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# WATER SYSTEM OPERATIONS

Water System Operations (WSO) group reliably treats and delivers high-quality water to Metropolitan's member agencies in an efficient, sustainable, and environmentally responsible manner.

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## PROGRAMS

Water Systems Operations treats and delivers water from the Colorado River and the State Water Project (SWP) through a raw water conveyance system, five treatment plants, and an extensive treated water distribution network. Water quality is paramount and all functions focus on producing and maintaining water that meets or exceeds drinking water standards.

WSO accomplishes its mission through the following programs or sections:

**Office of Manager** provides day-to-day operational management as well as strategic and organizational leadership, directing all initiatives and core business efforts of WSO. The office also provides support functions such as budget, administration, and security. Additionally, the Security Team ensures that Metropolitan's employees, water infrastructure, and equipment are adequately protected.

**Operations Support Services** provides a diverse range of support to Metropolitan's core operational reliability functions and, on a reimbursable basis, to public entities such as DWR and member agencies. The Manufacturing unit performs fabrication, machining, coating, valve and pump testing, equipment refurbishment, underwater maintenance, diving inspections, and crane safety and certification. Construction Services unit performs general construction, large equipment transportation, equipment installation, and emergency response. The Fleet Services unit handles vehicle acquisition, maintenance, and specialized vehicle services. The Power &

Equipment Reliability unit provides maintenance services which include: predictive, preventive, and corrective maintenance analysis for critical equipment, including all hydroelectric power plants, pressure control structures, high voltage equipment, and heating, ventilation, and air conditioning (HVAC) systems. Additionally, the section responds to Member Agency's service connection requests.

**Water Treatment** operates and maintains five water treatment plants with a combined capacity of over 2.6 billion gallons per day. The section oversees treatment processes to ensure high-quality water is reliably produced that complies with or surpasses all primary drinking water quality regulations. All five treatment facilities are staffed and operated 24 hours a day, seven days a week. The Weymouth plant uses chlorine as their primary disinfect while the other four treatment plants (Jensen, Mills, Skinner and Diemer) have been retrofitted with ozone disinfection. Construction is underway at the Weymouth water treatment plant to complete the ozone retrofit program.

**Water Conveyance and Distribution** meets delivery requirements of member agencies by moving water throughout Metropolitan's 5,200 square mile service area and performing a wide range of operations and maintenance activities to ensure system reliability. The conveyance system consists primarily of the Colorado River Aqueduct system and five pumping plants. The distribution system consists of about 820 miles of pipelines, approximately 350 service connections to member agencies, 16 hydroelectric plants,

including the DVL pumping plant, and 9 storage and regulatory reservoirs that help Metropolitan meet peak flow periods.

**Water Quality** ensures that Metropolitan provides safe water that meets or exceeds regulatory standards through the following activities: conducting chemical and biological analyses; optimizing existing treatment processes; testing new technologies to assure compliance with ending and future regulations; and providing technical expertise, laboratory services, and troubleshooting of water quality issues for Metropolitan and its member agencies.

**Water Operations and Planning** plans and implements the movement and use of water resources. These plans incorporate infrastructure and supply limitations, agency demands, changing water quality requirements, and storage program economics. Operational scenarios that encompass a broad range of potential supplies and demands are developed and refined on a weekly basis throughout the year. This process prepares WSO for a wide variety of possible outcomes as the year develops while maintaining reliable deliveries and balancing water storage reserves at reasonable cost.

In addition, the section is responsible for programming and software and hardware support for Metropolitan’s control system, known as Supervisory Control and Data Acquisition (SCADA) and is also responsible for emergency response management and providing emergency response training to employees.

**Safety and Environmental Services** is responsible for ensuring a safe working environment for employees through programs and training, ensuring business operations are conducted in an environmentally responsible way, and complying with all environmental and occupational health and safety rules and regulations. The section provides responsive leadership to integrate effective environmental, health and safety practices into Metropolitan’s operations and culture. The goal is to achieve a safe work place and minimize the number and extent of environmental incidents.

In addition, the section provides environmental and occupational health and safety program expertise through program and policy development, training curriculum, monitoring, planning, and coordination with regulatory agencies to respond to present and future needs. The Environmental, Health, and Safety Site Support teams provide local expertise and services at all facilities.

**Power Operations and Planning** plans, acquires and accounts for the energy required to operate the Colorado River Aqueduct (CRA). This activity requires daily energy transactions for future needs with regional and national electric utilities and marketers. The section also negotiates and manages the contracts and energy accounting of Renewable Energy Credits and Greenhouse Gas Allowances for 16 small hydroelectric power plants and the CRA. The above responsibilities account for \$50-100 million of costs and revenues annually (budgeted separately).

In addition, the section is generally responsible for most wholesale energy activities including evaluation of proposed energy-related regulations and legislation; analysis of state and regional transmission plans and impacts to the CRA transmission system; and reporting on compliance with regional and national electric reliability standards.

