THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Report

Engineering Services Group

- **Capital Investment Plan Quarterly Report for period ending December 2018**

Summary

The attached report provides a status summary of actions and accomplishments on the Capital Investment Plan (CIP) during fiscal year 2018/19. It also provides updates on the status of capital projects and capital expenditures to date, and information regarding service connections and relocations authorized by the General Manager during the reporting period of October to December 2018.

This is the first version of the CIP Quarterly Report following the Board action to delegate authority to the General Manager to allocate previously appropriated capital funds and authorize work to proceed on planned projects. Staff will receive feedback from the board on this report and modify future quarterly reports, as appropriate.

Purpose

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

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.

Sections 4700-4708 of Metropolitan's Administrative Code requires the General Manager to report on service connections approved by the General Manager with the estimated cost and approximate location of each.

Section 8122(c) of Metropolitan's Administrative Code requires the General Manager to report on the execution of any relocation agreement under the General Manager's authority involving an amount in excess of $100,000.

Highlights of progress and major milestones on selected projects are presented in the attached report grouped by CIP program.

Attachments

Capital Investment Plan quarterly report for period ending December 2018

Date of Report: 3/11/2019

CAPITAL INVESTMENT PLAN

Quarterly Report | October – December 2018

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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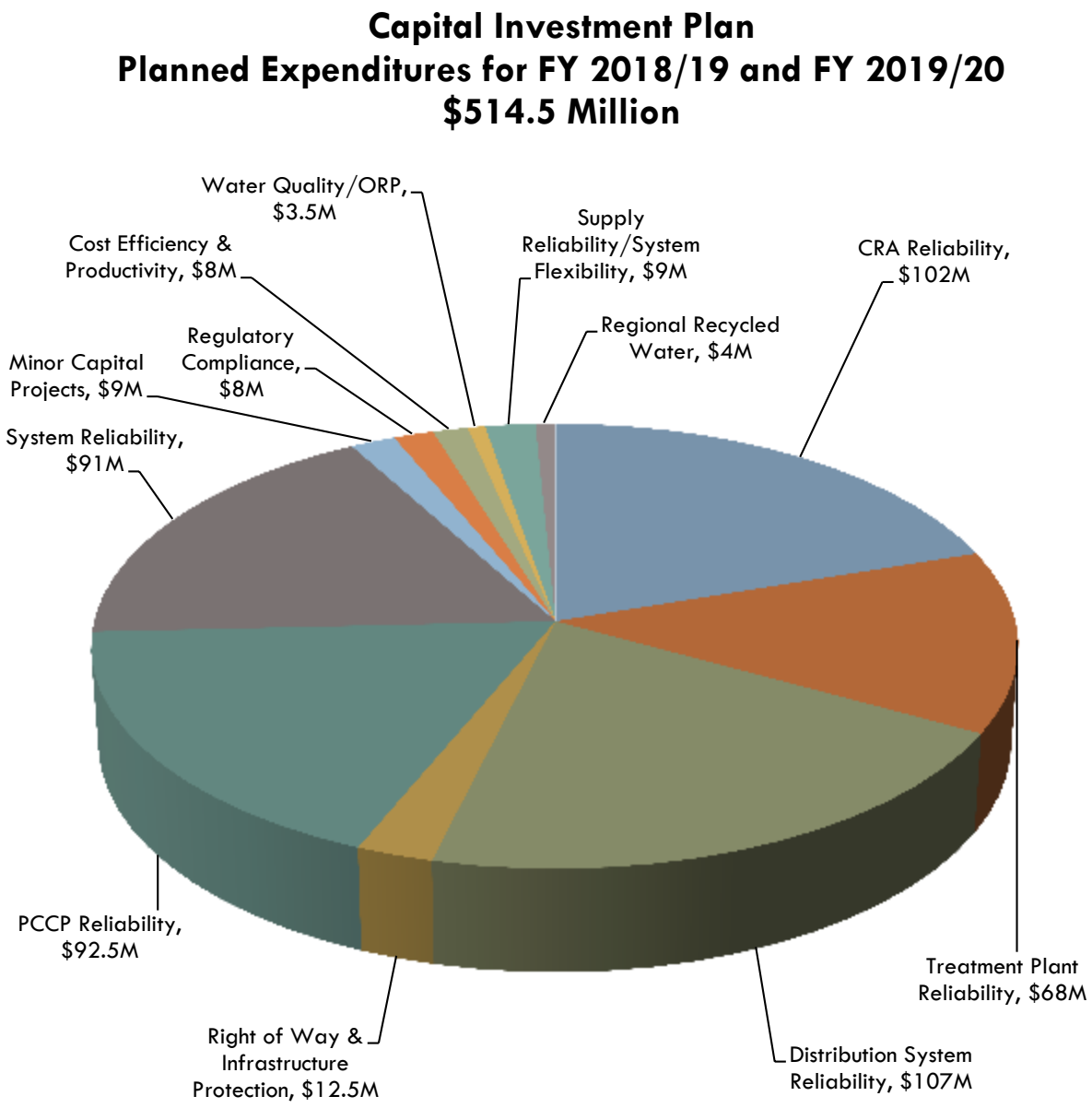


Figure 1: CIP for FY2018/19 and FY2019/20 by Program

[Cover photo: Advanced Water Treatment Demonstration Facility]

SECOND QUARTER SUMMARY

The total Capital Investment Plan (CIP) planned expenditures for FYs 2018/19 and 2019/20 are $514.5 million, and are shown in relation to their associated program in Figure 1. The capital budget for the same period is $400 million. This two-year capital budget is established based on the historical variance between the annual actual expenditures and the annual planned expenditures. Based on the most recent five-year historical average, actual fiscal year CIP expenditures are approximately 80% of the annual planned expenditures.

Fiscal year expenditures through December 2018 totaled $85.62 million and expenditures for the 2nd quarter, October 2018 through December 2018, totaled $42.76 million for all capital programs. All capital appropriations are within their authorized budgets.

During the current fiscal year, Board actions to appropriate funds were only required from July through October. In the 2nd Quarter, the Board appropriated a total of $65.75 million through five project-specific actions. In October 2018, the Board appropriated an additional $290 million to fund all remaining expenditures for planned CIP projects through June 2020. This action resulted from the Board's adoption of a new approach to appropriating funds for the CIP. Details of this approach are documented in the Board letter Item 8-2 dated October 9, 2018.

Information on construction and procurement contracts is summarized in the table below. Progress payments for these contracts in the quarter totaled $16.13 million and primarily reflect progress on the rehabilitation of Palos Verdes Reservoir, construction of the Advanced Water Treatment Demonstration Plant, rehabilitation of basins and filters at the Diemer plant, construction of the Orange County Region Service Center, relocation of the power line that serves the Intake Pumping Plant, and rehabilitation of Prestressed Concrete Cylinder Pipe (PCCP) sections of the Second Lower Feeder.

Contract Actions during Q2 for FY 2018/2019, October 2018 through December 2018	
Contracts Awarded	9 construction contracts totaling $147.91 million 2 procurement contracts for $27.28 million
Contract Payments Authorized	$16.13 million
Contracts Completed	6 construction contracts were completed
Active Contracts at end of Q2	27 construction contracts 17 procurement contracts $299.13 million total value

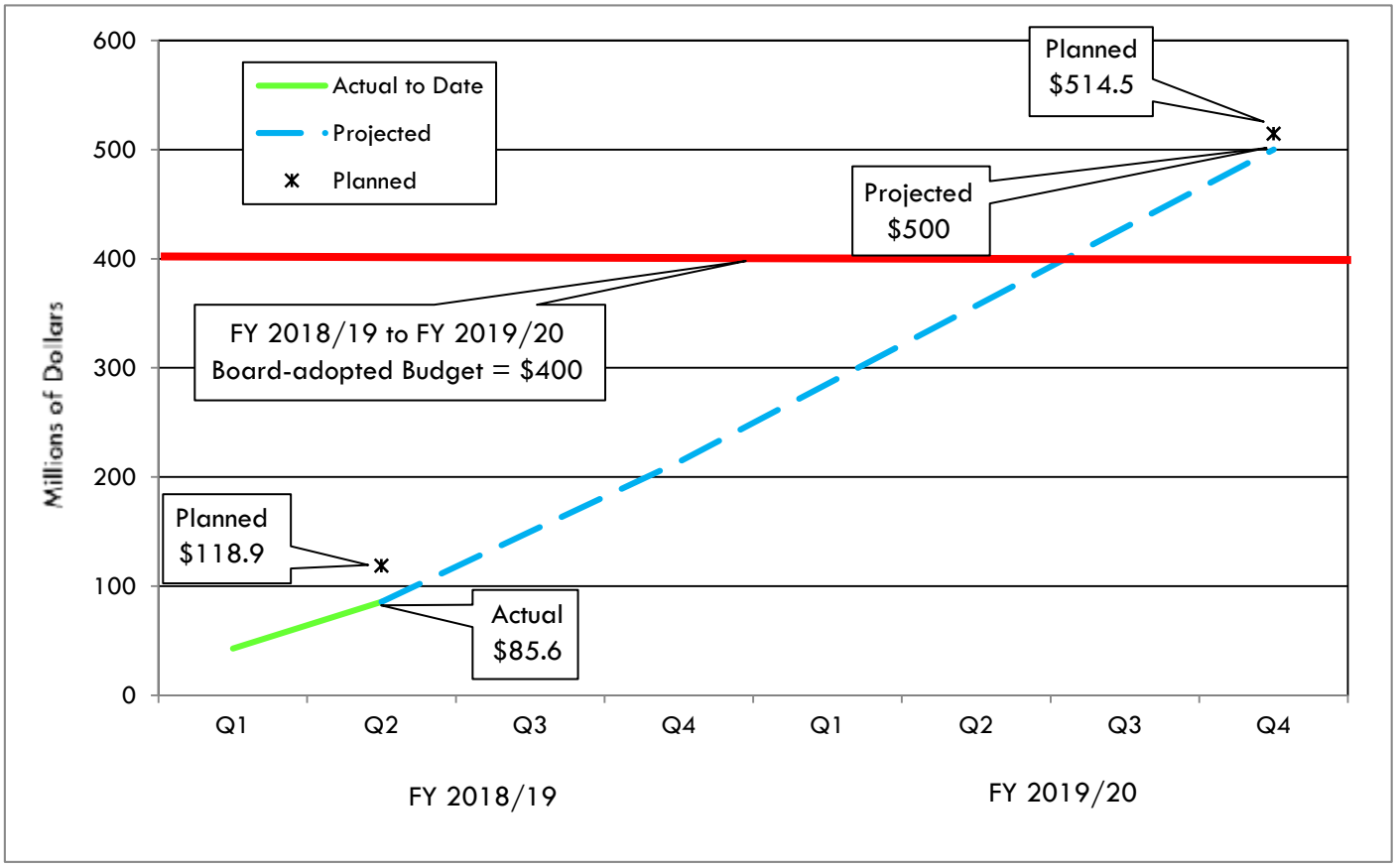
PLANNED EXPENDITURE AND BUDGET

In October 2018, the Board appropriated the estimated additional funds ($290 million) needed to perform the planned capital work for the rest of the biennium, authorized the General Manager to initiate or proceed with the work on all planned capital projects identified in the CIP for FYs 2018/19 and 2019/20, and delegated to the General Manager the authority to determine whether a project is exempt from the California Environmental Quality Act (CEQA).

In the event that the need to initiate capital projects, not identified in the CIP for FYs 2018/19 and 2019/20, arise during the remainder of the biennium, staff will return to the Board for authorization to proceed. Likewise staff will continue to bring actions to the Board for award of agreements or contracts over $250,000.

Fiscal year actual expenditures through the end of the 2nd quarter and the forecast of expenditures through the end of the current biennium (fiscal year 2019/20) are shown against the Board-adopted budget and planned expenditures for the same time interval in Figure 2 below.

Figure 2: FY Planned and Actual Expenditures through 2nd Quarter and Forecasted Expenditures through FY 2019/20



As previously described, the total planned expenditures in the current biennium are $514.5 million and shown in Figure 2. The projected expenditures for the biennium, also shown in Figure 2, are based on approved work plans that include in-house and consultant labor and construction work currently underway, plus planned contract awards over fiscal years 2018/19 and 2019/20. Actual expenditures will depend on a variety of factors including unplanned O&M work, acquisition of permits and right-of-way, timing of facility shutdowns, and availability of labor resources.

Allowing for carryover of previously appropriated funds, the remaining required funds to implement the CIP in the current biennium were estimated at $290 million. The October Board action, documented in Board letter Item 8-2, appropriated all remaining estimated funds to perform work on planned capital projects through the current biennium. Consistent with the October 2018 action, all requests to allocate funds and proceed with planned capital projects are reviewed and approved by the Chief Engineer acting under the General Manager's authority. Upon approval, such requested funds are then transferred from the $290 million (Appropriation 15509) to the pertinent capital appropriation under which the project is budgeted. These transfers are based on both Board actions and management decisions to initiate planned capital projects and/or proceed to the next phase of planned work.

