

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



General Manager's Monthly Activity Report for December 2016

December 31, 2016

This report identifies the actions and activities taking place during the month that support the objectives of the General Manager's Fiscal Year 2016/17 Strategic Priorities and the Core Business of the GM's work groups.

Strategic Priority: Complete the Bay Delta Conservation/California WaterFix Environmental Impact Report/Statement

California WaterFix—The California Department of Water Resources and the U.S. Bureau of Reclamation completed the documents for the California WaterFix environmental review process under the California Environmental Quality Act and National Environmental Policy Act. The final Environmental Impact Report/Environmental Impact Statement EIR/EIS was made available on December 22, 2016. Action on the document is expected once the state and federal Endangered Species Act permits are approved.



**Final Envir
WaterFix is Preferre**
SACRAMENTO, Calif. – Following released the final, refined environn infrastructure.
"WaterFix will secure water supplies for 25 million Californians and pr

Content by Work Group

| | | | |
|-------------------------|-------|-------------------------|-------|
| Administrative Services | 2 | Human Resources | 17-19 |
| Annexations | -- | Information Technology | 19 |
| Bay-Delta Initiatives | 3-4 | Real Property | 20-21 |
| Chief Financial Officer | 5-6 | Water Resource Mgmt | 22 |
| Engineering Services | 7-11 | Water Supply Conditions | 23 |
| External Affairs | 12-17 | Water System Operations | 24-32 |

CORE

BUSINESS PROCESSES

Advance continuous business process improvements to improve effectiveness and efficiency while striving for innovation, flexibility, and integration with technology

Implement innovative solutions for customers that will positively impact their business operations through improved quality, speed, simplicity, and cost improvements.

Enterprise Content Management—Staff partnered with a consulting firm specializing in Enterprise Content Management and Information Governance projects to ensure that business needs and key requirements are gathered from Metropolitan stakeholders. Staff worked with Water System Operations, Engineering Services, Legal, Human Resources, Water Resource Management, External Affairs, Information Technology, Finance, and Real Property to finalize the scope of work for development of the Request for Proposal and to validate and document user cases for the pilot deployment areas.

Simplify access to business information.

Administrative Process and Procedure—Staff developed a process for using the Versatile Retention database to identify and research retention requirements. The Versatile Retention database references authoritative documents and sources that can affect Metropolitan records.

Continue innovative sustainability efforts in business practices including, Spring Green Expo, Our Legacy Newsletter, the rideshare program, energy conservation, and recycling efforts.

Our Legacy e-Newsletter—The second quarter newsletter marks the 100th issue of the *Our Legacy E-Newsletter* and highlights the topics of the past 99 issues. The focus of raising awareness about sustainability issues and encouraging positive green behavior changes for employees still remains the same for our newsletter.

Foster a workplace culture of innovation.

Point of Use Dispensing Machines—Staff completed review of potential items for Point of Use Dispensing machines at Diamond Valley Lake and Weymouth Building 10 (facility maintenance, control systems, and electrical teams) and is working with an existing vendor to supply machines and items. These areas will benefit by having 24/7 onsite access to frequently used items such as fasteners, tools, and personal protective equipment.

BAY-DELTA SOLUTIONS

- Develop near- and long-term solutions that enhance the Delta ecosystem, improve water supply reliability, protect water quality, and mitigate environmental impacts.
- Participate in the State Water Resources Control Board (SWRCB) process considering petition for an additional point of diversion as part of the CA WaterFix project.
- Continue to work on efforts related to meeting the co-equal goals of contributing to a restored Delta ecosystem and ensuring a reliable water supply for California.

NEAR TERM – Develop near-term measures, compatible with long-term Delta solutions, to improve water supply reliability and water quality, and facilitate protection and enhancement of Delta ecosystems and associated species.

State Water Resources Control Board (SWRCB)

In December, the California WaterFix Petition hearings before the State Water Resources Control Board continued. Part 1 of the hearings addresses the effects of the proposed project on legal users of water. Staff is preparing for the rebuttal phase of Part 1 in collaboration with the State Water Contractors and Department of Water Resources. The rebuttal phase will likely begin in early January 2017. Part 2 of the hearings, which is scheduled to begin once the EIR/EIS and Endangered Species Act permits are approved, will consider the effects of the project on fish and wildlife and review “appropriate flow” criteria.

Staff continues to participate in several aspects of the SWRCB Bay-Delta Water Quality Control Plan (WQCP) update process in collaboration with the State Water Contractors. Staff is reviewing the environmental document released by the SWRCB pertaining to Phase 1 of the WQCP update process. The Phase 1 update of the WQCP addresses requirements for salinity in the southern Delta and San Joaquin River flows. Written comments on the Phase 1 document are due in mid-January 2017. Phase 2 of the WQCP update will address other comprehensive changes, such as requirements for Delta outflows, Sacramento River flows, and interior Delta operations. Staff is reviewing the draft technical document entitled Working Draft Scientific Basis Report Supporting Potential Changes to the Bay-Delta Plan, pertaining to Phase 2 of the WQCP update process. Oral comments were provided to the SWRCB on December 7 regarding the draft Scientific Basis report, with written comments submitted on December 15.

Turbidity Forecasting

The Delta Conditions Team held its first meeting of the 2016/17 season on December 9. The Delta watershed experienced a sizeable storm event during the week of December 12, resulting in significant watershed runoff, flood control releases from Lake Folsom and elevated Delta inflows. In response to these high flows and the resulting “first flush” of turbidity, the Central Valley Project and State Water Project gradually scaled back export operations from full capacity to maintain reverse Old and Middle River flow in the range of 5000 cubic feet per second. As of this writing, no Delta smelt salvage has been reported, the turbidity plume appears to be within a manageable range, and a significant salvage event is not anticipated.

BAY-DELTA SOLUTIONS continued....

SCIENCE/REGULATORY – Pursue the best scientific research to protect and restore fish, wildlife, and the Delta’s ecosystem while ensuring water supply reliability.

Science/Regulatory

In December, staff continued work on the development of Delta Smelt Resiliency Strategy actions, including the reoperation of the Suisun Marsh Salinity Control Gates and Franks Tract restoration feasibility study. Staff worked with experts in the field of Adaptive Management Experimental Design to develop a proposed Adaptive Management Program for the reoperation of the Suisun Marsh Salinity Control Gates during the summer. Such operation would significantly reduce salinity within Suisun Marsh and would allow various theories about the benefits of reduced salinity for Delta Smelt to be tested. Staff also participated in the Franks Tract Restoration Charrette. The objectives are to promote survival of listed species and reduce habitat that promotes invasive species. Future efforts will occur to further develop the alternatives and develop an Adaptive Management Plan.

Staff participated in an environmental leaders workshop with non-governmental organizations representatives from southern and northern California to discuss reconciliation of the Delta and key topics that underpin restoration opportunities in the Delta. The workshop included talks on reconciliation ecology, a vision for salmonid recovery, restoration actions based on acoustic telemetry data, EcoRestore, a potential 2018 water bond, and opportunities for the environmental and water community accelerating Delta restoration opportunities.

EMERGENCY RESPONSE – Ensure that Delta emergency response measures are implemented, including actions to develop a freshwater pathway after a major emergency event in the Delta.

Emergency Response

Recent scientific studies involving potential seismic activity in the Bay-Delta region have addressed effects of potentially reduced ground shaking at increased distance from faults and the potential for greater ground shaking due to effects of a possible combined Hayward-Rogers fault system. In 2017, Metropolitan will make upgrades to the current seismic response model used in the Delta region to provide enhanced understanding of seismic threats to Delta levees.

The Department of Water Resources reported that the final refinements to the Emergency Response Tool model have been completed. The model addresses repair logistics for as many as 30 island failures simultaneously and includes additional response mechanisms such as enhanced Delta Cross Channel operations, San Joaquin River pulse flows and levee repair forecasts under real time hydrologic conditions. The initial runs to address logistics and timelines for establishing the emergency freshwater pathway in major emergencies was reviewed in late December.