Finally, the section works closely with energy staff at DWR on energy and transmission issues for the SWP.



## GOALS AND OBJECTIVES

In FY 2014/15 and FY 2015/16, WSO will focus on the following key issues:

### Infrastructure Reliability

Meet regional water demands by ensuring capability to deliver water from the SWP, Metropolitan's facilities, and groundwater storage programs.

Effectively plan and schedule imported deliveries on the SWP and CRA to meet demands, storage objectives, and water quality goals.

Maintain eight-pump flow readiness on the CRA and manage storage accounts to capture all available supplies for a potentially critically dry 2014 water year.

Plan, schedule, and execute the Annual Shutdown Plan to ensure reliable operation of the water delivery system, including a strategy to manage longer shutdowns to support increased refurbishment and replacement projects.

Support SWP reliability by contracting with DWR for up to \$5 million of reimbursable maintenance, engineering, and water quality services.

Improve training, maintenance, testing, and control systems to eliminate failures of the stationary emergency generators at critical facilities.

Maintain 100 percent compliance with the Transportation Security Administration's regulations governing chemical security deliveries and handling.

Continue to provide access control, surveillance, uninterrupted intrusion alarm, and incident monitoring and response for all critical infrastructure sites around the clock.

Obtain compensation or other accommodation for the cost of compliance with the California Greenhouse Gas Emission Cap-and-Trade Program.

### Energy Management

Develop a strategy to secure a new agreement for the coordinated electrical operations of the Colorado River Aqueduct when the Edison Service and Interchange Agreement expires in 2017.

Maximize run-time for hydroelectric plants to optimize power generation

### Workforce Development & Succession Planning

Develop and implement a manager succession plan in coordination with Human Resources to maintain managerial capacity for workforce turnover expected within the next five years.

Add new apprentice class in FY 2015/16.

Implement management development initiative to train, develop, and encourage employees to become effective supervisors.

### Water Quality, Environmental Protection, and Safety

Meet or surpass regulatory requirements for drinking water quality and ensure delivery of aesthetically pleasing water.

Continue to track and review regulatory developments for existing and emerging water quality constituents.

Continue to participate in stakeholder forums to ensure successful remediation of chromium 6 at PG&E's Topock gas compressor site.

Continue salinity management studies with the U.S. Bureau of Reclamation and Southern California Salinity Coalition to quantify and manage the effects of salinity.

Continue to monitor remedial efforts at the uranium mill tailings pile near Moab, Utah and advocate for additional funding to accelerate the cleanup.

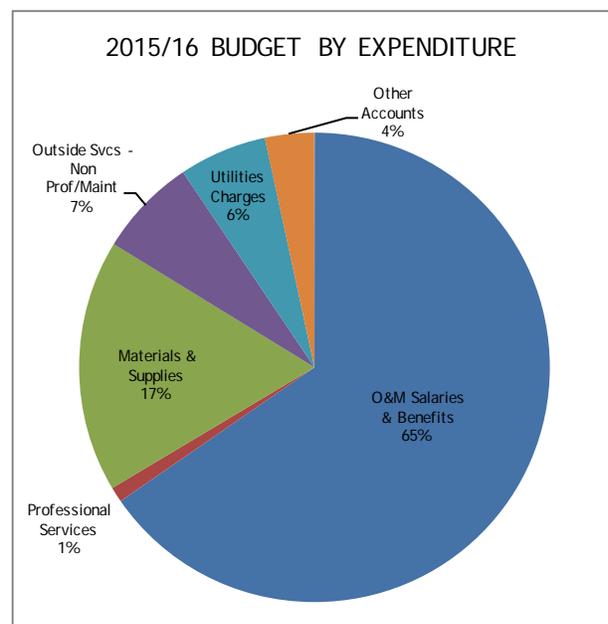
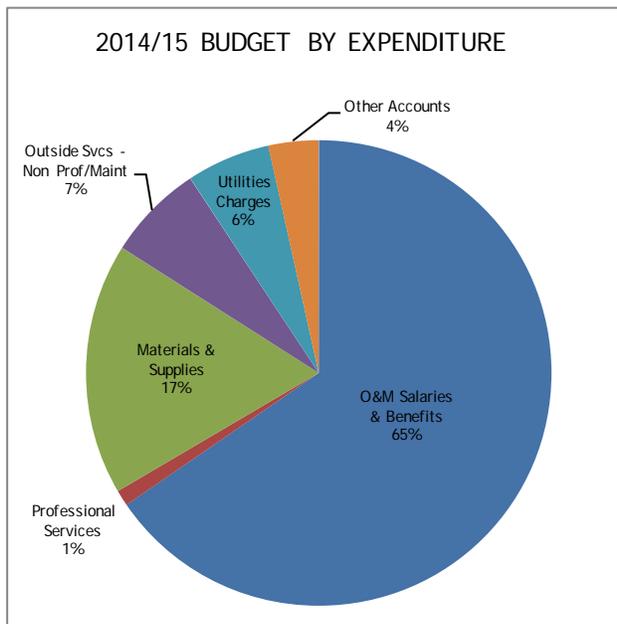
Continue to implement quagga mussel control measures and prepare an action plan for the potential infestation of State Water Project facilities.