Actual versus planned expenditures by program for FY 2018/19 ending the 2nd quarter are shown in Figure 3 below:

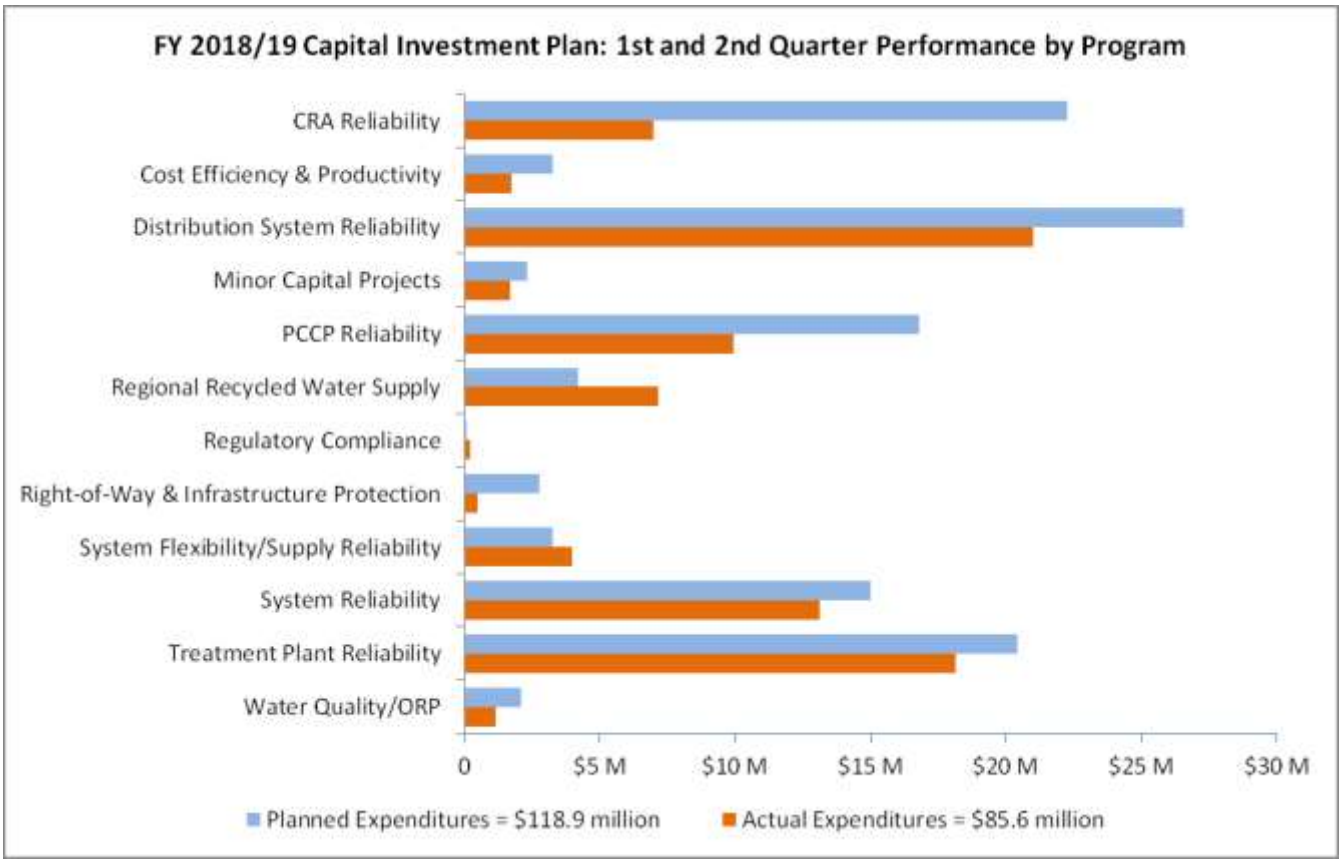


Figure 3: FY Expenditures (Actuals vs. Planned) through 2nd Quarter

Subsequent to the October 2018 Board action, staff will now be reporting, on a quarterly basis, the allocation of funds from Appropriation 15509 to individual programs. In the 2nd quarter of the current fiscal year, nearly $110 million was allocated from Appropriation 15509 to approved projects. In order to be considered an approved project, the project must be included and described in the Capital Investment Plan Appendix for the two year budget cycle. The quarterly allocation of funds during this biennium cycle to the approved projects is shown in Figure 4. Specific transfers from Appropriation 15509 to planned capital projects in the 2nd quarter are listed in Table 2 on Page 42, under the Project Actions section of this report.

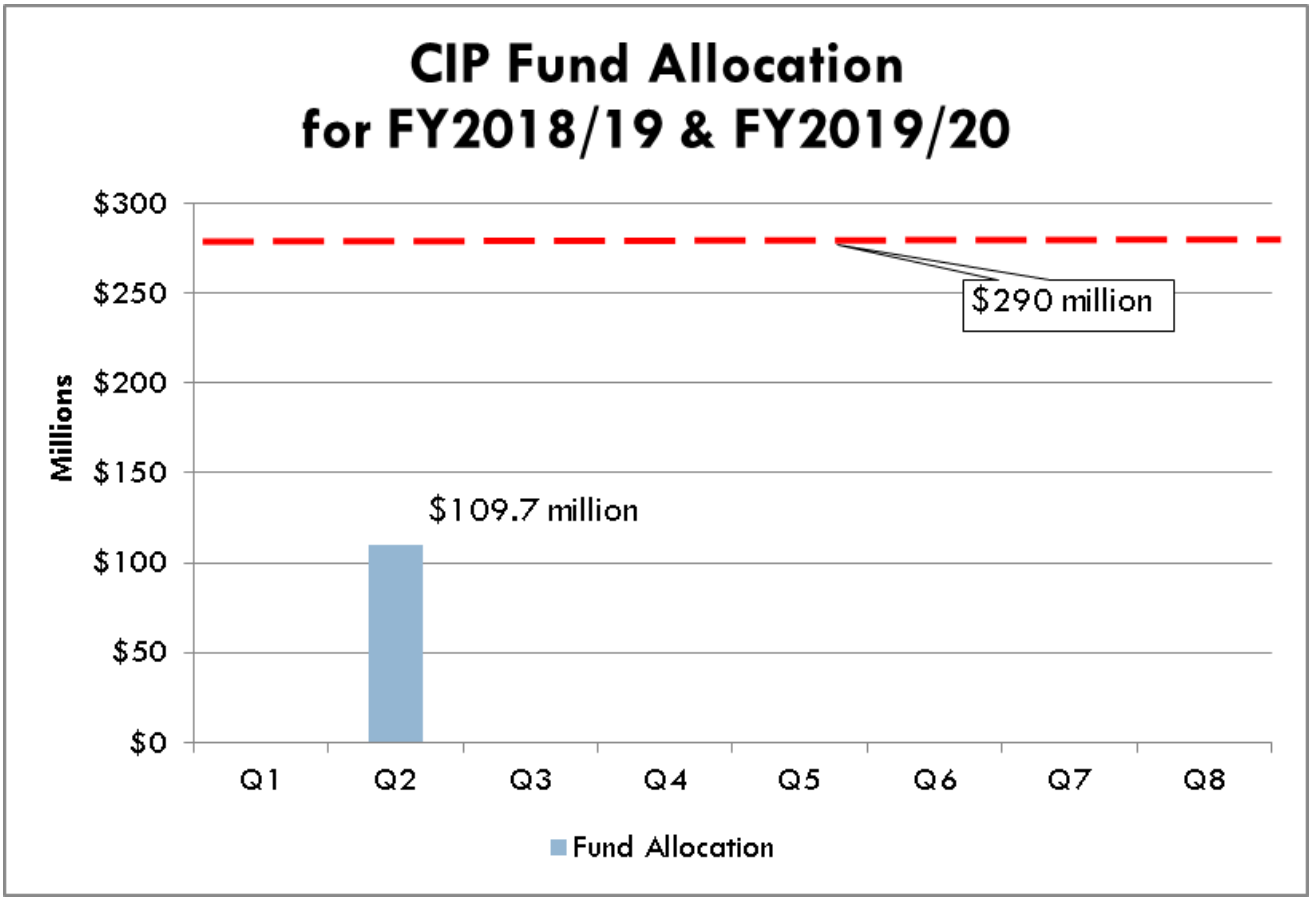


Figure 4: CIP Fund Allocation from Appropriation 15509 - FY2018/19 and FY2019/20

MAJOR CAPITAL PROGRAMS

Metropolitan's CIP is structured into three levels. In descending order, they are:

- Program
- Appropriation
- Project

The highest level of the CIP structure is Program. Twelve capital programs have been established at Metropolitan to capture all projects within the CIP. The 12 capital programs are listed below in alphabetical order. Programs are comprised of one or more appropriations, and appropriations are comprised of one or more projects. The status of each of the programs is provided in this section of the report.

- Colorado River Aqueduct (CRA) Reliability
- Cost Efficiency & Productivity
- Distribution System Reliability
- Minor Capital Projects
- Prestressed Concrete Cylinder Pipe (PCCP) Reliability
- Regional Recycled Water Supply
- Regulatory Compliance
- Right-of-Way and Infrastructure Protection
- System Flexibility/Supply Reliability
- System Reliability
- Treatment Plant Reliability
- Water Quality/Oxidation Retrofit

Overall, there are currently 345 planned projects (excluding Minor Capital Projects) in 70 appropriations within the CIP for the current biennium (fiscal years 2018/19 and 2019/20).

The list of appropriations that make up each of the Programs along with planned expenditures and actual costs to date for those appropriations are provided in Table 14 at the end of this report.

Table 1 on the next page lists the top 10 planned capital projects for the current biennium based on their planned expenditures during the biennium. Their financial status, including planned versus actual expenditures at the end of the 2nd quarter is also shown in this table.

Table 1: Top Ten Planned Capital Projects, based on planned expenditures for FY 2018/19 through FY 2019/20

Top 10 Planned Capital Projects for Current Biennium (FY 2018/19 through FY 2019/20)			
Project	**Planned (FY 2018/19 through FY 2019/20)**	**Planned (FY 2018/19 to end of 2nd Quarter)**	**Actuals (FY 2018/19 to end of 2nd Quarter)**
Second Lower Feeder PCCP Rehabilitation	$77.6M	$12.4M	$8.1M
Headquarters Improvements	$24.3M	$1.2M	$1.7M
Orange County Feeder Lining Replacement	$19.4M	$1.6M	$0.5M
Palos Verdes Reservoir Rehabilitation	$15.0M	$6.8M	$6.6M
CRA 6.9kV Power Cable Replacement	$14.0M	$0.8M	$0.4M
CRA Pumping Plant Sump System Rehabilitation	$11.0M	$1.8M	$0.1M
Orange County Service Center	$10.4M	$1.0M	$3.0M
Wadsworth Pumping Plant Control & Protection Upgrades	$9.9M	$3.7M	$3.3M
CRA Water Distribution System & Roadway Asphalt Replacement	$9.0M	$0.7M	$0.5M
Weymouth Filter Valve Replacement	$9.0M	$2.0M	$0.1M
Total	**$199.6M**	**$32.0M**	**$24.3M**

The following pages of this section provide 2nd quarter highlights of each program, with the exception of the Minor Capital Projects Program which is highlighted in its own section of this report.

Colorado River Aqueduct (CRA) Reliability Program

Program Information: *The CRA Reliability Program is composed of projects to replace or refurbish facilities and components of the CRA system in order to reliably convey water to Southern California.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$22.27 million	$6.98 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Expenditures on the CRA are less than planned for the quarter due to several factors: • Recently awarded contracts are in early phases in which submittal reviews and fabrication are proceeding with major construction occurring in upcoming quarters. • Construction work tied to the planned February 2019 CRA shutdown for performance of work
Accomplishments	• Completion of three contracts for renovation of seven CRA houses • October 2018 Board award of contract to replace concrete panels on the CRA and Iron Mountain Reservoir • December 2018 Board award of contract to rehabilitate Circulation Water and Sump Discharge Piping Systems • Completion of design to replace the CRA's 6.9kV motor cables

Upcoming Activities	Upcoming work for the next quarter will include:
	• Award a contract award to replace the 6.9kV motor cables.
	• Shutdown of the CRA in February 2019.
	• CIP work during the shutdown will include:
	  ○ Installation of surge chamber bypass covers at each pumping plant
	  ○ Replacement of concrete lining at the CRA & Iron Mountain Reservoir
	  ○ Tie-in work by Metropolitan forces in support of the Intake powerline relocation

CRA Reliability Program:
CRA 6.9kV Power Cable Replacement

This project will replace deteriorated main power cables at each of the five CRA pumping plants.

Phase	Final Design
% Complete for Current Phase	100%
Final Design Authorized	June 2014
Appropriation Number	15384

Estimated Final Design Completion Date:
December 2018

Total Project Estimate:
$26.1 million*

Cost to Date: $2,174,775

*** Revised based on updated project cost estimate***

Power cables and splice boxes

CRA Reliability Program:
CRA Pumping Plant Sump System Rehabilitation

This project will rehabilitate the sump discharge piping and circulating water system at each of the five CRA pumping plants.

Estimated Construction Completion Date:
June 2021

Total Project Estimate:
$40.0 million*

Cost to Date: ***$4,831,317***

*** Revised based on updated project cost estimate***

Phase	Construction
% Complete for Current Phase	1%
Construction Contract Awarded	December 2018
Appropriation Number	15438
Contract Number	1908

Gene Pumping Plant: Corroded circulating water pipe

CRA Reliability Program:
CRA Water Distribution System & Roadway Asphalt Replacement

This project will replace water distribution systems and asphalt roadways at all five CRA pumping plants.

Phase	Final Design
% Complete for Current Phase	95% Hinds & Eagle 50% Gene & Iron 5% Intake
Final Design Authorized	December 2017
Appropriation Number	15483

Estimated Final Design Completion Dates:
Hinds & Eagle: July 2019
Gene & Iron: January 2020
Intake: September 2020

Total Project Estimate:
$27.6 million*

Cost to Date: $1,734,797

*** Revised based on updated project cost estimate***

Gene Pumping Plant: Deteriorated water piping system and asphalt pavement

Cost Efficiency and Productivity Program

Program Information: *The Cost Efficiency and Productivity Program is composed of projects to upgrade, replace, or provide new facilities, software applications, or technology, which will provide economic savings that outweigh project costs through enhanced business and operating processes.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$3.26 million	$1.74 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Expenditures for this program are less than planned for the quarter due to several factors: • Longer than anticipated time to move files and data on the network drives for the Enterprise Content Management • Delays in executing an agreement with the Project Controls and Reporting System (PCRS) design consultant and setting up IT servers for the PCRS consultant due to new IT security measures

Accomplishments	• Completed deployment of server and environment setup for the PCRS
	• Completed enterprise content management design for the following organizations:
	  ○ Administrative Services
	  ○ Ethics
	  ○ Human Resources
	  ○ Information Technology
	  ○ Real Estate
	  ○ Water Quality

Upcoming Activities	Upcoming work for the next quarter will include: • Completion of enterprise content management design for Engineering Upcoming work for the first quarter of FY 2019/20 will include: • Completion of data migration for the PCRS