DWR has expressed interest in placing emergency rock storage at the temporary barrier locations that isolate and form the emergency freshwater pathway on Middle River. This would place emergency flood fight materials at locations of most immediate need if major seismic related levee failures occur. Work to rehabilitate an additional large-scale emergency materials warehouse and to construct two additional permanent water-access rock loading facilities at the Weber property in Stockton will be initiated in 2017.

**CFO
PRIORITY**

MAINTAIN STRONG FINANCIAL POSITION

Provide innovative and proactive financial analyses, planning, and management services to ensure that forecasted revenues are sufficient to cover planned expenditures and provide a prudent level of reserves consistent with Board policy.

Manage rates and charges to help maintain low rates, minimize their variability, and recover costs consistent with Board policy.

The fourth meeting of the Treatment Fixed Charge Workgroup was held on November 17, 2016, as reported to the Finance and Insurance Committee on November 7, 2016. The next meeting will be on January 17, 2017.

Manage Risk to protect Metropolitan’s assets against exposure to loss.

The Risk Management Unit completed 49 incident reports communicating instances of Metropolitan property damage, liability, workplace injuries, regulatory visits and spills.

Risk Management completed 85 risk assessments on contracts, including professional service agreements, construction contracts, entry permits, special events and film permits.

CORE

MANAGE FINANCES FOR LONG-TERM STABILITY AND SUSTAINABILITY

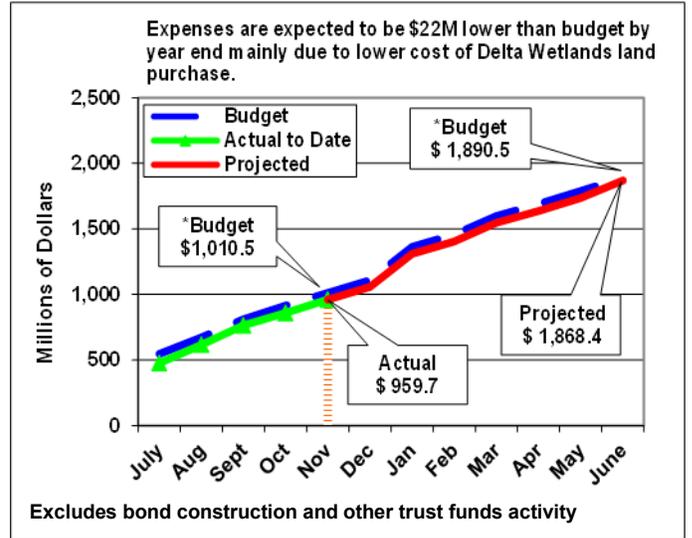
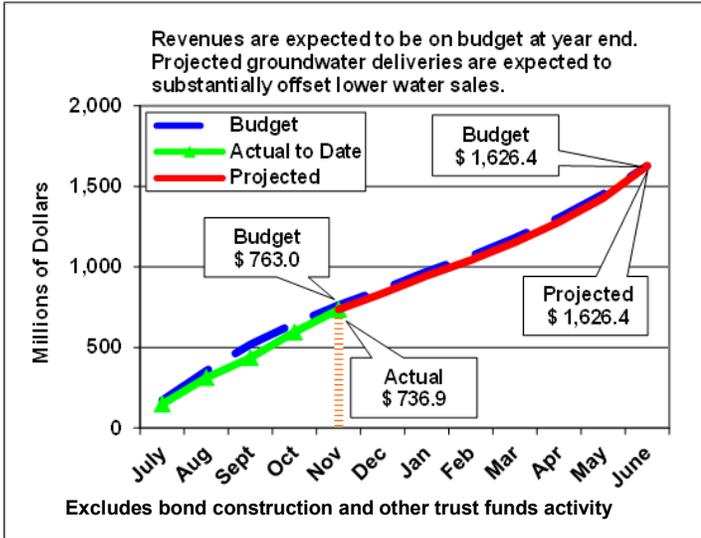
Minimize water rate increases, manage costs within the adopted budget, and strive to meet Board policies for all key financial ratios. To meet these objectives, Metropolitan will continue to focus on achieving cost reductions and efficiencies in all areas of its business, with primary focus on staffing levels and capital program costs to ensure that these areas are sustainable and sufficient to meet long-term service area demand forecasts.

Update capital financing plans and work with rating agencies and investors to communicate financial needs and capabilities, ensure cost-effective access to capital markets, and maintain long-term bond ratings of AA or better.

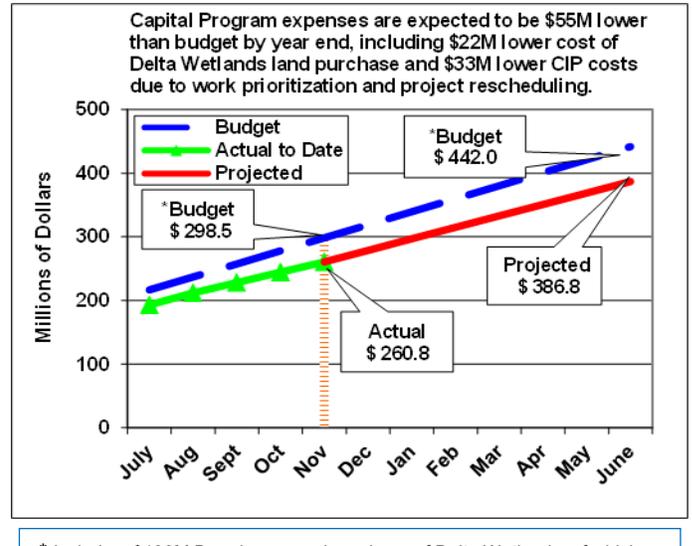
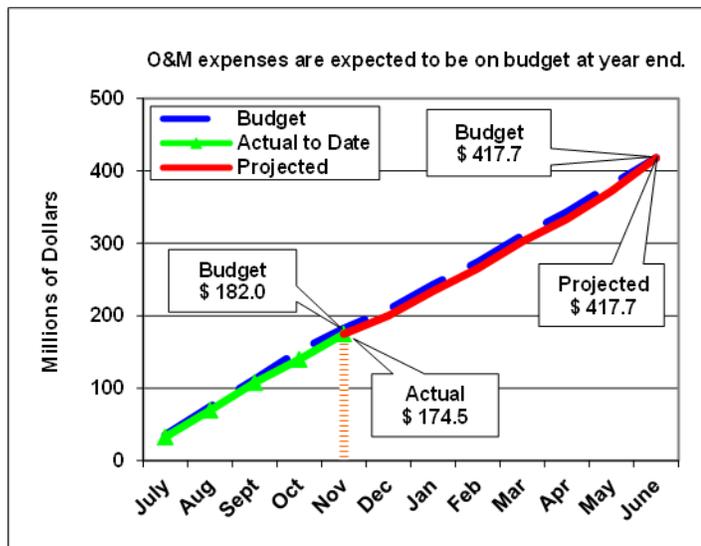
On December 13, Metropolitan’s Board adopted the Second Supplemental Subordinate Resolution to the Master Subordinate Resolution, authorizing the issuance of \$175 million, Subordinate Water Revenue Bonds, 2016 Authorization. Bond proceeds will reimburse unrestricted reserves used for the July 2016 land purchase from Delta Wetlands Properties. These will be variable rate bonds and will be purchased by Bank of America, N.A. The bond transaction will close by December 31, 2016.

