**

- **CRA Canal Improvements**

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

Construction is 20 percent complete and is scheduled to be completed by February 2017.



**CRA Canal**  
**Placement of new precast concrete curb section**

**Distribution System Reliability Program**

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

- Palos Verdes Reservoir Rehabilitation

This project replaces the floating cover and installs a new geomembrane liner and subdrain system. The project is also removing a portion of the inlet/outlet tower and modifying the spillway.

Construction is 5 percent complete and is scheduled to be completed by September 2017.



**Palos Verdes Reservoir**

- Etiwanda Pipeline Lining Repairs

This project replaces 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.

The Notice to Proceed for construction of the Phase 2 repairs was issued in March 2016. Construction is scheduled to be completed by December 2016. Final design of the Phase 3 repairs is 65 percent complete and is scheduled to be completed by July 2016.



**Etiwanda Pipeline  
Application of polyurethane coating**

- **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 are also being replaced.

Construction is 99 percent complete and is scheduled to be completed by April 2016.



**Santa Ana River Bridge  
Base isolator**

Prestressed Concrete Cylinder Pipe (PCCP) Reliability Program

- **Second Lower Feeder PCCP Rehabilitation**
- **Sepulveda Feeder Urgent PCCP Repairs**
- **Second Lower Feeder Emergency PCCP Repairs**

- Second Lower Feeder PCCP Rehabilitation

The PCCP Reliability Program is a comprehensive long-term program that enhances the reliability of Metropolitan’s distribution system and reduces 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. Final design of the valve and pipe procurement is 40 percent complete and is scheduled to be completed by September 2016. A draft programmatic EIR for the rehabilitation work is scheduled to be released for public review and comment in mid-2016.

- Sepulveda Feeder Urgent PCCP Repairs

Several pipeline segments with multiple prestressing wire breaks were discovered during an electromagnetic inspection of approximately 10.3 miles of the Sepulveda Feeder that was performed in October 2015. Construction is scheduled to begin in April 2016, and to be completed by June 2016.

- Second Lower Feeder Emergency PCCP Repairs

A leak was discovered on the Second Lower Feeder in the city of Long Beach in February 2016. On March 10, 2016, an emergency construction contract was awarded to install carbon fiber lining in four PCCP segments. Construction was completed and the pipeline returned to service by April 1, 2016.



**Second Lower Feeder  
Installation of layers of carbon fiber**

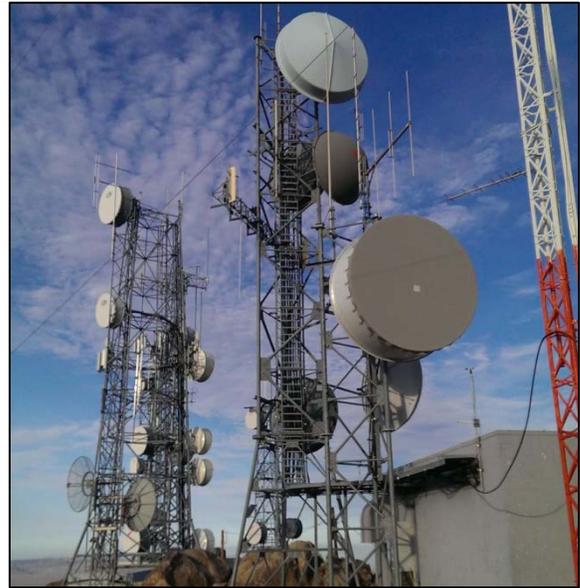
System Reliability Program

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

- Emergency Radio Communications Upgrade

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

Construction was completed in February 2016.



**Emergency Radio Communications Upgrade  
Chuckwalla site**

- Wadsworth Pumping Plant Control and Protection Upgrades

This project is replacing 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 60 percent complete and is scheduled to be completed by November 2016.