Continue to provide safety and environmental services training to ensure safe work practices and adhere to environmental and workplace health and safety regulations.

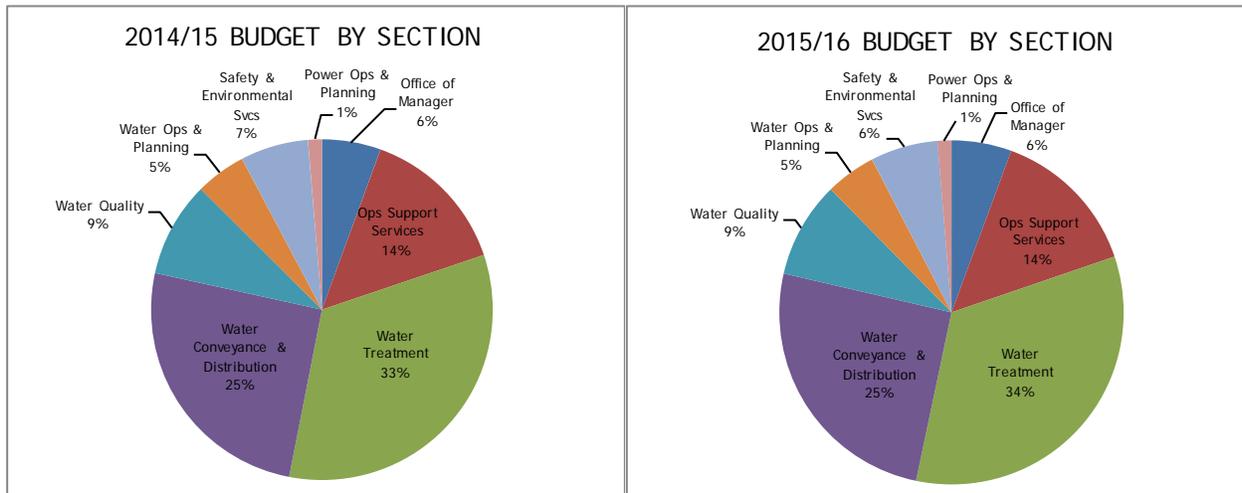
## O&M Financial Summary

	2012/13 Actual	2013/14 Budget	2014/15 Budget	Change from 2013/14	2015/16 Budget	Change from 2014/15
Total Salaries and Benefits	136,678,300	147,345,300	152,684,800	5,339,500	155,262,900	2,578,100
Direct charges to Capital	(5,818,100)	(7,588,600)	(6,636,400)	(952,200)	(7,222,700)	586,300
<b>O&amp;M Salaries &amp; Benefits</b>	<b>130,860,200</b>	<b>139,756,700</b>	<b>146,048,400</b>	<b>6,291,700</b>	<b>148,040,200</b>	<b>1,991,800</b>
% Change		6.8%		3.6%		1.4%
Professional Services	1,161,000	2,550,200	2,452,100	(98,100)	2,382,100	(70,000)
Materials & Supplies	36,150,400	37,818,600	39,004,800	1,186,200	39,339,000	334,200
Outside Services – Non Professional/Maintenance	13,306,100	14,289,200	14,942,500	653,300	15,358,000	415,500
Utilities Charges	11,886,700	12,204,200	12,964,500	760,300	13,661,700	697,200
Other Accounts	5,977,200	7,372,500	7,773,300	400,800	7,679,400	(93,900)
<b>Total O&amp;M</b>	<b>199,341,600</b>	<b>213,991,400</b>	<b>223,185,600</b>	<b>9,194,200</b>	<b>226,460,400</b>	<b>3,274,800</b>
% Change		7.3%		4.3%		1.5%
Operating Equipment	5,785,700	5,916,800	5,998,100	81,300	7,019,900	1,021,800
<b>Total O&amp;M and Operating Equipment</b>	<b>205,127,300</b>	<b>219,908,200</b>	<b>229,183,700</b>	<b>9,275,500</b>	<b>233,480,300</b>	<b>4,296,600</b>
% Change		7.2%		4.2%		1.9%

Note – Totals may not foot due to rounding.