Cost Efficiency & Productivity Program:
Enterprise Content Management Phase I

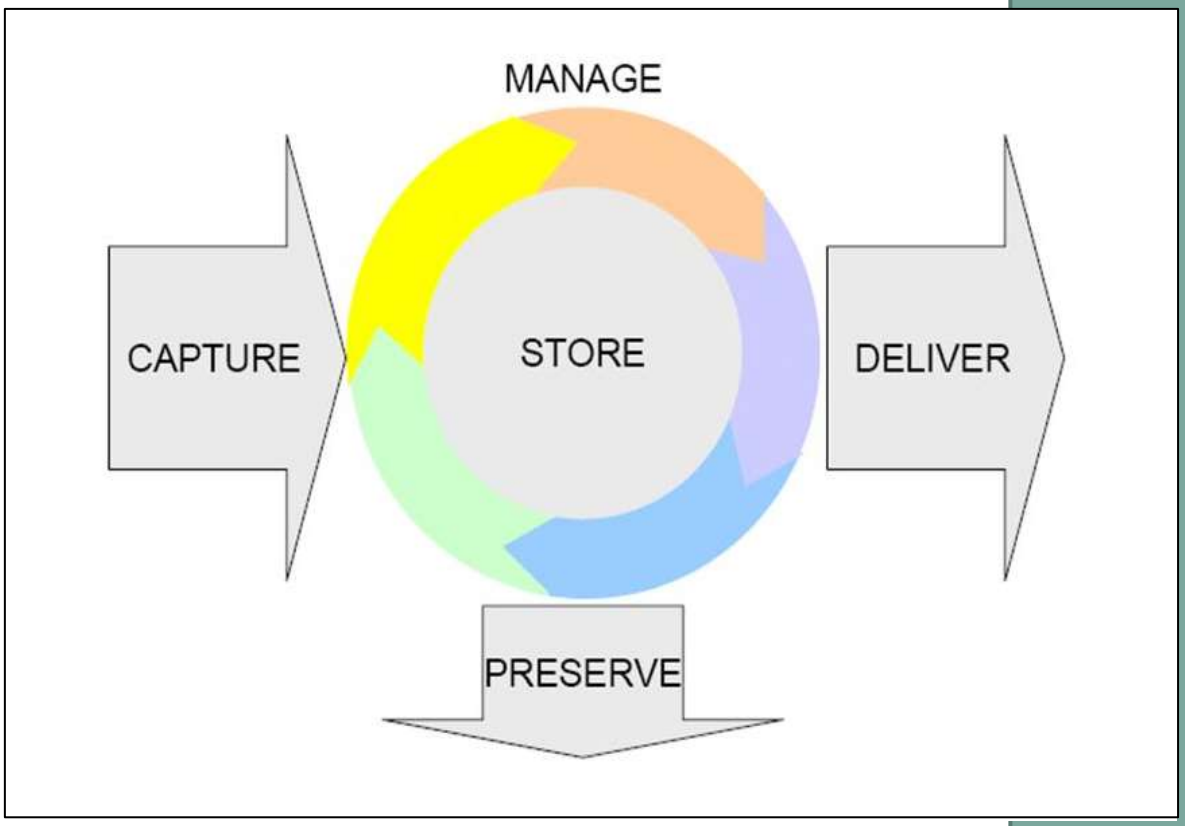
This project will design an enterprise content management application that will classify and manage electronic documents and other media to allow for easy retrieval, review, and destruction of information in accordance with Metropolitan's record retention schedule.

Phase	Final Design
% Complete for Current Phase	45%
Design Authorized	July 2017
Appropriation Number	15500

Estimated Final Design Completion Date:
December 2019

Total Project Estimate:
$1.9 million

Cost to Date: ***$522,506***



Enterprise content management concepts

Cost Efficiency & Productivity Program: Project Controls and Reporting System

Estimated Deployment Completion Date:
December 2019

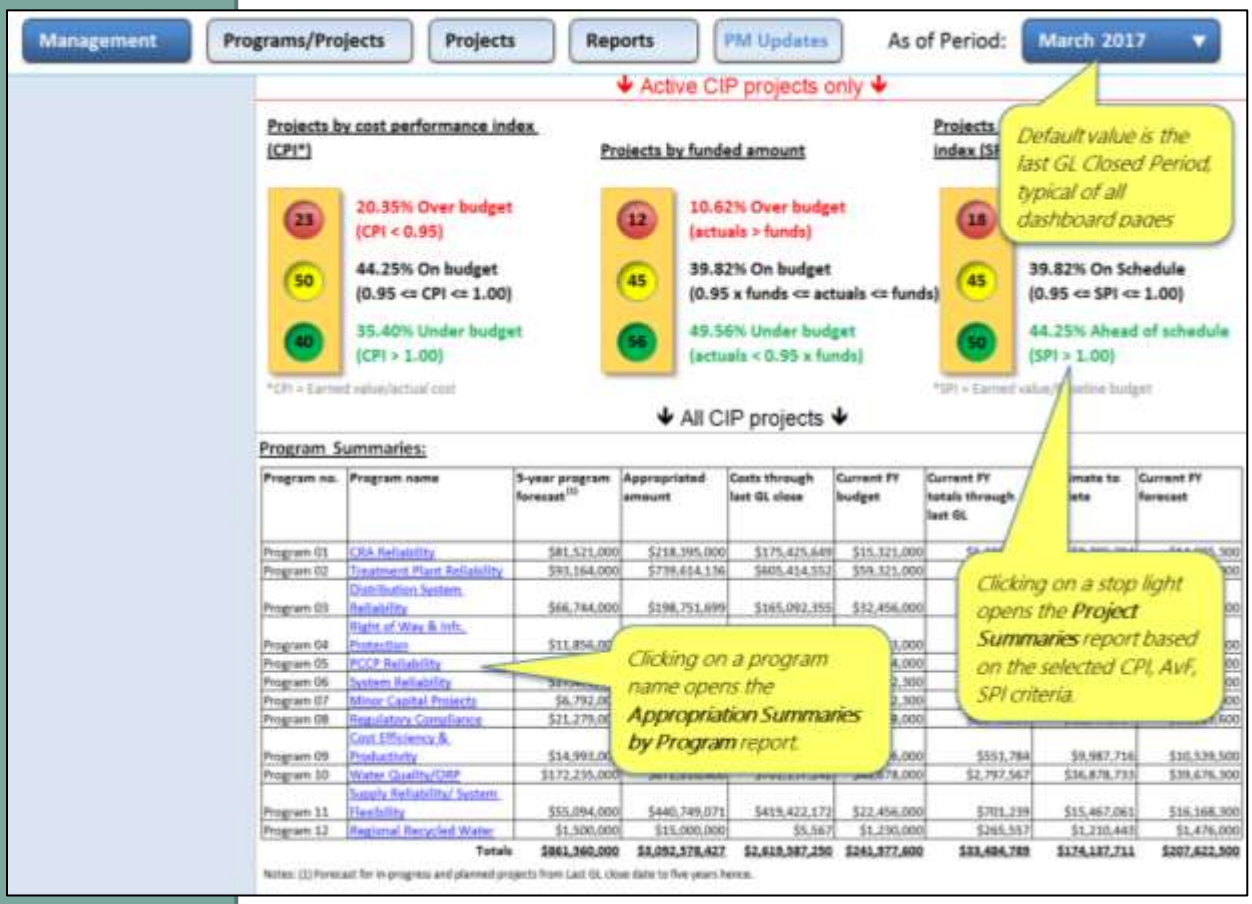
Total Project Estimate:
$5.8 million*

Cost to Date: ***$2,206,137***

*** Revised based on updated project cost estimate***

This project will replace the existing project control system that is now functionally obsolete.

Phase	Deployment
% Complete for Current Phase	20%
Board Authorized	October 2017
Appropriation Number	15490



Proposed project controls and reporting system dashboard design

Distribution System Reliability Program

Program Information: *The Distribution System Reliability Program is comprised of 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.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$26.57 million	$21.01 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Expenditures on the Distribution System Reliability are less than planned for the fiscal year ending December 2018 due to shifts in timing of the work.
Accomplishments	October 2018 Board Actions • Design authorized to replace Lake Mathews sodium hypochlorite tank • Design authorized to upgrade Sepulveda Feeder-East Valley Feeder interconnection electrical system • Preliminary design authorized to rehabilitate Sepulveda Feeder-West Basin Feeder Interconnection November 2018 Board Actions • Award of construction contract to replace lining of Orange County Feeder-Reach 2 • Award of construction contract to upgrade electrical systems at 15 structures in Orange County Region • Authorization of a professional services agreement to perform preliminary investigations to upgrade electrical systems at 290 structures in the Orange County Region
Upcoming Activities	Upcoming work for the next quarter will include: • Board award of construction contract to replace a venturi meter and valves inside a structure located on the East Orange County Feeder No. 2 • Board award of construction contract to replace the last portion of interior mortar lining for the Etiwanda Pipeline • Board award of contract to procure two chemical storage tanks to replace the existing sodium hypochlorite storage tanks at Lake Mathews • Complete replacement of Palos Verdes Reservoir cover and liner • Complete draft study for Lake Skinner and Lake Mathews spillway upgrades

Distribution System Reliability Program:
Spillway Upgrades for Lake Skinner and Lake Mathews

This project will assess and upgrade the dam spillway and appurtenant structures at Lake Skinner and Lake Mathews.

Phase	Study
% Complete for Current Phase	80%
Study Authorized	December 2017
Appropriation Number	15419

Estimated Study Completion Date: June 2019

*Total Project Estimate: $17.5 million**

Cost to Date: $659,733

** Revised based on updated project cost estimate*

Lake Skinner: Spillway chute and energy dissipater blocks

Distribution System Reliability Program:
Palos Verdes Reservoir Cover Replacement

This project will replaces the reservoir's existing floating cover and liner, and modify the existing spillway, control tower, and outlet structures.

Phase	Construction
% Complete for Current Phase	93%
Construction Contract Awarded	November 2015
Appropriation Number	15417
Contract Number	1825

Estimated Construction Completion Date:
March 2019

Total Project Estimate:
$39.4 million*

Cost to Date: ***$39,142,899***

*** Revised based on updated project cost estimate***

Palos Verdes Reservoir: Installation of floating cover and rainwater collection trough

Prestressed Concrete Cylinder Pipe (PCCP) Reliability Program

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

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$16.79 million	$9.92 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Expenditures on the PCCP are less than planned for the quarter due to delays to the Reach 4 construction shutdown to accommodate the Sepulveda Feeder Urgent Relining.
Accomplishments	• November 2018 Board award of contract to rehabilitate Second Lower Feeder Reach 4 • December 2018 Board award of procurement contract for 13 large diameter conical plug valves for the Second Lower Feeder PCCP Rehabilitation • December 2018 Board award of contract for urgent relining on the Sepulveda Feeder at Del Amo Blvd
Upcoming Activities	Upcoming work for the next quarter will include: • Award a contract award to rehabilitate Second Lower Feeder Reach 2 • Shutdown of the Second Lower Feeder in March 2019 for Reach 4 • Shutdown of the Sepulveda Feeder in January 2019 for urgent relining

PCCP Reliability Program:
Second Lower Feeder PCCP Rehabilitation – Reach 4

This project will rehabilitate approximately 2 miles of existing PCCP segments with a steel liner.

Phase	Construction
% Complete for Current Phase	10%
Construction Contract Awarded	November 2018
Appropriation Number	15497
Contract Number	1940

Estimated Construction Completion Date:
November 2019

Total Project Estimate:
$29.9 million*

Cost to Date: ***$3,352,890***

*** Revised based on updated project cost estimate***

Fabrication of coiled steel liner pipe for Reach 4

PCCP Reliability Program:
Sepulveda Feeder PCCP Urgent Relining

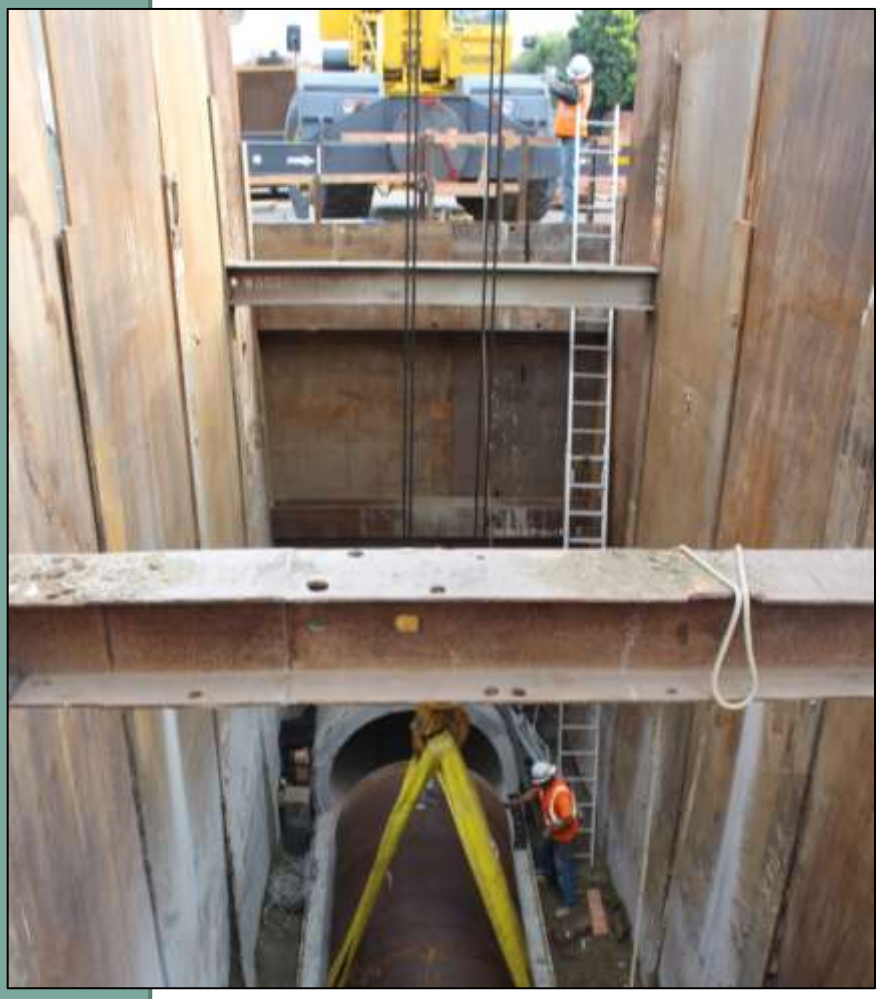
Estimated Construction Completion Date:
February 2019

Total Project Estimate:
$3.6 million

Cost to Date: ***$103,724***

This project will reline approximately 400 feet of existing PCCP segments with a steel liner during the January 2019 shutdown.

Phase	Construction
% Complete for Current Phase	5%
Construction Contract Awarded	December 2018
Appropriation Number	15496
Contract Number	1950



New steel liner segment being lowered for installation (typical)

Regional Recycled Water Supply Program

Program Information: *The Regional Recycled Water Supply Program includes the design and construction of the Advanced Water Treatment Demonstration Plant, which represents the initial step in development of a potential regional recycled water system for recharge of groundwater basins within Southern California.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$4.19 million	$7.15 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Actual fiscal year expenditures though December 2018 are more than planned due to shifts in timing of the work from the planned expenditures developed for the budget adoption in April 2018. The project is on budget.
Accomplishments	• Construction is substantially complete. • Functional testing of the equipment is being performed in anticipation of the facility start-up in March 2019.
Upcoming Activities	Upcoming work for the next quarter will include: • Facility start-up in March 2019

Regional Recycled Water Supply Program: Advanced Water Treatment Demonstration Facility

This project will construct an advanced water treatment demonstration facility at the Los Angeles County Sanitation Districts' Joint Water Pollution Control Plant to test the effectiveness of various advanced water treatment processes for regulatory approval of the potential regional recycled water program.