CHIEF FINANCIAL OFFICER

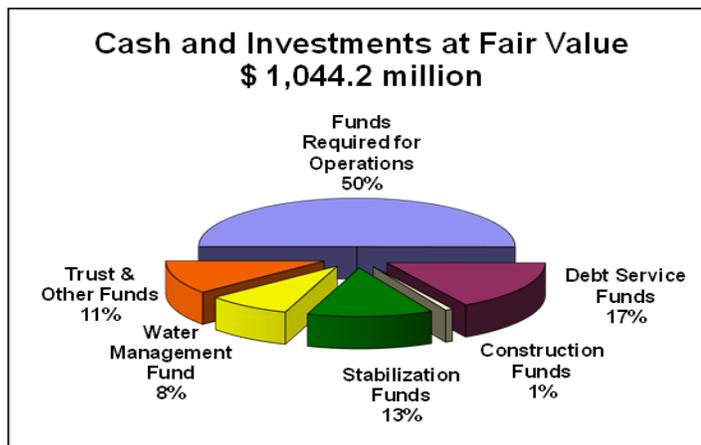
FINANCIAL SUMMARY AS OF November 30, 2016



* Includes \$196M Board-approved purchase of Delta Wetlands, of which \$174M has been spent.



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Summary Financial Statistics

| | Target | Year-End Projected |
|----------------------------------|----------|--------------------|
| Fixed Charge Coverage | ≥ 1.20 x | 1.27% |
| Revenue Debt Service Coverage | > 2.00 x | 1.55% |
| Revenue Bond Debt / Equity Ratio | < 100.0% | 62.0% |

Credit Ratings

| | Target | Year-End Projected |
|-----------------------------|--------|--------------------|
| - Moody's Investors Service | Aa2 | Aa1 |
| - Fitch Ratings | AA | AA+ |
| - Standard & Poor's | AA | AAA |

CORE

INFRASTRUCTURE RELIABILITY

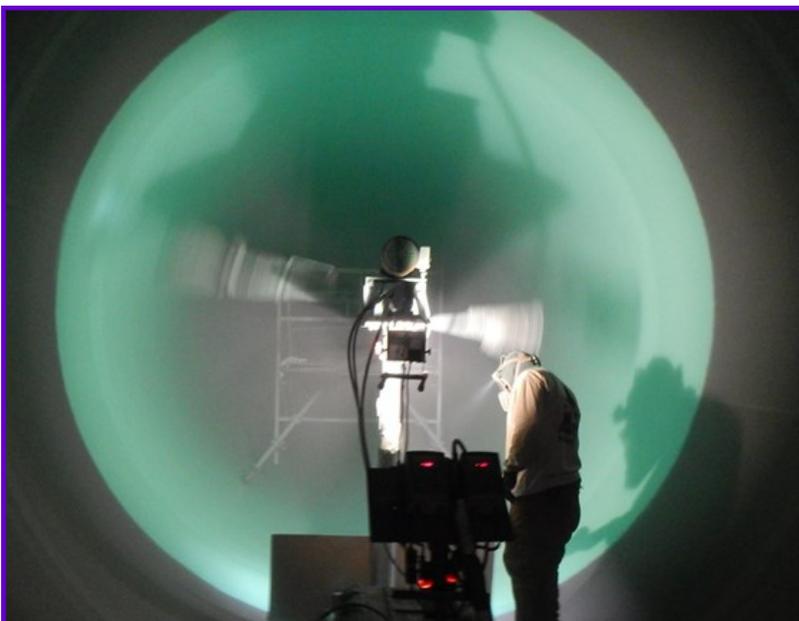
Manage Board-authorized projects in the Capital Investment Plan and collaborate with the Water System Operations Group to identify and address system vulnerabilities to ensure reliability of the region's water treatment and delivery infrastructure. In addition, coordinate closely with WSO to integrate project planning and facility assessment efforts with near-term actions and planned shutdowns.

Manage and complete Board-authorized projects within the CIP to ensure the reliable delivery of water to Metropolitan's member agencies.

Distribution System Reliability Program

This program maintains reliable water deliveries through specific repair and rehabilitation projects on Metropolitan's pipelines, reservoirs, and control structures. Recent activities include the following:

- Etiwanda Pipeline Lining Repairs – This project replaces the Etiwanda Pipeline's damaged interior mortar lining with a polyurethane coating. The pipeline will be relined in three stages. Construction of the Stage 2 repairs is 74 percent complete and is scheduled to be complete by March 2017. Design of the Stage 3 repairs is 98 percent complete and is scheduled to be complete by January 2017. *(See photo below)*
- Greg Avenue Pump Station Rehabilitation – This project improves the operational reliability of the Greg Avenue Pump Station by replacing the existing pumps and upgrading the electrical and control systems. This pump station provides a backup supply of treated water to the West Valley area when the Jensen plant is out of service. Design is 93 percent complete and is scheduled to be complete by March 2017.
- Palos Verdes Reservoir Rehabilitation – This project replaces the reservoir's existing floating cover and liner, and modifies the existing spillway, control tower, and outlet structures. Construction is 20 percent complete and is scheduled to be complete by November 2017.
- Middle Feeder Relocation – Metropolitan's 72-inch-diameter Middle Feeder is located within a 40-foot easement that crosses the Southern California Edison Mesa Substation in the city of Monterey Park. SCE intends to expand the existing substation to meet future regional power demands. In December 2015, the Board authorized a cost-sharing agreement with SCE to relocate 3,300 feet of the Middle Feeder to a new alignment within SCE's property. SCE has awarded a construction contract and issued the pipe fabrication contract. However, SCE notified Metropolitan that the shutdown to tie-in the new pipeline will be deferred from March to October 2017 based on SCE's anticipated final approval date from the Public Utilities Commission.



Etiwanda Pipeline Lining Repairs –
Application of polyurethane coating

INFRASTRUCTURE RELIABILITY continued...

Right-of-Way and Infrastructure Protection Program

This program performs needed site improvements within the distribution system, including erosion protection for pipelines and access roads. It also addresses right-of-way issues such as access easements and third-party encroachments, and obtains long-term programmatic environmental permits to enable system-wide improvements. Recent activities include the following:

- Orange County Operating Region – Final design of improvements for the Orange County region is 98 percent complete and is scheduled to be completed by February 2017.
- Western San Bernardino County Operating Region – Final design of improvements for the Western San Bernardino County region is 70 percent complete and is scheduled to be complete by May 2017. The draft programmatic environmental impact report for this region is expected to be released for public review and comment by February 2017.
- Los Angeles County Operating Region – Preliminary design of improvements is 95 percent complete and is scheduled to be complete by February 2017.
- Riverside/San Diego County Operating Region – Preliminary design of improvements is 95 percent complete and is scheduled to be complete by January 2017.

Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program

This program enhances the reliability of Metropolitan's water distribution system and reduces the risk of costly emergency repairs of PCCP lines. Recent activities include the following:

- Second Lower Feeder PCCP Rehabilitation – This project rehabilitates the remaining 28 miles of existing PCCP segments within the Second Lower Feeder. Design of the valve and pipe procurement is approximately 53 percent complete and is scheduled to be complete by early 2017. Final design of the first pipeline rehabilitation package is 28 percent complete and is scheduled to be complete by August 2017.
- Programmatic EIR – The draft programmatic EIR was released for public review in September 2016. The 45-day public review period ended on October 17, 2016. Certification by Metropolitan's Board is scheduled for January 2017.
- PCCP Inspections – A key component of Metropolitan's strategy for management of its PCCP feeders is to perform regular monitoring of the lines. Electromagnetic inspections of portions of the Rialto Pipeline and Second Lower Feeder were completed in November 2016. Results from the inspection are scheduled to be finalized in January 2017.

Water Quality/Oxidation Retrofit Program (ORP)

This program adds ozonation facilities which reduce disinfection by-products and improve water quality at Metropolitan's five water treatment plants. Recent activities include the following:

Weymouth ORP

- ORP Chemical & Bromate Control Upgrades – These chemical systems are needed for integration of the new ozonation system into the plant's treatment process. Construction is 41 percent complete. The upgrades are scheduled to be complete by May 2018.
- Main ORP Facilities – Construction of the ozonation system is 99 percent complete and is scheduled to be complete by early 2017. Completion activities for the ORP were initiated in December 2016, including control system integration, start-up and testing, permitting with the State Division of Drinking Water, and preparation of Operation and Maintenance manuals.