## O&M BUDGET BY SECTION



	2013/14 Budget	2014/15 Budget	Change from 2013/14	2015/16 Budget	Change from 2014/15	Personnel Budget		
						13/14	14/15	15/16
Office of Manager	14,337,100	12,440,900	(1,896,200)	12,769,200	328,400	23	20	20
Operations Support Services	30,816,300	31,728,800	912,500	31,972,100	243,300	154	153	153
Water Treatment	69,501,400	74,308,000	4,806,600	75,976,000	1,668,000	269	277	275
Water Conveyance and Distribution	52,828,100	56,637,200	3,809,100	57,356,400	719,200	279	267	267
Water Quality	19,504,100	20,123,800	619,700	20,409,400	285,600	93	95	95
Water Operations and Planning	10,354,500	10,690,900	336,400	10,691,300	400	44	43	43
Safety and Environmental Services	13,917,000	14,325,400	408,400	14,342,700	17,300	53	54	54
Power Operations and Planning	2,733,000	2,930,600	197,600	2,943,200	12,600	10	11	11
<b>Total O&amp;M</b>	<b>213,991,400</b>	<b>223,185,600</b>	<b>9,194,200</b>	<b>226,460,400</b>	<b>3,274,800</b>	<b>925</b>	<b>920</b>	<b>917</b>

Note - Totals may not foot due to rounding.

## Personnel Summary

	2012/13 Actual	2013/14 Budget	2014/15 Budget	Change from 2013/14	2015/16 Budget	Change from 2014/15
Regular	857	946	949	3	949	0
O&M	830	909	906	(3)	903	(3)
Capital	27	37	43	6	46	3
Temporary	31	19	14	(5)	14	0
O&M	30	16	14	(2)	14	0
Capital	2	3	0	(3)	0	0
<b>Total Personnel</b>	<b>888</b>	<b>965</b>	<b>963</b>	<b>(2)</b>	<b>963</b>	<b>0</b>
O&M	859	925	920	(5)	917	(3)
Capital	28	40	43	2	46	3

Note - Totals may not foot due to rounding.

## SIGNIFICANT BUDGET ISSUES

WSO's biennial budget is \$223.2 million in FY 2014/15 and \$214.0 million in FY 2015/16 or an increase of 4.3% and 1.5% respectively from the prior budget years. The increase is due primarily to three factors.

- Salaries and Benefits costs related to merit increases for qualified employees and an increase in retirement-related benefits costs is the primary factor.
- The rate of chemical costs is expected to rise faster than overall inflation. In addition, a strengthening economy is expected to raise commodity prices. Further, an increase in chlorination of raw water systems is needed along the Colorado River Aqueduct to control quagga mussels.
- The rate of energy costs is also expected to rise faster than overall inflation. Major electric utilities serving Metropolitan have projected rate increases of six to twelve percent per year due in part to costs associated with greater renewable supplies and the loss of the San Onofre nuclear station.

The following are the significant changes by budget year.

### FY 2014/15

#### Personnel-related issues

For both O&M and capital work, the complement of regular employees is being increased by three positions to reflect increased regulatory and contractual efforts in the energy area and to provide additional technical and planning support for invasive rehabilitation projects at the water treatment plants and distribution system.

The budget reflects a reassignment of previously unallocated overtime and District temporary student interns as well as the transfer of vacant administrative positions from the Office of the Manager to specific sections. This section reorganization has no impact on WSO's overall labor budget.

The budget reflects an overall decrease in budgeted capital labor that occurs with the completion of large projects such as Skinner and Diemer oxidation retrofit programs.

#### Materials & Supplies

In addition to the increase in chemical costs as discussed above the budget also reflects an increase for the procurement of valves and electrical equipment to maintain the distribution system.

#### Other

Outside Services-Non Professional/Maintenance budget reflects increased cost for security guard contract, lead/asbestos abatement, and weed control on right-of ways.

Utilities budget reflects higher anticipated electricity rates as discussed above.

### FY 2015/16

#### Personnel-related issues

Overall personnel count for both O&M and capital work remains flat from the FY 2014/15 budget.

The budget reflects overall capital labor spending that will increase with the start or continuation of several major programs including the Weymouth ozone retrofit program, the PCCP replacement program, and the Diemer Water Treatment Plant Improvement Program.

#### Materials & Supplies

The budget reflects inflationary pressure anticipated on chemical commodity prices and other materials and supplies.

## Other

Outside Services-Non Professional/Maintenance budget reflects increased cost for security guard contract, and lead/asbestos abatement.

The utilities budget reflects higher anticipated electricity rates as discussed above.

## Operating Equipment – FY 2014/15 and FY 2015/16

The operating equipment budget has been maintained at a level which sustains the integrity of fleet assets. A high priority was placed on maintaining adequate heavy equipment for the emergency response goal of being able to respond to two major pipeline breaks simultaneously.

The operating equipment budget is relatively flat between budget years FY 2014/15 and FY 2015/16. The FY 2015/16 budget includes funds to replace an aircraft used for patrolling.