Phase	Construction
% Complete for Current Phase	93%
Construction Contract Awarded	March 2019
Appropriation Number	15493
Contract Number	1856

Estimated Construction Completion Date: ***March 2019***

Total Project Estimate: ***$17.0 million***

Cost to Date: ***$14,878,751***

Construction of facility canopy

Regulatory Compliance Program

Program Information: *The Regulatory Compliance Program is comprised of projects to provide for prudent use and management of Metropolitan's assets in compliance with regulations and codes other than water quality.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$0.06 million	$0.23 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Expenditures on the Regulatory Compliance are more than planned for the first half of this fiscal year due to shifts in timing of the work but are on track for the fiscal year.
Accomplishments	Completion of additional subsurface investigation at Iron Mountain Pumping Plant for the wastewater system replacement project to verify the location of underground utilities shown on record drawings that are more than 70 years old
Upcoming Activities	Upcoming work for the next quarter will include: • Performing additional subsurface investigation at Gene Pumping Plant in March 2019 for the wastewater system replacement project. The findings from these investigations will be incorporated into the final design.

Regulatory Compliance Program:
CRA Pumping Plant Wastewater System Replacement – Gene & Iron Mountain

This project will replace wastewater systems at Gene and Iron Mountain Pumping Plants.

Phase	Final Design
% Complete for Current Phase	50%
Final Design Authorized	December 2012
Appropriation Number	15385

Estimated Final Design Completion Date:
January 2020

Total Project Estimate:
$9.4 million*

Cost to Date: ***$690,543***

*** Revised based on updated project cost estimate***

Gene Pumping Plant: Sewer vault

Right-Of-Way and Infrastructure Protection Program

Program Information: *The Right of Way Infrastructure Protection Program (RWIPP) is comprised of projects to refurbish or upgrade above-ground facilities and right-of-way along Metropolitan's pipelines in order to address access limitations, erosion-related issues, and security needs.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$2.74 million	$0.49 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Expenditures on RWIPP are less than planned for the quarter due to several factors: • Orange County Region – Negotiations over environmental permits with California Department of Fish & Wildlife have taken longer than anticipated • Orange County Region – Obtaining right-of-way has taken longer than anticipated
Accomplishments	Orange County Region – Negotiations over environmental permits and right-of-way continuing
Upcoming Activities	Upcoming work for the next quarter will include: • Orange County Region - Obtain environmental permits and right-of-way for construction • Western San Bernardino Region – Continue work on final design of infrastructure improvements • Los Angeles Region – Start final design on infrastructure improvements • Riverside/San Diego Region – Start final design on infrastructure improvements

Right of Way Infrastructure Improvement Program: Detailed Reliability Improvements of the Orange County Operating Region

This project will refurbish or upgrade above-ground facilities and right-of-way along Metropolitan's pipelines in order to address access limitations, erosion-related issues, and security needs in the Orange County operating region.

Phase	Final Design
% Complete for Current Phase	90%
Final Design Authorized	August 2014
Appropriation Number	15474

Estimated Final Design Completion Date: ***October 2019***

Total Project Estimate: ***$24.1 million***

Cost to Date: ***$5,787,644***

Manhole on Lower Feeder after storm runoff in Aliso Canyon, Chino Hills State Park

System Flexibility/Supply Reliability Program

Program Information: *The System Flexibility/Supply Reliability Program is comprised of projects to increase the capacity and flexibility of Metropolitan's water supply and delivery infrastructure to meet service demands.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$3.23 million	$3.99 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Actual fiscal year expenditures though December 2018 are more than planned due to shifts in timing of the work from the planned expenditures developed for the budget adoption in April 2018. The projects are on budget.
Accomplishments	• Completed study report for Lake Perris Seepage Water Conveyance Pipeline • Completed installation of multiple isolation valves for Inland Feeder/Lakeview Pipeline Intertie
Upcoming Activities	Upcoming work for the next quarter will include: • Complete preliminary design for Lake Perris Seepage Water Conveyance Pipeline • Begin record drawings preparation for Inland Feeder/Lakeview Pipeline Intertie

System Flexibility/Supply Reliability Program:
Inland Feeder and Lakeview Pipeline Intertie

This project will design and construct an intertie between the Lakeview Pipeline and Inland Feeder to provide a backup supply to the Mills Water Treatment Plant from the Diamond Valley Lake.

Phase	Post-Construction
% Complete for Current Phase	5%
Construction Contract Awarded	August 2017
Appropriation Number	15488
Contract Number	1860

Estimated Post-Construction Completion Date:
October 2019

Total Project Estimate:
$26.4 million

Cost to Date: ***$24,537,998***

Newly installed 60-inch-diameter butterfly valve on the intertie pipeline

System Flexibility/Supply Reliability Program:
Lake Perris Seepage Water Conveyance Pipeline

Estimated Preliminary Design Completion Date:
March 2019

Total Project Estimate:
$6.5 million

Cost to Date: ***$354,210***

This project will design and construct a new pipeline to collect water from a Department of Water Resources planned wellfield located below Perris Dam. The pipeline will convey Lake Perris leakage water to the Colorado River Aqueduct.

Phase	Preliminary Design
% Complete for Current Phase	20%
Preliminary Design Authorized	April 2017
Appropriation Number	15402

Pipeline alignment options to convey Lake Perris seepage water to the CRA

System Reliability Program

Program Information: *The System Reliability Program is comprised of 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.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$15.01 million	$13.10 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Actual fiscal year expenditures though December 2018 are less than planned due to shifts in timing of the work from the planned expenditures developed for the budget adoption in April 2018. The projects are on budget.
Accomplishments	• October 2018 Board authorization to design headquarters building audiovisual system upgrade • November 2018 Board award of contract for the Headquarters Improvements • December 2018 Board authorization to increase the existing professional services agreement amount to support final design of the water quality laboratory heating, ventilation, and air conditioning system improvements
Upcoming Activities	Upcoming work for the next quarter will include: • Headquarters Improvements construction mobilization in February 2018 • Continue replacement of the control and protection equipment for the Wadsworth Pumping Plant • Continue final design of the water quality laboratory HVAC improvements and the headquarters building audiovisual system upgrade projects

System Reliability Program:
Headquarters Improvements

This project will reduce the risk of significant damage to Metropolitan's Headquarters building in the event of a major earthquake, along with the associated disruption of Metropolitan's business processes.

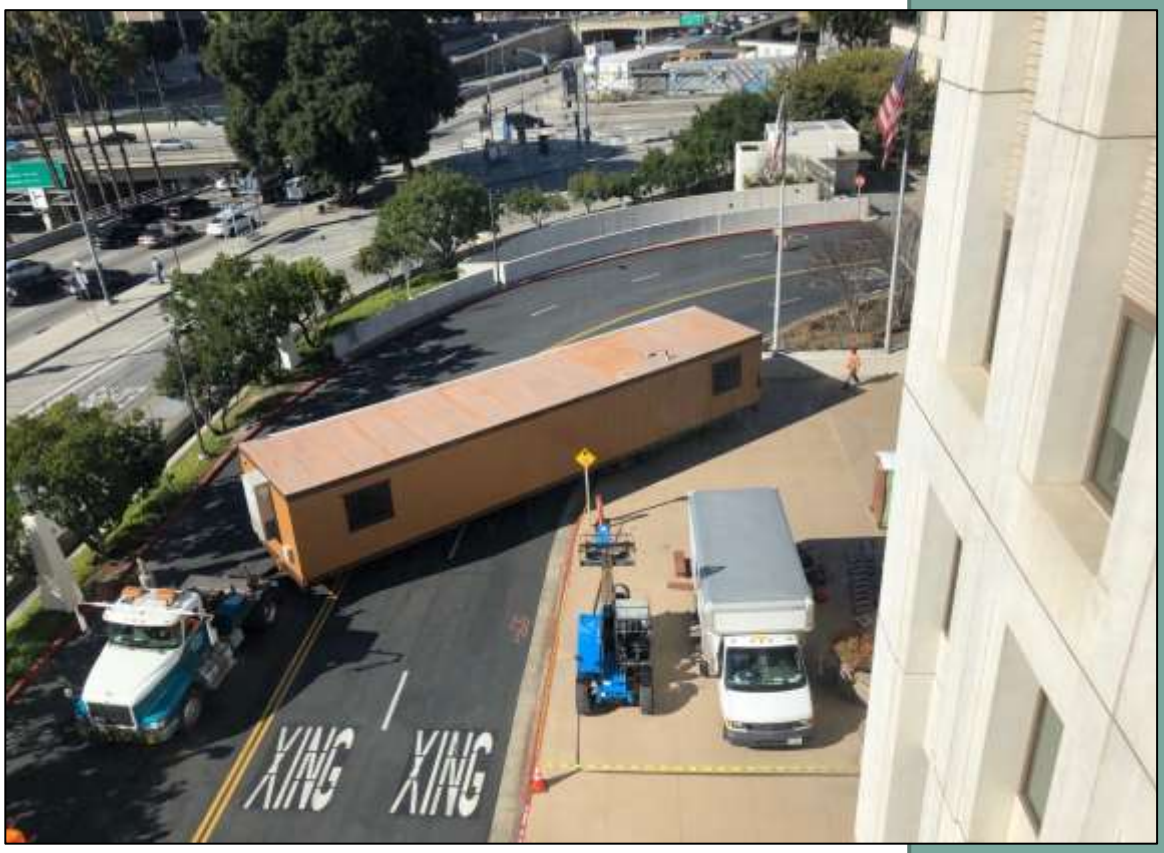
Phase	Construction
% Complete for Current Phase	Initiated
Construction Contract Awarded	November 2018
Appropriation Number	15473
Contract Number	1905

Estimated Construction Completion Date:
January 2022

Total Project Estimate:
$74.7 million*

Cost to Date: ***$12,356,193***

*** Revised based on updated project cost estimate***



Installation of contractor construction trailer at Union Station

System Reliability Program:
Wadsworth Pumping Plant Control & Protection

This project will upgrade control and electrical protection systems for eight pump/turbine units at Wadsworth Pumping Plant at Diamond Valley Lake.

Estimated Deployment Completion Date:
February 2020

Total Project Estimate:
$34.7 million*

Cost to Date: ***$22,018,076***

*** Revised based on updated project cost estimate***

Phase	Deployment
% Complete for Current Phase	55%
Board Authorized	April 2017
Appropriation Number	15467

Pump/Turbine control cabinets

Treatment Plant Reliability Program

Program Information: *The Treatment Plant Reliability Program is comprised of 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.*

Planned FY2018/2019 Expenditures (through December 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$20.43 million	$18.15 million

PROGRAM HIGHLIGHTS (2ND QUARTER)	
Status	Actual fiscal year expenditures though December 2018 are slightly less than planned due to shifts in timing of the work.
Accomplishments	• October 2018 Board award of contracts for Diemer West Basin and Filter Building Rehabilitation and Diemer Filter Valve Actuator Refurbishment • October 2018 Board authorized construction of Diemer Water Sampling System Improvements by Metropolitan forces • December 2018 Board award of contracts for Weymouth Chlorine System Upgrades
Upcoming Activities	Upcoming work for the next quarter will include: • Advertisement for construction of Jensen Modules Nos. 2 and 3 Flocculator Rehabilitation • Start construction of Jensen Fluoride Tank Replacement by Metropolitan forces • Advertisement for Stage 2 construction of the electrical upgrades at the Jensen plant

Treatment Plant Reliability Program:
Diemer West Basin & Filter Building Rehabilitation

This project will rehabilitate the Diemer Water Treatment Plant's west flocculation/sedimentation basins and filter building. The work includes the replacement of treatment basin equipment, and filter valves, abatement of hazardous materials, and seismic strengthening of the filter building.

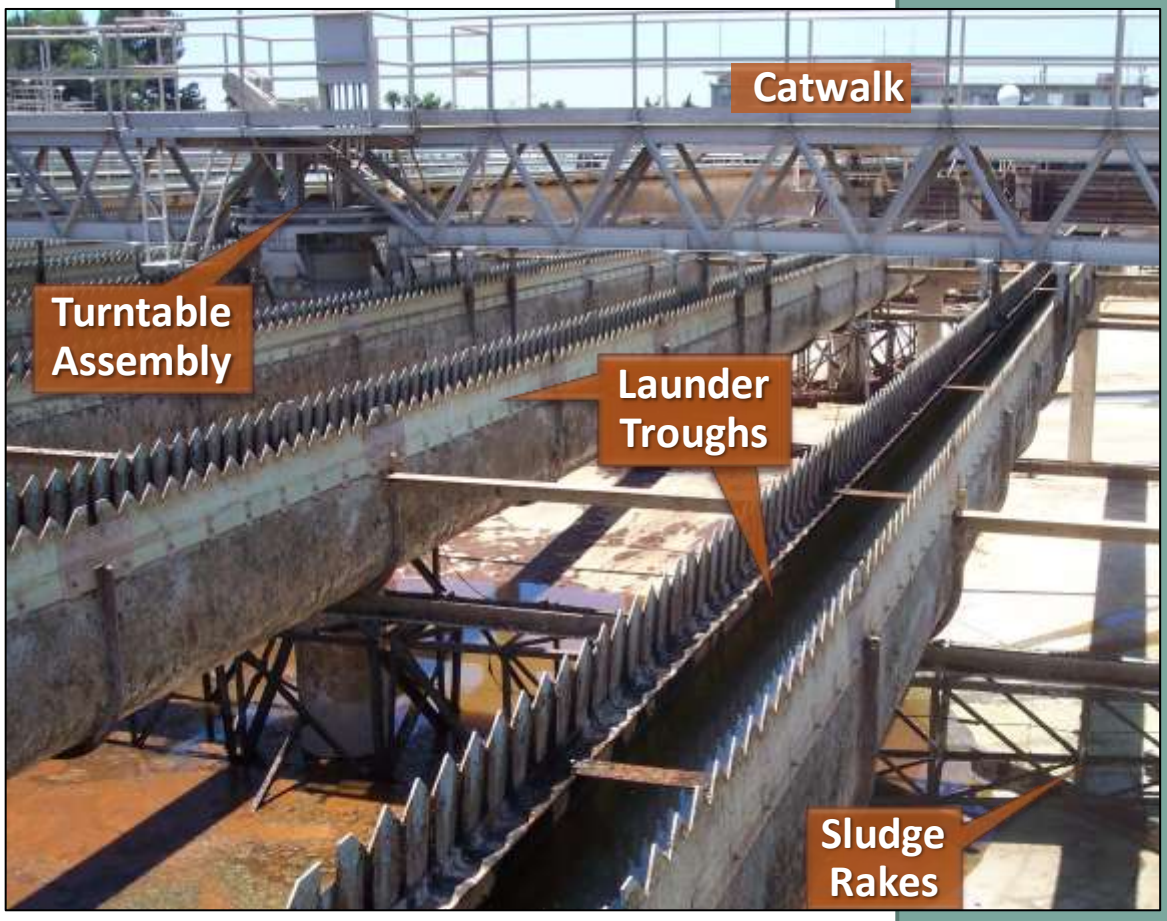
Phase	Construction
% Complete for Current Phase	5%
Construction Contract Awarded	October 2018
Appropriation Number	15380
Contract Number	1900

Estimated Construction Completion Date:
November 2020

Total Project Estimate:
*$44.2 million**

Cost to Date: $537,144

** Revised based on updated project cost estimate*



Diemer West Basin, showing equipment to be replaced

Treatment Plant Reliability Program: Weymouth Filter Valve Replacement

This project will replace the existing filter valves and actuators at the Weymouth Water Treatment Plant to enhance reliability and performance of the filtration process.