Treatment Plant Reliability Program

This program was initiated to maintain reliability and improve the operating efficiency of Metropolitan's five water treatment plants through specific improvement projects. Recent activities include the following:

Mills Plant

- Chemical Unloading Facility Containment System – Construction of the containment system is 94 percent complete and is scheduled to be complete by April 2017.
- Industrial Wastewater Handling Improvements – This project adds three wastewater storage tanks and a force main connection to the municipal sewer system to enable safer and more efficient handling of the wastewater and to reduce the risk of an accidental release. Construction was completed in December 2016.

Diemer Plant

- East Filter Upgrades – This project upgrades the Diemer plant's east filters, including replacement of 127 deteriorated valves with new AWWA-standard valves and seismic strengthening of the filter buildings. Construction is 99 percent complete and is scheduled to be complete by January 2017.
- East Basin Rehabilitation – This project rehabilitates aging mechanical equipment and the electrical and structural components within the east flocculation/sedimentation basins. Construction is 52 percent complete and is scheduled to be complete by July 2017.
- Electrical Upgrades, Stage 2 – This project replaces aging electrical equipment, provides redundant power sources for critical treatment processes and chemical feed systems, and redistributes power loads. Construction was completed in December 2016.
- Administration Building Seismic Upgrades – This project provides seismic and fire safety upgrades to the Administration Building at the Diemer plant, which houses the plant's control room, Incident Command Center, laboratory, and administrative offices. Notice to Proceed was issued in December 2016, and construction is scheduled to be complete by April 2018.

Jensen Plant

- Module No. 1 Filter Valve Replacement – This project replaces 78 deteriorated filter valves within Module No. 1 with new AWWA-standard valves. Construction is 98 percent complete and is scheduled to be complete by January 2017.
- LADWP Lagoon Refurbishment – This project rehabilitates four Los Angeles Department of Water and Power lagoons, which will be used for a period of 50 years by Metropolitan. Construction is 90 percent complete and is scheduled to be complete by May 2017.
- Electrical Upgrades, Stage 1 – This project replaces electrical equipment, provides backup in the event of individual component failures, and upgrades the Jensen electrical system to be consistent with current codes and industry practices. The work will be completed in three stages. Construction of Stage 1 is 56 percent complete and is scheduled to be complete by February 2019.

Weymouth Plant

- Filter Rehabilitation – This project replaces the internal components of the plant's 48 filters, including the underdrains, media, launder troughs, and surface wash systems. Construction is 70 percent complete and is scheduled to be complete by December 2017.

INFRASTRUCTURE RELIABILITY continued...Colorado River Aqueduct (CRA) Reliability Program

This program maintains the reliability of Metropolitan's CRA conveyance system. Recent activities include the following:

- CRA Auxiliary Power – This project replaces the auxiliary power system at each CRA pumping plant. These systems provide electricity that powers critical support systems for the CRA main pumps. Preliminary investigations are 23 percent complete and are scheduled to be complete by July 2017.
- Sand Trap Rehabilitation – This project replaces deteriorated sand trap equipment located upstream of the Iron Mountain, Eagle Mountain, and Hinds Pumping Plants. Construction is 58 percent complete and is scheduled to be complete by August 2017. (*see photos page 11*)
- Expansion Joint Repair – This project repairs 16 expansion joints located on the pump delivery lines at the CRA pumping plants. Repairs will be completed in two stages. The initial stage addressed three expansion joints and was completed in February 2016. The second stage will repair the remaining 13 joints. Final design of Stage 2 repairs is complete and a request to the Board for award of a construction contract is planned for February 2017.
- 6.9 kV Switch House Building Seismic Upgrades – This project performs structural upgrades to the 6.9 kV switch houses at each CRA pumping plant. Construction is five percent complete and is scheduled to be complete by July 2018.
- CRA Sump Isolation Valve Installation – This project replaces sump isolation valves at the CRA pumping plants. These valves allow isolation of the circulating water system from the pumping plant's inlet lines, therefore eliminating the need to shut down the aqueduct for future sump repairs. Fabrication of the valves is complete, and a request to the Board for award of a construction contract is planned for January 2017.
- Copper Basin & Gene Wash Reservoirs Discharge Valve Replacement – This project replaces the deteriorated fixed cone valves at the base of the reservoirs. These valves are used to discharge water from the reservoirs when needed. The procurement contract for the valves was awarded in December 2016. Final design of the valve installation package is 10 percent complete and is scheduled to be complete by December 2017.
- Conduit Structural Protection – This project adds protection over the aqueduct cut-and-cover conduits at 22 locations where there is vulnerability to heavy vehicle and equipment loading. Design is five percent complete and is scheduled to be complete by December 2017.

Cost Efficiency and Productivity Program

This program provides economic savings through enhanced business and operating processes and through reduced energy costs. Recent activities include the following:

- Jensen Solar Power Plant – This project constructs a 1-megawatt solar generating facility on the grounds of the Jensen plant in Granada Hills. Construction is 15 percent complete and is scheduled to be complete by August 2017.

INFRASTRUCTURE RELIABILITY continued...



Colorado River Aqueduct Sand Trap Rehabilitation – Removal of the electrical conductor support at Eagle Mountain Pumping Plant

CRA Sand Trap Rehabilitation – Installation of the crane rail at Eagle Mountain Pumping Plant



STRATEGIC PRIORITY

EDUCATE THE PUBLIC AND STAKEHOLDERS ON CRITICAL WATER SUPPLY CONDITIONS AND CRITICAL WATER MANAGEMENT DECISIONS

External Affairs will develop and maintain relationships with the public, legislative leaders, government officials, non-governmental organizations, and other stakeholders, and implement effective and diverse communication and outreach strategies on the value of water, current water supply conditions and the importance of Metropolitan actions to promote stewardship, planning and investments to benefit the region.

Recognizing there is a new normal that is directly impacting California water conditions, inform key stakeholders, media, businesses and the public on the need for sustained conservation actions, support for new water supply projects and continued investment in imported water systems to maintain water supply reliability and protect the environment.

- Chairman Record, numerous Directors and staff attended the Association of California Water Agencies' Fall Conference and associated committee meetings in Anaheim. General Manager Kightlinger, AGM/Chief Operating Officer Man and other staff spoke at the conference on topics ranging from the Bay-Delta and recycled water to Public Records Act issues and innovation. Metropolitan was acknowledged as a finalist for ACWA's Circle of Blue Award for Communications as well as for Metropolitan's support for the association. Kathy Cole was awarded ACWA's Emissary Award. (Nov 30-Dec 2)
- Chairman Record, numerous Directors and staff attended and General Manager Kightlinger participated in a panel discussion at the Colorado River Water Users Association conference on drought conditions, transfers and conservation. Staff also provided conservation information as part of the conference exhibits. (December 16-18) *(see photo below)*
- Media interest in the Water Infrastructure Improvements Act for the Nation (WIIN) and its potential impact on water deliveries from the Sacramento-San Joaquin Delta and water infrastructure investments generated requests for interviews. Metropolitan's senior management, led by General Manager Kightlinger spoke to reporters from Los Angeles Times, Sacramento Bee, KPCC radio, and Water Deeply.
- Arranged interview with Water Resource Management Manager Upadhyay and KPCC radio reporter for a story about the state's initial 20 percent State Water Project allocation and its impacts on Southern California.
- Provided information to Los Angeles Times and KPCC reporters about the Metropolitan management-requested audit of the turf removal rebate program.
- Colorado River Resources Manager Hasencamp was interviewed by Union-Tribune reporter on Colorado River issues including Minute 319 and prospects for Minute 32x.
- Arranged interview with General Manager Kightlinger and Los Angeles Times editorial board about the one-tunnel option proposed by the Public Policy Institute of California.
- AGM/Strategic Water Initiatives Patterson spoke with Water Deeply reporter about the proposed one-tunnel option for California WaterFix.



Colorado River Water Users Association Conference – Metropolitan exhibit with General Manager Kightlinger and Kevin McLaughlin.