**Wadsworth Pumping Plant  
Pump/turbine controls**

<p>Regulatory Compliance Program</p> <ul style="list-style-type: none"><li>• <b>Chemical Unloading Facility Chlorine Containment</b></li></ul>	
<ul style="list-style-type: none"><li>• Chemical Unloading Facility Chlorine Containment</li></ul> <p>The Chemical Unloading Facility is used to transfer liquid chlorine from vendor-supplied rail cars to Metropolitan-owned cargo trailers.</p> <p>Construction of the containment system is 75 percent complete and is scheduled to be completed by February 2017.</p>	 <p><b>Chemical Unloading Facility</b></p>
<p>Cost Efficiency/Productivity Program</p> <ul style="list-style-type: none"><li>• <b>La Verne Solar Power Project</b></li></ul>	
<ul style="list-style-type: none"><li>• La Verne Solar Power Project</li></ul> <p>This project constructs a 3-megawatt solar generating facility on the grounds of the Weymouth plant in La Verne. The solar power plant will hedge against projected increases and volatility in the price of electricity, and will enhance Metropolitan’s long-term power use efficiency.</p> <p>Construction is 90 percent complete and is scheduled to be completed by May 2016.</p>	 <p><b>La Verne Solar Power Plant Electrical conduits</b></p>

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

The Minor Cap Program is authorized biennially to enable staff to expedite small capital projects. 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 without seeking additional Board approval.

Thirty-three projects were authorized under the 2014/15-2015/16 Minor Cap appropriation through the third quarter of fiscal year 2015/16. The 12 projects authorized during the third quarter (January through March) are listed below:

- Skinner Reclamation Plant No. 3 – Replacement of Shaft Sleeves & Bearings – This project will replace the stainless steel shaft sleeves and composite bearings on Washwater Reclamation Plant No. 3 (Basins Nos. 7 & 8) longitudinal and cross collectors.
- Jensen Landscape Replacement – This project will replace the landscaping and irrigation system along the western side of the plant that was burned during an area fire.
- Etiwanda Automatic Voltage Regulator (AVR) Replacement – This project will remove the existing AVR and replace it with a new unit.
- Skinner Module No. 3 Electrical Raceway Replacement – This project will replace the existing corroded electrical raceway in Module No. 3.
- Skinner Communication Room Improvement – This project will modify the Skinner Communication Control Room in the basement of the Administration Building to properly enclose and protect critical telecommunication and radio equipment.
- Diemer Electrical Upgrades at Lagoon No. 4 – This project will relocate the existing transformer and electrical panel to a new location outside of the lagoon.
- Diemer Uninterruptible Power Supply (UPS) Replacement – This project will replace UPS units and associated batteries with upgraded equipment throughout the plant.
- Lake Skinner Aerator Compressor Air Receiver – This project will install an air receiver and concrete pad for the existing Lake Skinner aerator compressor system.
- Jensen Thickeners Nos. 3 and 4 Refurbishment – This project will replace the existing chain and sprocket assembly systems with a hydraulic drive assembly.
- La Verne Area Valve Replacement – This project will replace plug valves ranging from 6” to 12” in diameter on the Etiwanda, Upper, and Middle Feeders.
- Lake Mathews Vehicle Shop Propane Tanks – This project will replace the propane tank used for building heating to provide an adequate and reliable fuel supply.
- Auld Valley Pipeline Bubbler – Skinner Treated Water Discharge – This project will construct a treated water discharge line from the Auld Valley Pipeline into Tualota Creek to replace the current untreated water line to prevent the potential discharge of quagga mussels.

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The following table provides the overall status of the fiscal year 2010/11 through 2014/15 –2015/16 Minor Cap appropriations.

Fiscal Year Budget	2010/11	2011/12	2012/13-2013/14	2014/15-2015/16
Amount Appropriated	\$3.5M	\$3M	\$10M	\$8M
Number of Projects Approved	17	15	45	33
Number of Projects Completed Through Mar. 2016	17	15	33	5
Percent of Work Complete	100%	100%	83%	29%
Number of Projects Over 3 years	0	0	0	0
Expenditures Through Mar. 2016	\$2.98M	\$2.71M	\$7.20M	\$1.84M

Through March 2016, 70 of the 110 projects have been completed, and no projects have exceeded three years in duration.