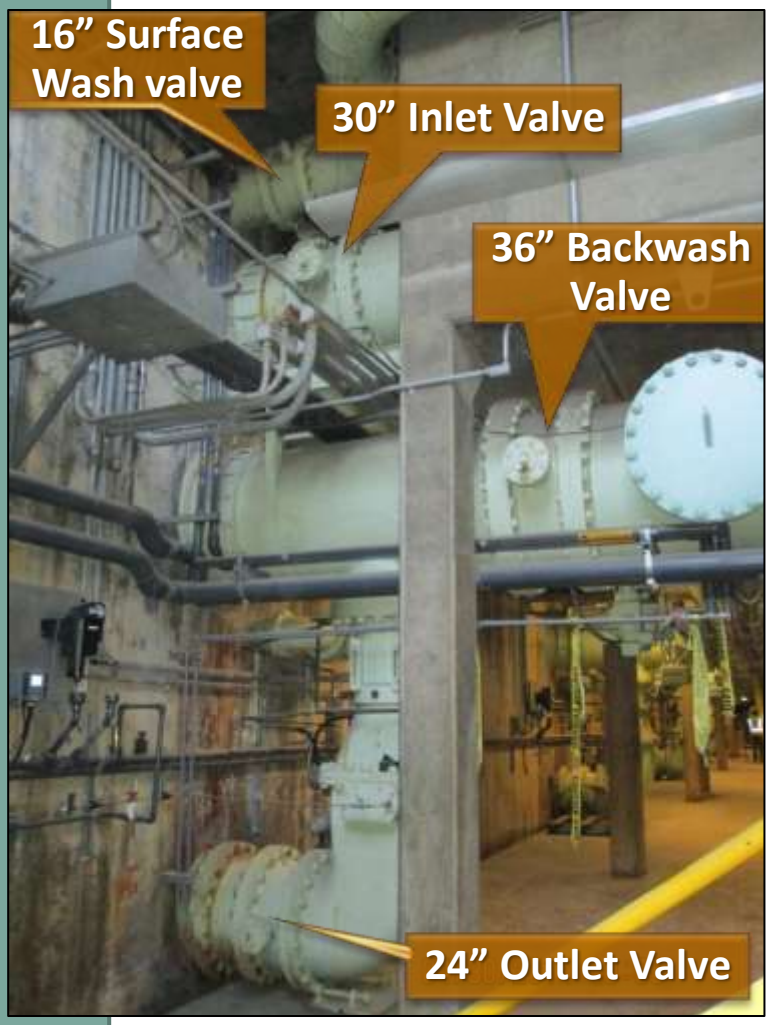
Phase	Final Design/Procurement
% Complete for Current Phase	40% Final Design 15% Procurement
Final Design Authorization Procurement Contract Awarded	May 2014 November 2017
Appropriation Number	15369
Contract Number	1867

Estimated Final Design Completion Date:
December 2020

Estimated Procurement Completion Date:
August 2020

Total Project Estimate:
$24.5 million

Cost to Date: ***$1,870,408***



Weymouth Filter Gallery, showing equipment to be replaced

Water Quality/Oxidation Retrofit Program

Program Information: *The Water Quality/Oxidation Retrofit Program is comprised of 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.*

Planned FY2018/2019 Expenditures (through Decembre 2018)	Actual FY2018/2019 Expenditures (through December 2018)
$2.08 million	$1.15 million

PROGRAM HIGHLIGHTS (2ND QUARTER)

Status

Actual fiscal year expenditures though December 2018 are less than planned due to shifts in timing of the work from the planned expenditures developed for the budget adoption in April 2018. The projects are on budget.

Accomplishments

- The main Weymouth Oxidation Retrofit (ORP) Project construction was completed in May 2017. Other activities have been completed including control system integration, start-up and testing, permitting with State Division of Drinking Water, and preparation of O&M manuals. Record drawings were completed in the 2nd quarter.
- The construction contract for the Weymouth Enhanced Bromate Control Facilities was completed in August 2018 and record drawings are being prepared.

Upcoming Activities

Upcoming work for the next quarter will include:

- ORP Completion Activities – install ozone gas flow meters during upcoming plant shutdown in the third quarter
- Enhanced Bromate Control Facilities – continue with record drawing preparation

Water Quality/Oxidation Retrofit Program:
Weymouth Enhanced Bromate Control Facilities

This project will upgrade ammonia storage and feed system to control bromate formation in support of the new ozone disinfection process at the Weymouth Water Treatment Plant.

Phase	Post-Construction
% Complete for Current Phase	5%
Construction Contract Awarded	August 2015
Appropriation Number	15472
Contract Number	1818

Estimated Post-Construction Completion Date:
September 2019

Total Project Estimate:
$8.8 million

Cost to Date: ***$8,027,437***

Recently upgraded Weymouth Ammonia Storage Tanks and Feed Systems

Estimated Completion Date for ORP Completion Activities: ***December 2019***

Total Project Estimate: ***$162.7 million***

Cost to Date: ***$160,992,426***

Water Quality/Oxidation Retrofit Program: Weymouth Ozonation Facilities and Completion Activities

This project will design and construct facilities that will replace the primary disinfectant to ozone, reduce the formation of chlorinated disinfection by-products, and controlling taste-and-odor causing compounds.

Phase	Post-Construction
% Complete for Current Phase	98%
Funding Authorized	December 2016
Appropriation Number	15392

Weymouth ozone generation building and liquid oxygen tank farm

MINOR CAPITAL PROGRAM

The Minor Capital Projects (Minor Cap) Program is authorized biennially to enable staff to expedite small capital projects. At the commencement of each biennium, the Board appropriates the entire two-year budget for the program. For the past two bienniums, the two-year budgets for the Minor Cap Program have been $8 million and $10 million, respectively. 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. In order to be considered for inclusion in the Minor Cap program, a project must have a planned budget of less than $400,000. The $400,000 project budget cap was established by the June 2018 Board action Item 8-3. Prior to that action, the budget cap for minor cap projects was $250,000. Staff manages these projects so that each project is completed within three years of its initial authorization.

Minor Cap Program Historical Summary

The following table provides the overall status of the Minor Cap appropriations for the fiscal years 2014/15–2015/16 through 2018/19–2019/20

	Fiscal Year		
	2014/15–2015/16	2016/17–2017/18	2018/19–2019/20
Amount Appropriated	$8M	$10M	$10M
Expenditures through December 2018	$6.3M	$5.4M	$214K
Number of Projects Approved	36	46	14
Number of Projects Completed (through December 2018)	20	7	0
Percent of Work Complete	94%	62%	6%
Number of Projects with Durations of Over 3 Years	0	0	0

Through December 2018, 27 of the 96 projects have been completed, and no projects have exceeded three years in duration.

Minor Cap Projects, 2nd Quarter

Authorized: Eight projects were authorized under the Minor Cap Program during the 2nd quarter of fiscal year 2018/19 (October through December):

- CRA Intake Buoy Line Replacement – This project will remove approximately 900 feet of the existing buoy line at the Intake Pumping Plant, which delineates Metropolitan's property lines on Lake Havasu, and will replace them with new materials. The project budget is $296,000.

- Eagle Mountain & Iron Mountain Switch House Door Replacement – This project will address code compliance by replacing 14 existing doors in the upper and lower switch houses at both plants with new steel doors with code-required panic hardware. The project budget is $89,700.
- Garvey Reservoir Sodium Hypochlorite Tank Replacement – This project will replace the 6,400-gallon fiber reinforced plastic tank, used for storage of sodium hypochlorite. The project budget is $366,000.
- Headquarters Electric Vehicle Charging Station Expansion – This project will install new wiring, conduits, and protective bollards, for new electrical vehicle charging station capacity at Metropolitan's headquarters building. The project budget is $155,000.
- Iron Mountain Equipment Parking Canopy – This project will construct a new metal post-supported canopy to protect critical aqueduct maintenance equipment from sunlight exposure. The project budget is $140,600.
- Iron Mountain Control Room Security Upgrades – This project will enhance the plant's physical security controls by installing two doors equipped with card readers and one security camera in the plant's control room, and two cameras in a switch yard. The project budget is $176,800.
- SCADA Network Fiber Optic Switch Replacement – This project will replace 21 existing fiber optic switches of Metropolitan's control system, for which support is no longer provided. The project budget is $349,654.
- Skinner Electrical Equipment Buildings 1 and 2 Roof Replacement – This project will replace the existing build-up roofing system at the Electrical Equipment Bldgs. Nos. 1 & 2 with new Single-Ply membrane roofing. The project budget is $340,000.

Completed Projects

No projects were completed under the Minor Cap Program during the 2nd quarter of fiscal year 2018/19 (October through December)

Cancelled Projects

Two projects were cancelled under the Minor Cap Program during the 2nd quarter of fiscal year 2018/19 (October through December):

- Gene Pumping Facility Asphalt Rehabilitation – This project was originally initiated in the FY 2016/17 – 2017/18 minor cap appropriation, and has been cancelled since the CRA Domestic Water Main Distribution Replacement project addressed the asphalt rehabilitation required.
- Lower Feeder Service Connection CENB-29 Equipment Relocation – This project was originally initiated in the FY 2016/17 – 2017/18 minor cap appropriation, but project costs were determined to exceed the Minor Cap limit of $250,000 due to site location constraints. This project has been cancelled and transferred to Appropriation 15480 – Conveyance and Distribution Rehabilitation for FY 2012/13 through FY 2017/18.

PROJECT ACTIONS

Table 2 lists capital projects authorized by the General Manager during the 2nd quarter through the authority delegated by the Board in October 2018 (Board Letter 8-2, October 9, 2018). The total amount authorized by the General Manager for the current biennium during the 2nd quarter is approximately $109.7 million. In some cases listed below, the Total Amount Authorized may differ from the Amount Authorized for Current Biennium. This occurs when the Total Amount Authorized for the project exceeds the estimated expenditures authorized for the current biennium as the work authorized is scheduled to be completed beyond the current biennium. In these cases, it is anticipated that staff will request sufficient funds to be allocated from the CIP Appropriation for the next biennium to cover the planned remaining future-year costs of the project. When the Amount Authorized for Current Biennium is equal to the Total Amount Authorized, it is anticipated that the authorized work will be completed within the current biennium, unless unforeseen circumstances arise.

Table 2: Capital Projects Funded by the General Manager Authorization

Project Authorized	Activity Authorized	Amount Authorized for Current Biennium*	Total Amount Authorized*
Greg Avenue Pump Station Rehabilitation	Construction	$240,000	$240,000
Second Lower Feeder PCCP Rehabilitation – Reach 4	Construction	$22,600,000	$22,600,000
Second Lower Feeder PCCP Rehabilitation - Valve Procurement	Procurement	$3,814,000	$37,860,000
Orange County Feeder Relining – Reach 2	Construction	$11,200,000	$11,200,000
Electrical Upgrade of 15 Structures Within the Orange County Region	Construction	$3,900,000	$3,900,000
Electrical Upgrades at 290 Structures in the Orange County Region	Preliminary Investigations	$3,010,000	$5,900,000
Headquarters Building Physical Security Improvements	Construction	$670,500	$1,410,000
Headquarters Improvements	Construction	$28,763,000	$63,390,000
Sepulveda Feeder PCCP Urgent Relining	Construction	$3,660,000	$3,660,000
Weymouth Chlorine System Upgrades	Construction	$12,078,056	$13,470,000
CRA Pumping Plant Sump System Rehabilitation	Construction	$19,058,500	$38,000,000
Water Quality Laboratory HVAC Improvements	Final Design	$730,000	$730,000
Total		**$109,724,056**	**$202,360,000**

Note: Minor capital projects are not included in this listing
* Authorized Amount includes each project's remaining budget

Table 3 lists CEQA exemption determinations made by the General Manager during the 2nd quarter. Consistent with CEQA, the Board has delegated this authority to the General Manager in Board letter 8-2, dated October 9, 2018. Adoption of Negative Declarations and Mitigated Negative Declarations, and certification of Environmental Impact Reports will continue to require action by Metropolitan's Board.