LEGISLATIVE, COMMUNICATIONS, COMMUNITY RELATIONS, PUBLIC AND BUSINESS OUTREACH

Engage the public, labor, business community, agriculture, government leaders, non-governmental organizations and other stakeholders in California's water issues, communicating Metropolitan's interests and Board-adopted policies through federal and state legislative strategies, multimedia and multi-cultural communications, and educational and other outreach programs. Inform the public about Metropolitan projects, facilities, operations and initiatives to gather input and support, foster competitive and diverse business opportunities and facilitate innovation and technology sharing.

LEGISLATIVE SERVICES - Develop and implement local, state and federal legislative and regulatory strategies consistent with Board-adopted policies. Promote interaction between Metropolitan leadership and various stakeholders, including elected officials, to facilitate support for, and garner greater understanding of, water policy issues.

Federal

With the change in Administration following the November election and an affirmed Republican majority in both the U.S. House of Representatives and Congress, much of December has been focused on the naming of Cabinet members and affirming committee leadership in Congress.

In the remaining days of the 114th Congress, staff worked with member agencies, state and federal water organizations and the Southern California Congressional delegation to build support for water infrastructure and drought assistance legislation (the WIIN Act) and tax rebate parity for water conservation rebates.

State

In the November election, Assembly Democrats captured a supermajority by picking up three districts and now hold 55 of the 80 seats. In the Senate, Democrats secured 27 of the 40 seats.

Senate and Assembly convened to open the 2017/18 legislative session. Senator De Leon (D-Los Angeles) will continue as Senate President pro Tempore and Assembly Member Rendon (D-Lakewood) will continue as Speaker of the Assembly. (December 5)

New bill introductions of interest to the water community include two general obligation bond measures. SB 5 by Senate President Pro Tem De Leon is a \$3 billion general obligation bond proposal for June 2018 to fund state, regional and local park-related activities and drought and water investments. Assembly Member Garcia (D-Coachella) introduced a similar \$3.05 billion general obligation bond measure, AB 18, which would fund many parks and water programs.

Local

- Director xx Staff gave a presentation to the La Verne Rotary on resource issues. (December 1)
- Staff attended the Central City Association's Government Affairs meeting. (December 1)
- Staff attended the Los Angeles Area Chamber of Commerce's Land Use, Construction and Housing Council meeting. (December 1)
- Staff attended the Los Angeles Business Council's Energy and Environment Committee. (December 1)
- Metropolitan sponsored and staff attended the Southern California Leadership Network 2016 Visionaries Awards where local leaders, including Congresswoman Karen Bass, were honored. (December 8)
- Staff attended the Inland Empire Economic Partnership's All-Divisions meeting. (December 8)
- Metropolitan participated in the BizFed Board of Directors meeting. The Board voted to submit a comment letter to Los Angeles County on its proposed Net Zero Water policy. (December 13)

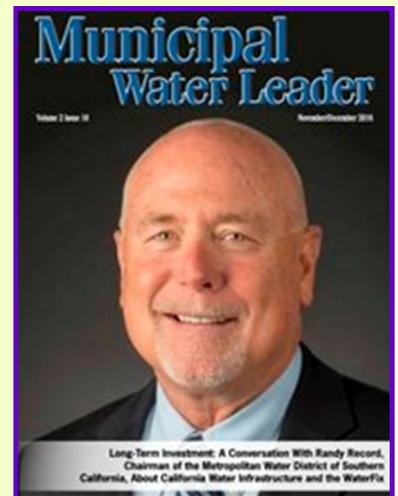
LEGISLATIVE SERVICES continued...

- Metropolitan helped sponsor and staff attended the Los Angeles Area Chamber of Commerce’s Economic Briefing and Post-Election Update. (December 13)
- Metropolitan sponsored and staff participated in the annual legislative update of the Chambers Alliance of Ventura and Santa Barbara County in Ventura. Representatives of the region’s state and local elected officials and more 100 business leaders attended the event. (December 15)
- Staff attended BizFed’s Policy and Politics event, where political experts discussed the future of local, state and national politics. (December 16)
- Metropolitan provided a briefing to newly-elected Assembly Member Rubio (D-Baldwin Park) on water supply conditions, conservation, local water projects and Bay-Delta issues. (December 28)

MEDIA AND COMMUNICATIONS - Communicate Metropolitan’s policy priorities, actions and initiatives through various means to raise public awareness, enhance the district’s visibility and cultivate support for district priorities. Update and develop new communications tools, materials and platforms to ensure Metropolitan information reaches diverse audiences throughout its service area in a cost-effective, timely, relevant manner that reflects current communications trends.

Media Interviews and Communication Activities

- Cover story featuring Chairman Record was published in November/December issue of Municipal Water Leader magazine. The article focused on the need for water infrastructure investment.
- Arranged filming of Group Manager Upadhyay for a feature length documentary about the drought/water management in Southern California. The film is being produced by Palomar College.
- Arranged interview with Assistant General Manager/CFO Breaux and Bloomberg News reporter to discuss Metropolitan’s sale of variable rate demand municipal bonds.
- Provided information to S&P Global Market Intelligence reporter about turbine replacement at the Diemer water treatment plant hydroelectric facility.
- Distributed latest edition of Metropolitan’s e-newsletter Your Water to more than 12,000 recipients.
- Developed new outreach materials on California WaterFix water supply and cost impacts for Metropolitan member agencies. Coordinated with state team and other public water agencies for release of California WaterFix final EIS/EIR and submittal of draft biological opinions to the California Independent Science Board.



Press Releases

- Funding for industrial water recycling projects as part of the Water Savings Incentive Program.
- Action by Metropolitan’s Board of Directors to approve new financial incentives for water conservation activities in the Palo Verde Valley.
- Statement by General Manager Kightlinger on release of final California WaterFix Environmental Review documents.

LEGISLATIVE, COMMUNICATIONS, COMMUNITY RELATIONS, PUBLIC AND BUSINESS OUTREACH continued...

MEDIA AND COMMUNICATIONS continued...

Website

Visits to the new bewaterwise.com website for tips and ideas on how to conserve water have seen steady growth, with more than 33,200 people visiting the site. Work is underway to fully translate the new site to Spanish and Chinese and should be complete in early 2017.

Online

Paid online search on Google Search and the Google Content Network continued this month. Links to bewaterwise.com appear when keywords such as “water,” “California weather,” and “water rebates” are searched for by Southern California users.

Social Media

Tweets on Metropolitan’s education programs received over 20,000 impressions using #solarcup, #waterart, #thinkh2o, #mwdeducates through @bewaterwiseh2o and @mwdh2o. *(see photo below)*

PUBLIC OUTREACH AND MEMBER SERVICES - Conduct public outreach to increase awareness and input on Metropolitan projects and initiatives and ensure impacted communities are aware of Metropolitan construction and maintenance activities. Enhance public awareness of Metropolitan’s systems and facilities and the role they play in regional supply reliability while protecting environmental resources. Serve as liaison to Metropolitan’s member agencies and facilitate their engagement with the district.

Public Outreach and Member Services

- Staff provided notices to 850 homes and businesses in the El Sereno community of Los Angeles for the Collis Avenue Valve Structure Replacement Project.
- Staff assisted residents living in the vicinity of the Etiwanda Pipeline Repair Project with concerns about temporary impacts from project construction activities.
- Metropolitan met with the Member Agency general managers to discuss conservation, project operations, and other resource issues.



Tweet from Education Unit.

LEGISLATIVE, COMMUNICATIONS, COMMUNITY RELATIONS, PUBLIC AND BUSINESS OUTREACH
continued...

EDUCATION AND COMMUNITY RELATIONS - Facilitate public engagement in and understanding of water resource issues through community relations activities and education projects. Build awareness of and appreciation among Southern California youth for the value of clean, reliable water supplies and the importance of good water stewardship.

General Education

Staff supported various events/activities and outreach presentations including:

- Career Café at McAuliffe Middle School (Los Alamitos)
- Webinar with member agency education representatives
- Career Day at Granada Middle School
- Solar Cup Technical Workshop
- Water quality tablet-based teacher workshop with the MWDOC and the Orange County Department of Education.