Table 3: CEQA Exemption Determinations

Projects
CRA Pumping Plant Sump System Rehabilitation
Headquarters Electric Vehicle Charging Station Expansion
Headquarters Improvements
Headquarters Security Upgrades
Sepulveda Feeder PCCP Urgent Relining
Skinner Ozone Contactor Concrete Rehabilitation

CONSTRUCTION AND PROCUREMENT CONTRACTS

The status of all active construction and procurement contracts is summarized in the tables below. The following notes apply:

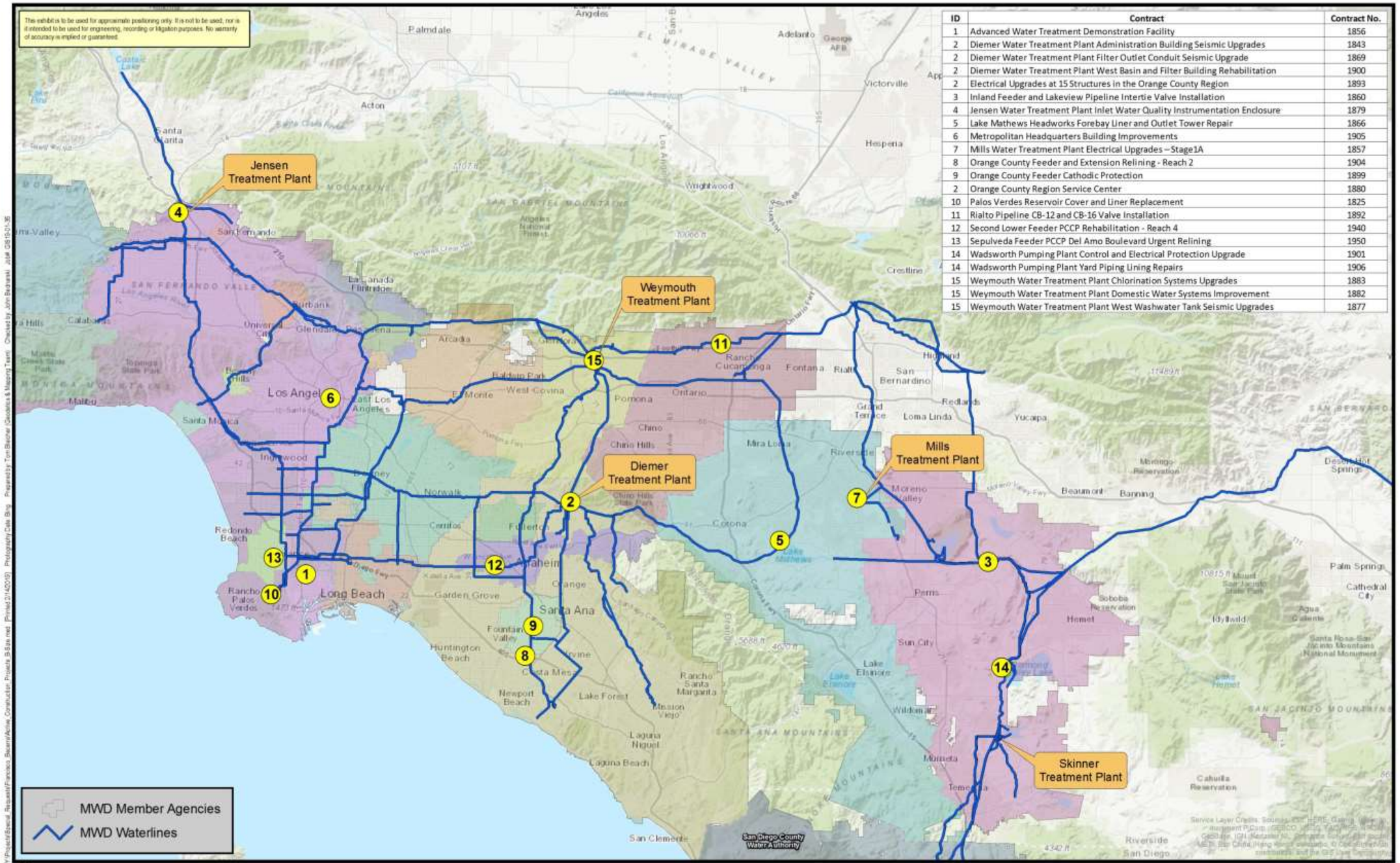
Notes:

1. Contract earnings reflected in this report represent the value of the work performed by the contractor by the 25th day of the month. Contract earnings include contract retention and other similar deductions for the amounts earned by the contractor but otherwise required to be withheld by Metropolitan by law or by contract.
2. Contract payments are typically made by Metropolitan in the month following performance of the work.
3. For the reasons listed above in Notes 1 and 2, contract payments in Metropolitan's financial system will be less than the earnings shown below until the final payment has been made to the contractor.

Table 4: Summary of Construction and Procurement Contracts during 2nd Quarter (October through December 2018)

Summary	Construction	Procurement
Number of Active Contracts	33	17
Total Amount of Active Contracts	$251,167,093	$60,021,970
Number of Contracts Completed this Quarter	6	0
Number of Contracts Awarded this Quarter	9	2
Total Amount of Contracts Awarded this Quarter	$147,909,140	$27,282,760
Contract Earnings this Quarter	$14,811,623	$1,321,958

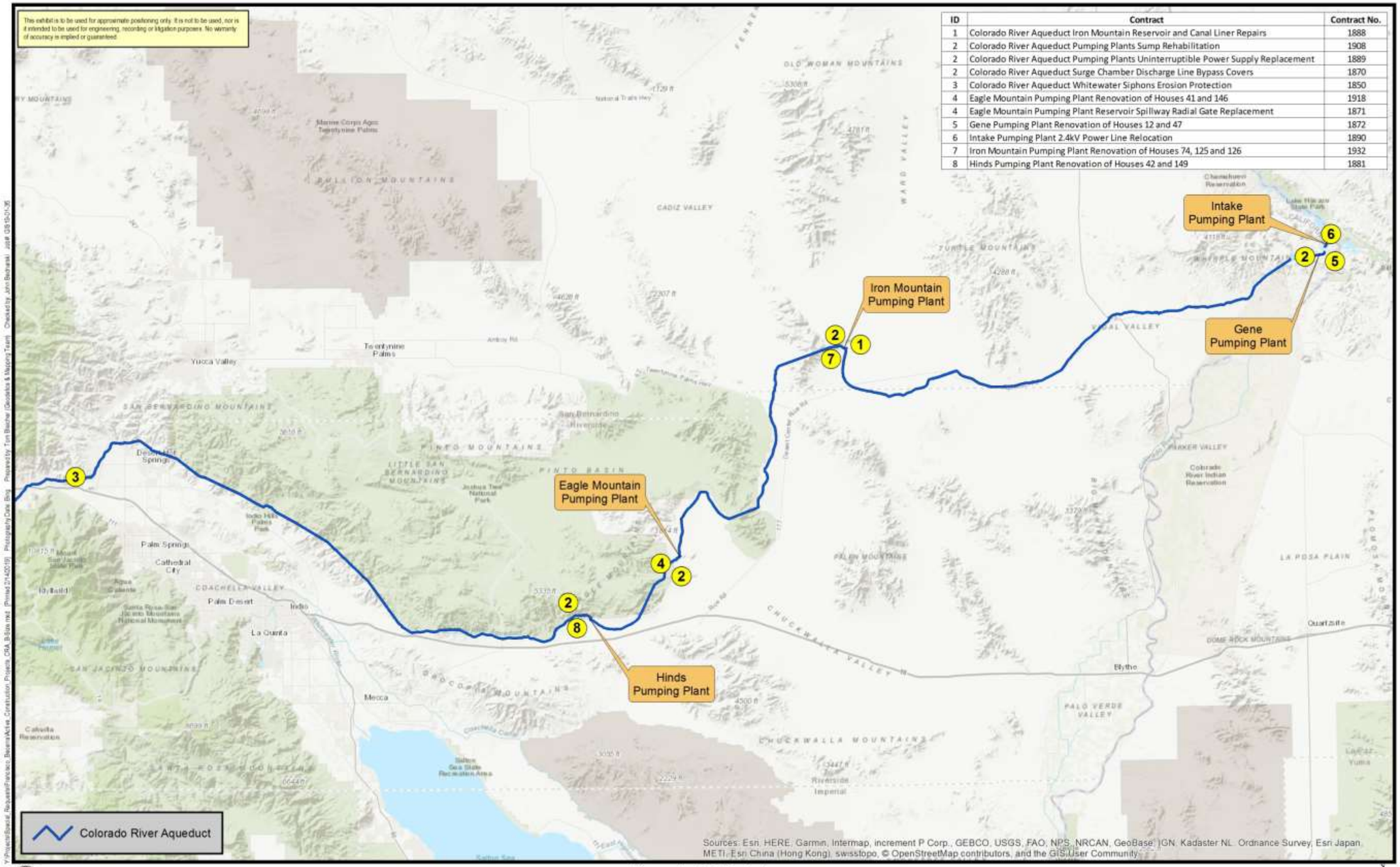
Locations of active and recently completed construction contracts are shown on Figure 5 and Figure 6 on the next two pages.



ID	Contract	Contract No.
1	Advanced Water Treatment Demonstration Facility	1856
2	Diemer Water Treatment Plant Administration Building Seismic Upgrades	1843
2	Diemer Water Treatment Plant Filter Outlet Conduit Seismic Upgrade	1869
2	Diemer Water Treatment Plant West Basin and Filter Building Rehabilitation	1900
2	Electrical Upgrades at 15 Structures in the Orange County Region	1893
3	Inland Feeder and Lakeview Pipeline Intertie Valve Installation	1860
4	Jensen Water Treatment Plant Inlet Water Quality Instrumentation Enclosure	1879
5	Lake Mathews Headworks Forebay Liner and Outlet Tower Repair	1866
6	Metropolitan Headquarters Building Improvements	1905
7	Mills Water Treatment Plant Electrical Upgrades – Stage1A	1857
8	Orange County Feeder and Extension Relining - Reach 2	1904
9	Orange County Feeder Cathodic Protection	1899
2	Orange County Region Service Center	1880
10	Palos Verdes Reservoir Cover and Liner Replacement	1825
11	Rialto Pipeline CB-12 and CB-16 Valve Installation	1892
12	Second Lower Feeder PCCP Rehabilitation - Reach 4	1940
13	Sepulveda Feeder PCCP Del Amo Boulevard Urgent Relining	1950
14	Wadsworth Pumping Plant Control and Electrical Protection Upgrade	1901
14	Wadsworth Pumping Plant Yard Piping Lining Repairs	1906
15	Weymouth Water Treatment Plant Chlorination Systems Upgrades	1883
15	Weymouth Water Treatment Plant Domestic Water Systems Improvement	1882
15	Weymouth Water Treatment Plant West Washwater Tank Seismic Upgrades	1877

The Metropolitan Water District of Southern California
Engineering Services Group

Figure 5: CIP Projects
Construction Contracts - Greater Los Angeles Region



ID	Contract	Contract No.
1	Colorado River Aqueduct Iron Mountain Reservoir and Canal Liner Repairs	1888
2	Colorado River Aqueduct Pumping Plants Sump Rehabilitation	1908
2	Colorado River Aqueduct Pumping Plants Uninterruptible Power Supply Replacement	1889
2	Colorado River Aqueduct Surge Chamber Discharge Line Bypass Covers	1870
3	Colorado River Aqueduct Whitewater Siphons Erosion Protection	1850
4	Eagle Mountain Pumping Plant Renovation of Houses 41 and 146	1918
4	Eagle Mountain Pumping Plant Reservoir Spillway Radial Gate Replacement	1871
5	Gene Pumping Plant Renovation of Houses 12 and 47	1872
6	Intake Pumping Plant 2.4kV Power Line Relocation	1890
7	Iron Mountain Pumping Plant Renovation of Houses 74, 125 and 126	1932
8	Hinds Pumping Plant Renovation of Houses 42 and 149	1881

The Metropolitan Water District of Southern California
Engineering Services Group

Figure 6: CIP Projects
Construction Contracts - Colorado River Aqueduct

Table 5: Construction Contracts Awarded This Quarter

Colorado River Aqueduct Iron Mountain Reservoir and Canal Liner Repairs	
Contract Number	1888
Contractor	Bosco Constructors, Inc.
Amount	$4,674,444
CRA Pumping Plants - Sump Rehabilitation	
Contract Number	1908
Contractor	Environmental Construction, Inc.
Amount	$26,900,000
Diemer Water Treatment Plant West Basin and Filter Building Rehabilitation	
Contract Number	1900
Contractor	Michels Corporation dba Michels Pipeline Construction
Amount	$38,539,196
Electrical Upgrades at 15 Structures in the Orange County Region	
Contract Number	1893
Contractor	Minako America Corporation dba Minco Construction
Amount	$2,606,700
F. E. Weymouth Water Treatment Plant Chlorination Systems Upgrades	
Contract Number	1883
Contractor	J. F. Shea Construction, Inc.
Amount	$8,487,170
Metropolitan Headquarters Building Improvements	
Contract Number	1905
Contractor	Bernards Bros. Inc.
Amount	$43,998,000
Orange County Feeder and Extension Relining - Reach 2	
Contract Number	1904
Contractor	Michels Corporation dba Michels Pipeline Construction
Amount	$6,967,500
Second Lower Feeder PCCP Rehabilitation - Reach 4	
Contract Number	1940
Contractor	J. F. Shea Construction, Inc.
Amount	$14,536,130

Sepulveda Feeder PCCP Del Amo Boulevard Urgent Relining	
Contract Number	1950
Contractor	J. F. Shea Construction, Inc.
Amount	$1,200,000

Table 6: Procurement Contracts Awarded This Quarter

Refurbishing Valve Actuators for the Diemer Water Treatment Plant	
Contract Number	1948
Contractor	Flowserve Corporation
Amount	$3,532,700
Furnishing Large-Diameter Conical Plug Valves	
Contract Number	1912
Contractor	Ebara Corporation
Amount	$23,750,060

Table 7: Contracts Completed This Quarter

Contract	Completion Date
Colorado River Aqueduct Whitewater Siphons Erosion Protection	November 2018
Eagle Mountain Pumping Plant Renovation of Houses 41 and 146	November 2018
Gene Pumping Plant Renovation of Houses 12 and 47	December 2018
Inland Feeder and Lakeview Pipeline Intertie Valve Installation	October 2018
Julian Hinds Pumping Plant Renovation of Houses 42 and 149	December 2018
Robert B. Diemer Water Treatment Plant Administration Building Seismic Upgrades	December 2018

Table 8: Active Construction Contracts at the End of 2nd Quarter

Contract Title & No.	Contractor	Contract Amount*	Earnings to Date	Start Date	Estimated Completion Date	Estimated Percent Complete
Advanced Water Treatment Demonstration Facility; 1856	Kiewit Infrastructure West Co.	$14,021,200	$13,056,600	8/16/17	1/19	93%
Colorado River Aqueduct Iron Mountain Reservoir and Canal Liner Repairs; 1888	Bosco Constructors, Inc.	$4,674,444	$90,000	11/7/18	6/19	2%
Colorado River Aqueduct Pumping Plants Uninterruptible Power Supply Replacement; 1889	CSI Electrical Contractors, Inc.	$939,000	$28,290	6/18/18	10/19	3%
Colorado River Aqueduct Surge Chamber Discharge Line Bypass Covers; 1870	Abhe & Svoboda, Inc.	$2,560,232	$498,066	1/25/18	4/19	19%
CRA Pumping Plants - Sump Rehabilitation; 1908	Michels Corporation dba Michels Pipeline Construction	$26,900,000	$0	1/24/19	3/22	0%
Diemer Plant Filter Outlet Conduit Seismic Upgrade; 1869	Kaveh Construction, Inc.	$4,394,400	$4,216,850	1/25/18	7/19	96%
Diemer Water Treatment Plant West Basin and Filter Building Rehabilitation;1900	Environmental Construction, Inc.	$38,539,196	$2,001,750	11/13/18	11/20	5%
Eagle Mountain Pumping Plant Reservoir Spillway Radial Gate Replacement; 1871	Lasater Construction Co.	$1,433,000	$785,731	1/25/18	1/18	55%
Electrical Upgrades at 15 Structures in the Orange County Region; 1893	Minako America Corporation dba Minco Construction	$2,606,700	$0	12/14/18	1/20	0%
F. E. Weymouth Water Treatment Plant - West Washwater Tank Seismic Upgrades; 1877	Canyon Springs Enterprises dba RSH Construction	$2,591,576	$877,854	3/21/18	5/19	34%