The Education Unit directly interacted with more than 2,900 students and teachers as well as distributed nearly 5,000 pieces of curriculum.

World Water Forum College Grant Program

The World Water Forum Advisory Committee met to review research updates by participating college teams as well as honored the contributions and career of retiring U.S. Bureau of Reclamations representative Bill Steele, who has been a leading member of the Advisory Committee since the program's inception. (December 7)

Diamond Valley Lake Education Program

The Visitor Center hosted more than 1,100 visitors and guided nearly 400 visitors to the Viewpoint. Many of this month's visitors also participated in the Western Science Center's Old-Fashioned Holiday event.

Student Art Program

More than 200 students, parents, teachers and water agency representatives and Director Faessel attended the Annual Student Art Recognition event at which the 2017 calendar was unveiled and students presented information about their artwork. Mascots from several member agencies also made appearances. The art will be showcased in a year-long tour throughout the service area. *(see photo below of student artists with Director Faessel and Admiral Splash)*



EXTERNAL AFFAIRS

CORE

LEGISLATIVE, COMMUNICATIONS, COMMUNITY RELATIONS, PUBLIC AND BUSINESS OUTREACH continued...

Facilitate opportunities for small businesses to work with Metropolitan. Help position Metropolitan as a leader in water resource/systems innovation.

In December, Metropolitan supported small- and disabled-veteran businesses throughout the region by participating in the following award programs, conferences and events:

- Exhibited at a workshop sponsored by State Senator Roth, the Board of Equalization, and the California Governor's Office of Business and Economic Development to inform business owners about doing business with Metropolitan and other local government agencies. (December 1)
- The Technology Review and Feedback Program met to review 2016 program accomplishments, including approximately 50 reviews and proposals from technology and innovation firms and plans for 2017 programs. The meeting was attended by 30 representatives from Metropolitan, Los Angeles Department of Water and Power and the Los Angeles CleanTech Incubator. (December 13)
- TechHub staff met with the Canadian Consulate to debrief on the recent Canadian Water Roadshow and discuss a similar event in 2017. Metropolitan has also been invited to exhibit and present at the next Canada WaterTap event to be held in Ontario, Canada. (December 14)
- Metropolitan is working with the Los Angeles CleanTech Incubator on plans to set up a new regional water cluster in which Metropolitan will serve as a major partner of water innovation leadership. (December 14)

HUMAN RESOURCES

STRATEGIC PRIORITY

EMPLOYEE DEVELOPMENT

Recruitment activity will be expanded to fully replace all retirements and add some positions to bring the work force to approximately 1,800 positions over the next two years. Increased cross-training and employee development efforts will be needed to meet the challenge of increased retirements brought about by an aging workforce.

Partner with district and group leadership to support learning, development and workforce planning initiatives.

Five sessions of Personal Security Awareness Training were held in various locations. To date, 87 percent of employees have attended the class.

Microsoft Word and Excel classes were offered at the Gene desert facility for 12 employees located at this site. Two days of classes were taught by faculty of Corporate University, a consortium of community colleges in California.

STRATEGIC PRIORITY

EMPLOYEE DEVELOPMENT continued...

Seek diverse, high-quality talent, and establish partnerships to discover additional outreach opportunities that aid in staffing positions.

- During the past month Staffing has filled 26 positions and received 20 new requisitions. Staffing is currently recruiting for 124 positions.
- Continued preparation for the upcoming Apprenticeship recruitment that will take place in the third quarter.
- Finalized selection of the vendor for the new applicant tracking/recruitment system that will be implemented in 2017.

HR PRIORITY

ENSURE EFFECTIVE PEOPLE MANAGEMENT

Provide consultation, guidance, standards, policies, procedures and learning opportunities to ensure that employee experience is enhanced as they are appropriately managed, evaluated, engaged, motivated, developed, recognized and valued.

Ensure Metropolitan managers have the foundational knowledge and on-going support to effectively manage employees.

- Conducted Module 3 focused on Motivation and Engagement for the third cohort of 16 managers in Metropolitan Management University.
- Six managers attended an Institute for Management Studies full-day seminar on time management entitled Optimizing your Time.

CORE

PROVIDE EXCELLENT HR SERVICES

Human Resources provides a wide range of services and support from pre-hire to post-retirement care. To ensure our services add value and meet the needs of all employees, we will review and revise HR policies, procedures and practices as appropriate to continually improve service and better utilize technologies.

Administer all HR services with efficiency and a focus on customer service excellence, consistency, and flexibility.

- HR Benefits distributed a customer feedback survey to all employee and retiree participants in Metropolitan's Deferred Retirement Programs to assess experience and satisfaction with the services of TIAA Financial Services. Submission will be collected until January 17, 2017.
- Provided benefit and beneficiary confirmation statements to all employees reflecting changes made during Open Enrollment.

HUMAN RESOURCES

CORE

COMPLY WITH EMPLOYMENT LAWS AND REGULATIONS

Ensure all policies, programs and practices comply with ever-change laws and regulations.

Effectively administer all Human Resources policies, programs, and practices in compliance with applicable federal and state laws and Metropolitan Administrative Code, Operating Polices, and Memorandum of Understanding.

Workers' Compensation/Medical Screening:

- Conducted initial investigations on 11 injury incidents.
- Submitted 6 new claims to Metropolitan's workers' compensation claims administrator.
- Settlements were negotiated in 2 claims and finalized in 3 claims, and 10 claim files were closed.
- Arranged 6 medical evaluations (DMV, medical surveillance, hearing conservation, etc.).
- Coordinated random drug/alcohol tests at 1 facility.
- Addressed 3 accommodation issues.

INFORMATION TECHNOLOGY

CORE

INFORMATION TECHNOLOGY

Collaboratively work with customers to deliver information technology options, services, and solutions in the areas of enterprise and business applications, Engineering and Water System Operations applications, mobile/wireless computing, telecommunications, network services, information security, and personal computing.

Upgrade and refurbish Information Technology applications and infrastructure to ensure system reliability and performance levels that meet customer needs.

- Hiram Wadsworth Pump Plant—Staff is preparing the public works bidding package for final phase of the control and electrical protection systems at the Hiram Wadsworth Pumping Plant project (Construction and Commissioning).
- Automated Meter Reading System—Staff prepared a project plan for system-wide enterprise upgrade of the SCADA system.
- Data Center Architecture—Board appropriated \$2.16 million and authorized a storage system upgrade for Metropolitan's datacenter.
- Voice over Internet Protocol Technology—The project team completed the Soto Street facility pilot phone deployment. Staff continues to support post phone deployment.
- Network Communications Infrastructure—IT staff continued to deploy Cisco switches and routers at various Metropolitan facilities. Furthermore, completed the task of removing old network equipment and preparing equipment for salvage.

Deploy security technologies to properly balance and enhance Metropolitan's cyber security position.

Cyber Security Countermeasures—Board appropriated \$1.54 million and authorized implementation of Information Technology Cyber Security Upgrades.

REAL PROPERTY ACQUISITION, MANAGEMENT AND REVENUE ENHANCEMENT

Manage Metropolitan’s real property assets with a focus on enhancement of returns while ensuring that Metropolitan’s core operations are protected. Acquire real property for future operational business needs.

Seek incremental revenue-generating opportunities for real estate assets in traditional and alternative market segments such as telecommunications, solar/wind generation, agriculture, and sustainable technology and research.

- An entry permit was issued to Western Municipal Water District for placement of a temporary trailer and demolition of an existing non-operational pump house.
- Bouldin Island: A one-day consent letter was granted to Audobon CA, whose mission is to conserve and restore natural ecosystems focusing on birds, to conduct an annual shorebird survey. Results from the survey would benefit Metropolitan in future environmental reviews.
- A two-day consent letter was granted to Leica Geosystems Inc. to perform a mobile-mapping demonstration for Metropolitan’s Geodetics and Mapping Team.
- Real Property and Water Resource Management staff obtained Board authorization to execute four leases with distinct entities under certain prices and terms. Lease terms begin in January 2017.