* The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

Contract Title & No.	Contractor	Contract Amount*	Earnings to Date	Start Date	Estimated Completion Date	Estimated Percent Complete
F. E. Weymouth Water Treatment Plant Chlorination Systems Upgrades; 1883	J. F. Shea Construction, Inc.	$8,487,170	$0	1/28/19	1/21	0%
Intake Pumping Plant 2.4kV Power Line Relocation; 1890	Henkels & McCoy, Inc.	$5,553,669	$413,500	7/11/18	7/19	7%
Iron Mountain Pumping Plant Renovation of Houses 74, 125, and 126; 1932	Shipley Construction and Plumbing	$619,000	$206,250	10/18/18	4/19	33%
Joseph Jensen Water Treatment Plant Inlet Water Quality Instrumentation Enclosure; 1879	Unispec Construction, Inc.	$988,725	$397,825	3/23/18	3/19	40%
Lake Mathews Headworks Forebay Liner and Outlet Tower Repair; 1866	J.F. Shea Construction, Inc.	$3,248,000	$3,235,983	12/7/17	1/19	99%
Metropolitan Headquarters Building Improvements; 1905	Bernards Bros. Inc.	$43,998,000	$0	1/14/19	1/22	0%
Mills Electrical Upgrades – Stage1A; 1857	Stronghold Engineering Incorporated	$3,097,927	$1,366,683	9/11/17	5/19	44%
Orange County Feeder and Extension Relining - Reach 2; 1904	Michels Corporation dba Michels Pipeline Construction	$6,967,500	$0	12/7/18	9/19	0%
Orange County Feeder Cathodic Protection; 1899	American Construction and Supply, Inc.	$556,000	$0	10/18/18	7/19	0%
Orange County Region Service Center; 1880	R.I.C Construction Co.	$9,257,483	$2,655,932	4/17/18	9/19	29%
Palos Verdes Reservoir Cover and Liner Replacement; 1825	OHL, USA, Inc.	$31,504,011	$30,050,890	12/21/15	2/19	95%
Rialto Pipeline CB-12 and CB-16 Valve Installation; 1892	J.F. Shea Construction, Inc.	$866,600	$667,745	10/15/18	7/19	77%

* The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

Contract Title & No.	Contractor	Contract Amount*	Earnings to Date	Start Date	Estimated Completion Date	Estimated Percent Complete
Second Lower Feeder PCCP Rehabilitation - Reach 4; 1940	J. F. Shea Construction, Inc.	$14,536,130	$150,000	11/29/18	10/19	1%
Sepulveda Feeder PCCP Del Amo Boulevard Urgent Relining; 1950	J. F. Shea Construction, Inc.	$1,200,000	$24,000	12/13/18	2/19	2%
Wadsworth Pumping Plant Control and Electrical Protection Upgrade; 1901	Southern Contracting Co.	$411,533	$0	10/1/18	3/19	0%
Wadsworth Pumping Plant Yard Piping Lining Repairs; 1906	Kiewit Infrastructure West Co.	$5,416,000	$1,129,902	9/17/18	3/19	21%
Weymouth Plant Domestic Water Systems Improvement; 1882	Mladen Buntich Construction Company, Inc.	$3,740,000	$203,978	6/4/18	2/20	5%

* The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

Table 9: Active Procurement Contracts

Contract Title & No.	Contractor	Contract Amount*	Earnings to Date	Start Date	Estimated Completion Date	Estimated Percent Complete**
Colorado River Aqueduct-Furnishing Spillway Gate for Eagle Mountain Pumping Plant; 1831	Whipps, Inc.	$204,188	$196,268	3/17/16	8/17	96%
Furnishing Butterfly Valves for the Rialto Pipeline Service Connections; 1840	Autrans Corporation	$610,925	$602,250	9/14/16	1/18	99%

* The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

** Estimated Percent Complete is based on contract payments and may not reflect actual progress of fabrication. The contract will be 100% complete upon delivery of fabricated items.

Contract Title & No.	Contractor	Contract Amount*	Earnings to Date	Start Date	Estimated Completion Date	Estimated Percent Complete**
Furnishing Butterfly Valves for the Weymouth Water Treatment Plant - Schedule 1; 1867	Crispin Valve LLC	$4,866,067	$0	12/18/17	4/20	0%
Furnishing Butterfly Valves for the Weymouth Water Treatment Plant - Schedule 2; 1868	DeZurick, Inc.	$771,984	$0	12/18/17	4/20	0%
Furnishing Discharge Line Couplings for Delivery Line No. 1 at Gene Pumping Plant; 1852	Northwest Pipe Company	$218,780	$206,802	5/15/17	12/17	95%
Furnishing Fixed Cone Valves for Copper Basin and Gene Wash Reservoirs; 1846	Integrated 8A Solutions, Inc.	$599,730	$0	2/6/17	1/19	0%
Furnishing Horizontal Axially Split Centrifugal Pumps for the Greg Avenue Pump Station; 1851	Xylem Water Solutions U.S.A., Inc.	$1,492,290	$178,182	5/16/17	12/19	12%
Furnishing Large-Diameter Conical Plug Valves; 1912	Ebara Corporation	$23,750,060	$0	12/24/18	6/23	0%
Furnishing Lubricated Plug Valves for Second Lower Feeder; 1861	Southwest Valve & Equipment, Inc.	$2,364,724	$118,148	9/11/17	8/19	5%
Furnishing Lubricated Plug Valves for the Orange County Feeder; 1863	Southwest Valve & Equipment, Inc.	$556,944	$156,130	10/9/17	1/19	28%
Furnishing One Double Column Vertical Machining Center for the La Verne Maintenance Shops; 1922	Gosiger Machine Tools, LLC (Gosiger West)	$2,169,716	$0	9/17/18	1/20	0%

* The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

** Estimated Percent Complete is based on contract payments and may not reflect actual progress of fabrication. The contract will be 100% complete upon delivery of fabricated items.

Contract Title & No.	Contractor	Contract Amount*	Earnings to Date	Start Date	Estimated Completion Date	Estimated Percent Complete**
Furnishing One Hydraulic Press Brake for the La Verne Maintenance Shops; 1875	North South Machinery	$332,939	$32,425	2/6/18	1/19	10%
Furnishing One Hydraulic Shear System for the La Verne Maintenance Shops; 1873	Landmark Solutions, LLC	$146,925	$0	3/21/18	12/18	0%
Furnishing One Waterjet Cutting System for the La Verne Maintenance Shops; 1874	Flow International Corp.	$374,359	$35,716	3/8/18	1/19	10%
Furnishing Steel Pipe for the Second Lower Feeder PCCP Rehabilitation - Reaches 2 and 4; 1925	Ameron Water Transmission Group, LLC	$12,068,635	$0	2/6/18	6/20	0%
Furnishing Valve Actuators for the Diemer Water Treatment Plant; 1865	Flowserve Corporation	$5,961,003	$4,534,564	10/16/16	7/18	76%
Refurbishing Valve Actuators for the Diemer Water Treatment Plant; 1948	Flowserve Limitorque	$3,532,700	$0	Anticipated to start mid-February	3/21	0%

* The Contract Amount may differ from the original bid amount due to periodic change orders approved by the General Manager or, if required, by the Board.

** Estimated Percent Complete is based on contract payments and may not reflect actual progress of fabrication. The contract will be 100% complete upon delivery of fabricated items.

PERFORMANCE METRICS

In order to measure project performance efficiency and to identify areas for continuous improvements, Metropolitan's Engineering Services Group has established two primary performance metrics for projects that will result in construction activities. These metrics established performance targets for Metropolitan staff for both final design and inspection activities. Separate performance targets have been established for two categories of project sizes; those with projected construction costs less than $3 million, and those with projected construction costs greater than $3 million. Metropolitan's performance metric targets for the two categories of construction projects are listed below:

Project Category	Final Design, % of Construction	Inspection % of Construction
Projects with Construction Costs < $3 Million	9% to 15%	9% to 15%
Projects with Construction Costs > $3 Million	9% to 12%	9% to 12%

Prior to proceeding with final design or construction, budgets are established for design and inspection that best provide a quality and timely product. Efforts are made to optimize staff and consultant hours based on project complexity and location. The calculated values for the design and inspection costs, as a percentage of total construction costs, become the project-specific metric goals, and in almost all cases lie within or below the metric target ranges. In rare cases, metric goals may be established which exceed the metric target ranges. In these cases, explanations for the variance are provided. For this reporting period, no metric goals exceeded the metric target ranges. Table 10 and Table 11 below summarize the performance metric goals that were established for projects that were authorized to proceed with final design and construction in the current reporting period under each project category.

Table 10: Performance Metrics, Projects < $3 Million

Projects	Metric	Est. Cost	Est. Construction Cost	Goal %
Electrical Upgrades at 15 Structures in the Orange County Region (Stage 1)	Inspection	$425,000	$2,858,700	14.9%
Lake Mathews Sodium Hypochlorite Tank Replacement	Final Design	$110,000	$900,000	12.2%
Sepulveda Feeder PCCP Del Amo Blvd. Urgent Relining	Inspection	$285,000	$2,300,000	12.4%
Sepulveda Feeder/East Valley Feeder Interconnection Electrical Upgrades	Final Design	$282,400	$1,900,000	14.9%

Table 11: Performance Metrics, Projects > $3 Million

Projects	Metric	Est. Cost	Est. Construction Cost	Goal %
Circulating Water & Sump Discharge Piping Systems Rehabilitation	Inspection	$3,474,000	$28,830,000	12.0%
CRA & Iron Mountain Reservoir Panel Repairs	Inspection	$607,000	$5,059,444	12.0%
Diemer West Basin & Filter Rehabilitation	Inspection	$5,364,000	$48,046,445	11.2%
Headquarters Improvements	Inspection	$5,625,000	$46,881,000	12.0%
La Verne Water Quality Laboratory and Field Engineering Building Seismic Upgrades and Building Improvements	Final Design	$2,078,000	$18,510,000	11.2%
MWD HQ Boardroom Technology Upgrade	Final Design	$685,000	$6,000,000	11.4%
Orange County Feeder Lining Repair	Inspection	$990,000	$8,347,500	11.9%
Second Lower Feeder PCCP Rehabilitation - Reach 4	Inspection	$1,932,000	$20,980,000	9.2%
Weymouth Chlorination System Upgrades	Inspection	$1,108,000	$10,294,170	10.8%

Once a project phase is complete, either final design or construction, staff's performance against these metrics is then calculated and compared to the original goal. Table 12 and Table 13 below summarize the comparison between the original goal and the actual performance metrics for each project category for the current reporting period. In some cases, the actual performance metric at the completion of the phase may exceed the original performance metric goal but not the overall target. For the cases where the actual metrics exceeded the targets listed at the beginning of this section, a brief explanation as to the reason for this occurrence is provided below Table 13.

Table 12: Actuals, Projects < $3 Million

Projects	Metric	Cost	Construction Cost	Goal %	Actual %
Diemer Water Sampling System Improvements	Final Design	$518,227	$2,844,000	14.6%	18.2%
Electrical Upgrades at 15 Structures in the Orange County Region (Stage 1)	Final Design	$257,856	$2,858,700	14.7%	9.0%
Inland Feeder and Lakeview Pipeline Intertie (Valve Installation)	Inspection	$293,398	$1,979,929	14.8%	14.8%

Table 13: Actuals, Projects > $3 Million

Projects	Metric	Cost	Construction Cost	Goal %	Actual %
Circulating Water & Sump Discharge Piping Systems Rehabilitation	Final Design	$2,766,000	$28,830,000	12%	9.6%
CRA & Iron Mountain Reservoir Panel Repairs	Final Design	$169,000	$5,059,444	11.9%	3.3%
Diemer Administration Building Seismic Upgrades	Inspection	$693,583	$6,203,746	12.0%	11.2%
Diemer Filter Valve Actuator Refurbishment	Final Design	$58,967	$3,682,700	5.4%	1.6%
Diemer West Basin & Filter Rehabilitation	Final Design	$2,582,649	$48,046,445	6.8%	5.4%
Headquarters Improvements	Final Design	$4,454,397	$46,881,000	11.6%	9.5%
Orange County Feeder Lining Repair	Final Design	$950,000	$8,347,500	10.8%	11.4%
Second Lower Feeder PCCP Rehabilitation - Reach 4	Final Design	$894,000	$14,540,000	13.3%	6.1%
Weymouth Chlorination System Upgrades	Final Design	$1,392,000	$10,294,170	13.8%	13.5%
Weymouth Hypochlorite Feed Facilities	Inspection	$1,006,685	$6,682,102	12.0%	15.1%
Whitewater Siphons Erosion Protection	Inspection	$138,180	$5,285,000	9.5%	2.6%

The following projects from Tables 12 and Table 13 have exceeded the metric target and explanations for the variance are provided below.

- Diemer Water Sampling System – The cost of final design exceeded the original metric goal due to the additional coordination and investigation that were required to develop a design to re-pipe and rewire water quality sampling and water compliance instrumentation without impacting plant operation.
- Weymouth Chlorination System Upgrades – Due to the complexity of this project to plan and design the work to implement chlorination system upgrades while maintaining safe and effective chlorine feed capability, the original metric goal for final design was established to be higher than the typical range. The cost of the final design effort was less than the originally planned metric.
- Weymouth Hypochlorite Feed Facilities – The cost of inspection exceeded the goal due to the extended construction duration and the need for extensive coordination with Weymouth ORP start-up activities.

SERVICE CONNECTIONS AND RELOCATIONS

Service Connections

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

Relocations

One new relocation agreement involving an amount in excess of $100,000 was approved under the authority of Section 8122(c).

Utility Agreement No. 24576

Agency: San Bernardino County Transportation Authority

Description: The San Bernardino County Transportation Authority is constructing improvements to the Interstate 10/15 Interchange requiring protection and modification to Metropolitan's Upper Feeder.

Estimated Amount: $166,000

PROGRAM/APPROPRIATION STATUS

Capital Program/Appropriation Summary

The following table provides the program and appropriation level budget verses cost-to-date and fiscal year 2018/19 planned expenditures verses actuals-to-date.

Table 14: Program and Appropriation Budget vs. Cost and Planned Expenditures vs Actuals

Capital Programs/Appropriations	Appn. No.	Total to Date		Fiscal Year to Date	
		Appn. Amount ($1,000's)	Costs thru December 2018 ($1,000's)	FY 2018/19 Planned Expenditures ($1,000's)	FY 2018/19 Actual Expenditures ($1,000's)
Cost Efficiency & Productivity Program	Total	$179,264	$147,420	$3,261	$1,743
DVL Recreation Facilities	15334	$87,064	$64,021	$198	$29
Power Reliability and Energy Conservation	15391	$54,892	$52,689	$21	$488
Information Technology System - Business, Finance, and HR	15411	$22,468	$21,949	$379	$342
Business Operations Improvement	15484	$6,500	$6,033	$554	$119
Project Controls and Reporting System	15490	$6,440	$2,206	$1,492	$538
Enterprise Content Management	15500	$1,900	$523	$618	$228
Colorado River Aqueduct Reliability Program	Total	$266,272	$228,527	$22,270	$6,984
Cabazon Radial Gate Facility Improvements	15320	$0	$0	$0	$0
White Water Siphon Protection	15341	$10,585	$9,807	$2,579	$452
CRA - Conveyance Reliability	15373	$105,428	$102,110	$2,694	$1,132
CRA - Electrical/Power Systems Reliability	15384	$26,565	$23,287	$2,947	$762
CRA - Reliability for FY2006/07 through FY2011/12	15438	$88,534	$78,690	$7,447	$2,208
CRA Main Pump Reliability	15481	$12,090	$4,149	$1,732	$1,053
CRA Reliability for FY2012/13 through FY2017/18	15483	$23,070	$10,483	$4,629	$1,376
CRA Reliability for FY2018/19 through FY2023/24	15507	$0	$0	$242	$0

Capital Programs/Appropriations	Appn. No.	Total to Date		Fiscal Year to Date	
		Appn. Amount ($1,000's)	Costs thru December 2018 ($1,000's)	FY 2018/19 Planned Expenditures ($1,000's)	FY 2018/19 Actual Expenditures ($1,000's)
Distribution System Reliability Program	Total	$365,978	$285,781	$26,566	$21,012
Conveyance and Distribution System - Rehabilitation	15377	$94,646	$80,748	$2,733	$812
Reservoir Cover and Replacement	15417	$49,676	$45,356	$7,959	$7,111
Dam Rehabilitation & Safety Improvements	15419	$10,310	$7,308	$5,389	$907
Conveyance and Distribution System - Rehabilitation for FY2006/07 through FY2011/12	15441	$107,829	$98,906	$1,411	$3,946
Hydroelectric Power Plant Improvements	15458	$17,577	$8,631	$2,379	$1,085
Conveyance and Distribution System - Rehabilitation for FY2012/13 through FY2017/18	15480	$83,080	$43,986	$6,368	$6,304
Pipeline Rehabilitation and Replacement	15482	$0	$0	$0	$0
Conveyance and Distribution System - Rehabilitation for FY2018/19 through FY2023/24	15503	$2,860	$846	$327	$846
Minor Capital Projects Program	Total	$41,500	$23,282	$2,294	$1,704
Capital Program for Projects Costing Less Than $250,000 for FY2010/11	15468	$3,500	$3,002	$0	$29
Capital Program for Projects Costing Less Than $250,000 for FY2012/13 through FY2013/14	15476	$10,000	$8,476	$0	$18
Capital Program for Projects Costing Less Than $250,000 for FY2014/15 through FY2015/16	15489	$8,000	$6,246	$709	$153
Capital Program for Projects Costing Less Than $250,000 for FY2016/17 through FY2017/18	15498	$10,000	$5,344	$1,088	$1,289
Capital Program for Projects Costing Less Than $400,000 for FY2018/19 through FY2019/20	15504	$10,000	$214	$497	$214
Prestressed Concrete Cylinder Pipe Rehabilitation Program	Total	$203,140	$116,371	$16,789	$9,916
Assess Condition Of Metropolitan's Prestressed Concrete Cylinder Pipe	15297	$7,870	$7,736	$0	$62
PCCP Rehabilitation and Replacement	15471	$24,243	$18,592	$970	$507
Sepulveda Feeder PCCP Rehab	15496	$26,310	$15,803	$750	$605
Second Lower Feeder PCCP Rehab	15497	$134,087	$73,630	$12,392	$8,132
Allen-McColloch Pipeline, Calabasas Feeder, and Rialto Pipeline PCCP Rehabilitation	15502	$10,630	$610	$2,677	$610

Capital Programs/Appropriations	Appn. No.	Total to Date		Fiscal Year to Date	
		Appn. Amount ($1,000's)	Costs thru December 2018 ($1,000's)	FY 2018/19 Planned Expenditures ($1,000's)	FY 2018/19 Actual Expenditures ($1,000's)
Regional Recycled Water Supply Program	Total	$17,000	$14,879	$4,192	$7,153
Demonstration-Scale Recycled Water Treatment Plant	15493	$17,000	$14,879	$4,192	$7,153
Regulatory Compliance Program	Total	$170,234	$167,259	$61	$227
Chlorine Containment and Handling Facilities	15346	$162,370	$159,719	$0	$87
CRA - Discharge Containment	15385	$7,864	$7,540	$61	$140
Right of Way & Infrastructure Protection Program	Total	$23,830	$22,096	$2,738	$488
Right of Way & Infrastructure Protection	15474	$23,830	$22,096	$2,738	$488
System Flexibility/Supply Reliability Program	Total	$650,625	$600,525	$3,232	$3,987
Hayfield and Lake Perris Groundwater Recovery	15402	$29,215	$7,296	$284	$110
Perris Valley Pipeline	15425	$129,100	$126,519	$154	$1,050
Water Delivery System Improvements	15488	$32,310	$30,597	$1,245	$2,144
Verbena Property Acquisition	15492	$264,000	$259,143	$857	$646
Delta Wetlands Properties (Delta Islands)	15494	$196,000	$176,969	$693	$37
System Reliability Program	Total	$205,856	$163,875	$15,014	$13,099
Information Technology System - Infrastructure	15376	$50,321	$44,840	$13	$295
Information Technology System - Security	15378	$7,446	$6,545	$427	$186
La Verne Shop Facilities Upgrade	15395	$45,010	$41,626	$1,182	$442
Water Operation Control	15467	$47,760	$28,794	$5,969	$5,569
Union Station Headquarters Improvements	15473	$16,920	$12,673	$1,198	$1,693
IT Infrastructure Reliability	15487	$15,790	$12,581	$1,575	$543
Operations Support Facilities Improvement	15495	$16,368	$14,336	$1,131	$3,274
Metropolitan Security System Enhancements	15499	$4,271	$1,838	$652	$505
Infrastructure Reliability Information System	15501	$1,970	$643	$2,113	$592
System-Wide Paving & Roof Replacements for FY 2018/19 through FY 2019/20	18909	$0	$0	$108	$0
Enterprise Data Analytics	18910	$0	$0	$646	$0

Capital Programs/Appropriations	Appn. No.	Total to Date		Fiscal Year to Date	
		Appn. Amount ($1,000's)	Costs thru December 2018 ($1,000's)	FY 2018/19 Planned Expenditures ($1,000's)	FY 2018/19 Actual Expenditures ($1,000's)
Treatment Plant Reliability Program	Total	$846,019	$740,395	$20,430	$18,154
Skinner Water Treatment Plant Improvements	15365	$155,056	$150,951	$0	$108
Weymouth Water Treatment Plant Improvements	15369	$190,910	$177,891	$4,547	$1,308
Jensen Water Treatment Plant Improvements	15371	$47,352	$46,819	$394	$217
Diemer Water Treatment Plant Improvements	15380	$213,657	$161,225	$2,051	$5,553
Mills Water Treatment Plant Improvements	15381	$0	$0	$0	$0
Skinner Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15435	$3,860	$1,679	$89	$69
Diemer Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15436	$70,939	$57,365	$6,481	$4,752
Weymouth Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15440	$17,438	$16,761	$125	$6
Jensen Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15442	$53,476	$50,459	$972	$1,822
Mills Water Treatment Plant Improvements for FY2006/07 through FY2011/12	15452	$20,599	$16,519	$1,289	$1,090
Weymouth Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15477	$58,549	$51,583	$1,810	$1,867
Diemer Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15478	$1,345	$407	$97	$37
Mills Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15479	$3,400	$2,590	$468	$116
Skinner Water Treatment Plant Improvements for FY 2012/13 Through FY 2017/18	15485	$1,990	$1,702	$0	$2
Jensen Water Treatment Plant Improvements for FY2012/13 through FY2017/18	15486	$7,449	$4,443	$827	$1,207
Diemer Water Treatment Plant Improvements for FY2018/19 through FY2023/24	18903	$0	$0	$141	$0
Jensen Water Treatment Plant Improvements for FY2018/19 through FY2023/24	15508	$0	$0	$96	$0
Mills Water Treatment Plant Improvements for FY2018/19 through FY2023/24	18905	$0	$0	$721	$0
Skinner Water Treatment Plant Improvements for FY2018/19 through FY2023/24	18906	$0	$0	$287	$0
Weymouth Water Treatment Plant Improvements for FY2018/19 through FY2023/24	15505	$0	$0	$36	$0

Capital Programs/Appropriations	Appn. No.	Total to Date		Fiscal Year to Date	
		Appn. Amount ($1,000's)	Costs thru December 2018 ($1,000's)	FY 2018/19 Planned Expenditures ($1,000's)	FY 2018/19 Actual Expenditures ($1,000's)
Water Quality/Oxidation Retrofit Program	Total	$877,406	$870,598	$2,077	$1,155
Skinner Filtration Plant, Oxidation Retrofit	15388	$245,492	$244,791	$0	$47
Diemer Water Treatment Plant Oxidation Retrofit	15389	$370,192	$369,875	$651	$70
Weymouth Water Treatment Plant Oxidation Retrofit	15392	$251,482	$247,006	$1,325	$635
Enhanced Bromate Control	15472	$10,240	$8,926	$100	$403
Total CIP		$3,847,124	$3,381,009	$118,926	$85,622

PROJECTS EXPENSED TO OVERHEAD

Engineering Services in conjunction with Finance, Water System Operations, and Information Technology evaluated progress, costs, and future plans for the projects listed below. This assessment determined that no further work on these projects is warranted. All of the listed projects received the necessary Board authorization for various levels of effort conducted. However, no Metropolitan capital asset was ever placed into service. Accrued costs have been expensed as no capital asset will be constructed in the foreseeable future.

All of the funds appropriated to perform the authorized work for these projects will be returned to funds available for appropriation and the affected Appropriations will be reduced accordingly.
(* See exception for DVL Recreation below)

Project	Expensed Amount
Central Pool Augmentation (CPA) Program - Pipeline and Tunnel Alignment	$6,984,181.96
Central Pool Augmentation and Water Quality Program	$4,972,172.43
Central Pool Augmentation and Water Quality Project (Phase 2)	$659,990.44
Central Pool Augmentation Right of Way, Phase 2	$533,815.13
Central Pool Augmentation Treatment Plant	$264,443.46
CEQA and Entitlement - Solar Power Facilities*	$440,019.43
Chino Basin GWS Program Expansion - IEUA Preliminary Engineering & Environmental Documentation	$1,185,546.55
CRA Quagga Mussel Structural and Chemical Barriers	$182,268.38
Desalination Demo. Plant	$5,866,100.45
Diemer Power Feeder Relocation Study	$19,441.64
DVL East Recreation Area Geotechnical Investigation*	$547,343.18
DVL Recreation Program, East Recreational Lake Technical Assessment*	$399,047.20
DVL Valley - Wide Site Rough Grading*	$4,349,656.96
Greg Avenue Hydroelectric Plant Seismic Assessment	$149,063.68
Hydroelectric Plants Fire Alarm System Installation	$689,591.33
Live Oak Reservoir Surface Repair Recommendations	$440,914.07

* DVL Recreation Appropriation 15334 will only be reduced by the amount spent.

Project	Expensed Amount
Mills Chemical System Capacity Upgrades	$3,326,536.48
Mills Improvements Program, Upgrade of Control Valves	$22,603.60
Mills Improvements Program, Washwater Chemical Feed and Storage Study	$17,915.26
Mills Modules 1 and 2 Rehabilitation	$3,470,838.66
Mills Ozone System Reliability Upgrade - Final Design	$1,396,406.14
Mills Ozone System Reliability Upgrade Equipment Procurement	$3,522,630.85
Mills Plant - Post-Filter Disinfection System	$331,745.35
Mills Plant Laboratory Upgrades	$251,109.99
Mills Sample Pump Automation	$310.48
Mills Solids Handling System	$1,526,059.38
Orange County Reservoir Floating Cover Replacement	$ 877,760.94
Quagga Mussel Program Phase II - Study and Preliminary Design Report	$12,398.87
Raymond Basin Conjunctive Use Program, East Valley Feeder Extension	$209,904.09
Raymond Basin GWS Program - City of Pasadena Preliminary Engineering & Environmental Documentation	$ 481,103.65
Riverside Treatment Plant Land Acquisition	$115,209.54
San Diego Pipeline 6 - Pressure Control Structure/Hydroelectric Plant - Feasibility Study	$90,878.44
San Diego Pipeline No. 6 - Operations Scoping Study	$226,507.09
San Diego Pipeline No.6 - South Reach/Tunnel Alignment Analysis	$169,245.66
Seawater Desalination Demo Project, Miscellaneous Desalination Work Activities	$40,272.39
Seawater Desalination Demo Project, Project Sponsor & Final Design Activities	$1,913,100.41
Seawater Desalination Demo Project, Test Unit Operations	$ 622,249.95
Seawater Desalination Demonstration Plant Action Plan	$358,578.39
Seawater Desalination Demonstration Project, Design and Marketing Agreement	$3,923,986.57
Seawater Desalination, Site-Specific Activities	$198,527.37

Project	Expensed Amount
Second Lower Cross Feeder	$2,865,708.86
Semitropic Water Storage District - Water Recovery Demonstration Project	$54,046.91
Skinner Solids Removal Automation	$126.37
San Diego Pipeline No. 6 South Reach Feasibility Study	$6,027,483.30
Second Lower Cross Feeder Valve Procurement	$30,487.99