Pursue development and improvement of the Diamond Valley Lake area, including the DVL Visitor Center and marina facilities, to support recreation, develop additional leasing and revenue opportunities for Metropolitan, and benefit the surrounding community.

The power poles for the DVL East Dam Electrical Upgrades have been installed and the project is scheduled for completion by July 2017.

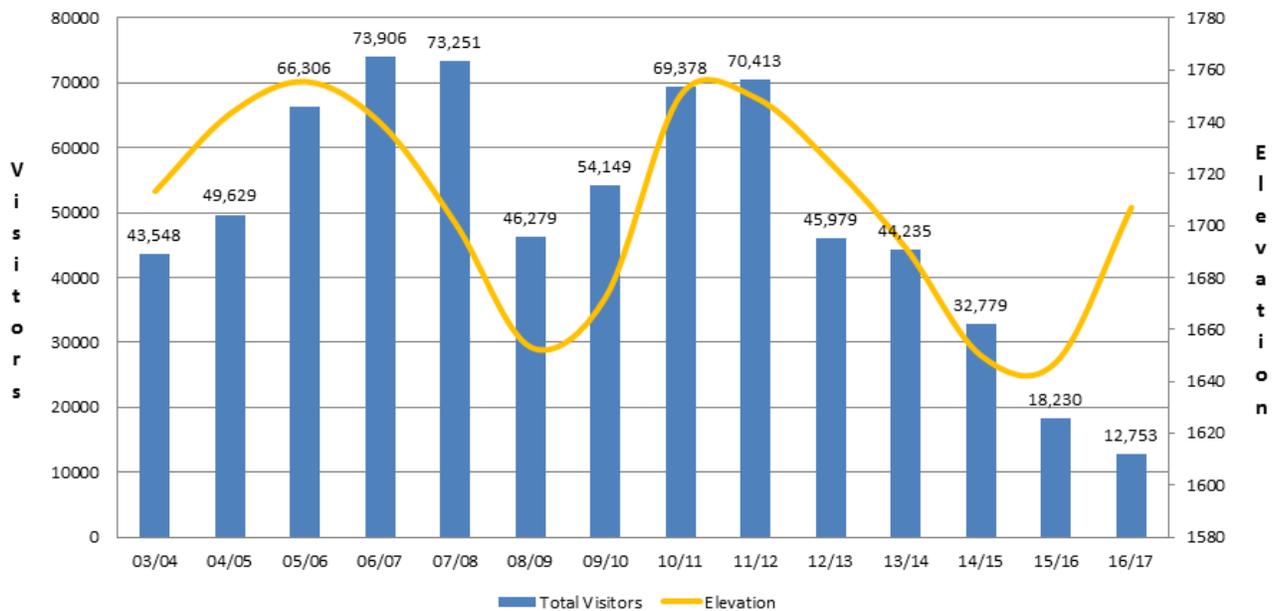
Foster staff training and development.

Staff attended the International Right of Way sponsored course Principles of Real Estate Law.

Efficiently maintain and operate Metropolitan’s Headquarters building and the Diamond Valley Lake Visitor Center.

Staff has installed two additional digital media boards in the rotunda of Metropolitan’s Headquarters building. The media boards will display Board and Committee activities and provide additional information to employees and public.

Diamond Valley Lake Visitor / Elevation Data



This graph shows visitor trends with respect to lake elevation on a fiscal year basis since the opening of the Marina. Note that in FY08/09 and FY15/16, access for private boat launching was suspended due to extremely low lake levels. Visitor attendance is expected to increase as the lake levels continue to rise.

*16/17 reflects Visitors thru December 2016 (16/17 projection is 35,000)

WATER RESOURCE MANAGEMENT

CORE

WATER SUPPLY

Develop and execute water resource strategies that achieve the long-term reliability envisioned in the Integrated Resources Plan (IRP). Efforts include the negotiation and management of supply, storage, and water use efficiency programs, administration of imported supply contracts, development of new water resource policy recommendations in support of the IRP, collaborative planning with member agencies, and forecasting resource and facility needs.

Ensure cost-effective and reliable imported water supplies.

IID / MWD Conservation Program Coordinating Committee Budget Approved - At the December 14 meeting, the IID / MWD Conservation Program Coordinating Committee approved the January 2017 budget. The Committee approved a total budget of \$12.98 million for 2017. The budget includes various components of the Program such as maintaining interceptor canals, gates, reservoirs, system automation equipment and 12-Hour Delivery runs. Of the \$12.98 million, Imperial Irrigation District is responsible for about \$5.4 million for their portion of the 12-Hour Deliveries made in 2016 and projected for 2017. Metropolitan's obligation for 2017 is approximately \$7.26 million after deducting for funds carried over from 2016. The Program will conserve 105,000 acre-feet of water.

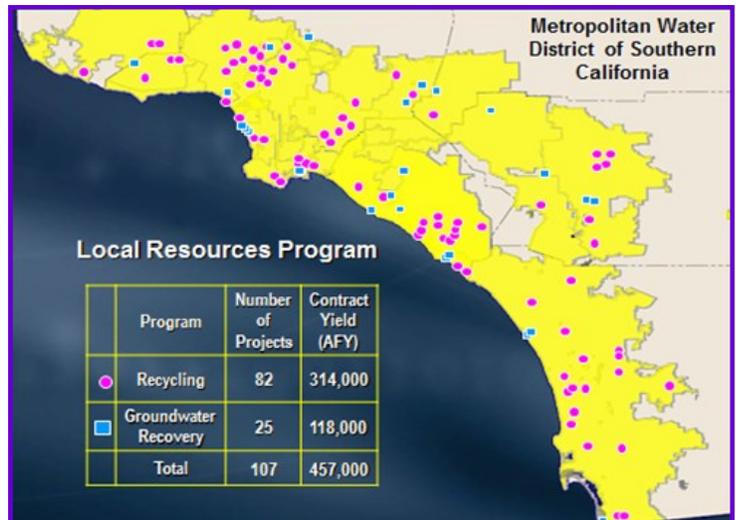
Participate and lead, where appropriate, in statewide and regional planning efforts.

Tribal Water Study - The Bureau of Reclamation-Colorado River Basin (Ten) Tribes Partnership Tribal Water Study report is expected to be published in 2017. The tribally focused effort is to address projected water supply and demand imbalances in the Colorado River Basin and to implement commitments identified in the Colorado River Basin Water Supply and Demand Study published in 2012 in which Metropolitan participated. If the Tribes proceed with rapid water development, slightly increased instances of Lake Mead shortage declarations would occur.

Implement the Local Resources Program.

GIS Workgroup - Staff hosted a GIS Workgroup comprised of member and retail agency GIS experts to update the existing regional recycled water GIS map. The data include wastewater treatment plants, recycled water treatment plants, recycled water distribution systems, and attributes such as capacity, treatment levels, etc.

Local Resource Program - Staff is working with member agencies to execute LRP agreements for 8 projects approved by the Board in November and December. These projects would collectively produce up to 25,000 acre-feet per year. Including these projects, Metropolitan has approved 107 projects under LRP.



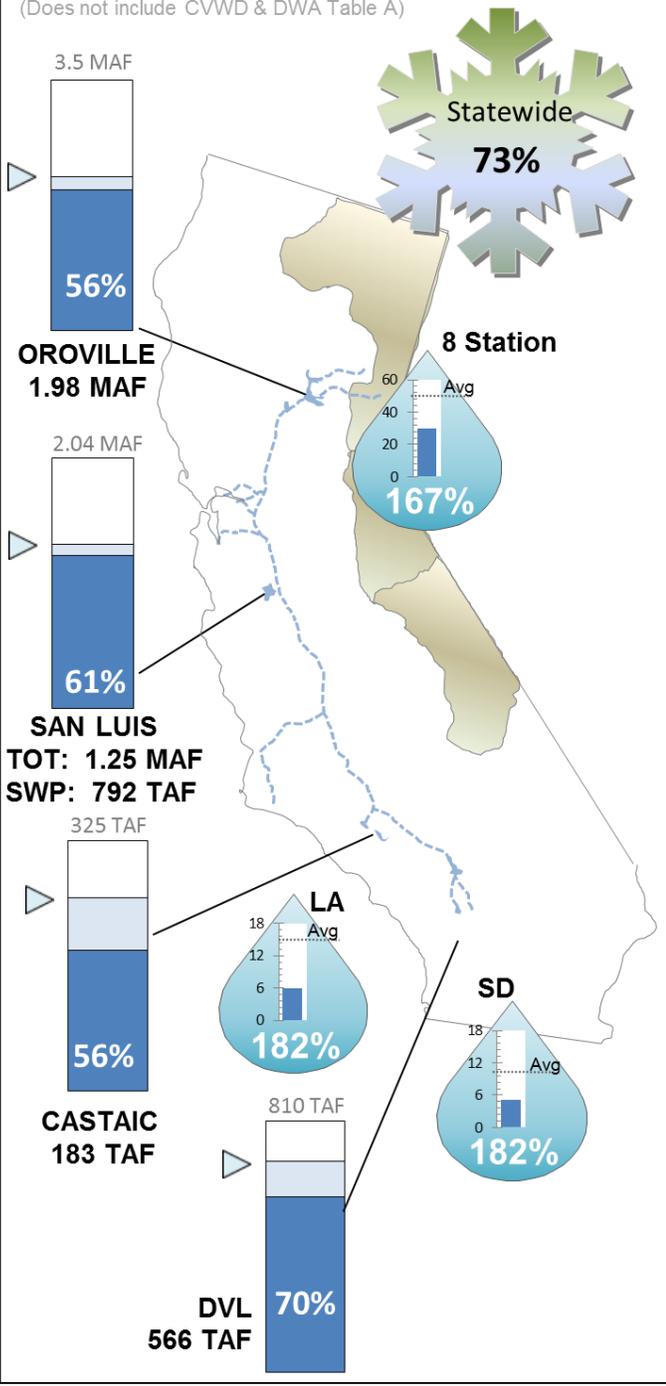
◆..... WATER SUPPLY CONDITIONS as of December 31, 2016◆

2016 SWP Allocation

1,146,900 AF

60% of Table A

(Does not include CVWD & DWA Table A)

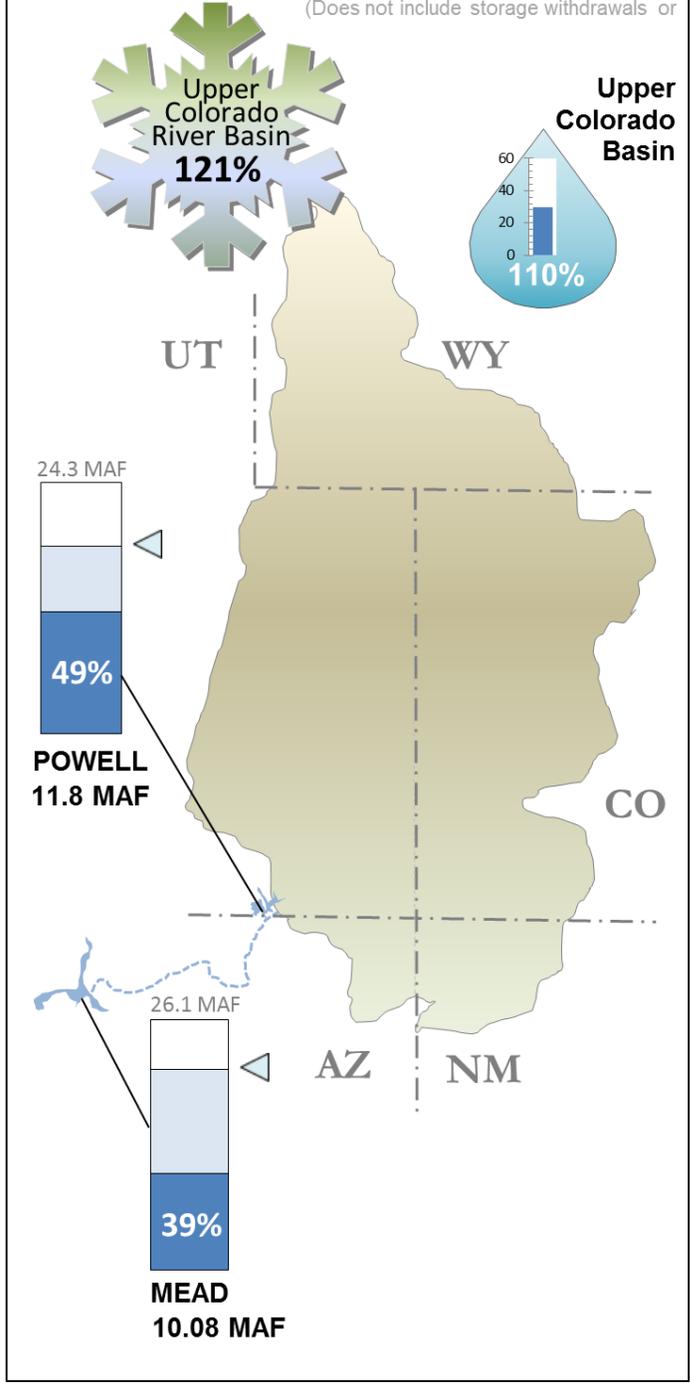


2016 Colorado River

865,000 AF

69% of full CRA

(Does not include storage withdrawals or



Regional Snowpack
 Rainfall to Date (in)
 Snow pack % Normal

Capacity
 Average EOM Storage
 Current Storage (% Capacity)

WATER SYSTEM OPERATIONS

STRATEGIC PRIORITY

DEVELOP WATER SUPPLIES AND MANAGE WATER RESERVES

Staff will work closely with the Board to manage Metropolitan's water supply reserves in the face of the unprecedented drought conditions in California and throughout the Southwest. If El Niño conditions create more supply, staff is prepared to maximize storage opportunities. The actions will include implementation of storage withdrawals, coordination of deliveries with the member agencies, close monitoring of drought conditions and possible allocation actions as part of the Water Surplus and Drought Management plan, and targeted outreach on conversation efforts. The past year's successful implementation of the Water Supply Allocation Plan will be reviewed and a determination will be made on what actions to take for FY2016/17.

Manage water reserves.

The targeted blends for the Weymouth, Diemer, and Skinner treatment plants remained at zero percent for the month of December. The use of SWP water accounted for 56 percent of Metropolitan's agency deliveries. In addition, 4,125 AF of SWP water was delivered into Diamond Valley Lake. Storage at Diamond Valley Lake increased to 565,000 AF or 69.8 percent full. Total dry-year storage is on track to increase by 350 TAF in 2016 and end the year at 1.3 MAF, which is in-line with Metropolitan's goal of increasing storage reserves, with an emphasis on surface storage.

STRATEGIC PRIORITY

EMPLOYEE DEVELOPMENT

The proposed budget calls for Metropolitan to cease its managed attrition that has shrunk Metropolitan from 2,400 full-time employee positions to a current workforce of approximately 1,750. Recruitment activity will be expanded to fully replace all retirements and actually add some positions to bring the work force to approximately 1,800 positions over the next two years. Increase employee cross-training and employee development efforts will be needed to meet the challenge of increased retirements brought about by an aging workforce.

Manage vacancies.

WSO filled 5 vacant positions in November 2016,

Prepare employees for new opportunities.

The Water System Operations Apprentice and Technical Training Programs develop and train personnel to become qualified electricians and mechanics responsible for maintaining Metropolitan's water treatment and distribution systems. In December, 13 mechanical and 8 electrical apprentices completed the program by completing their final proficiency assessments that demonstrate their knowledge, abilities, and competency in core areas of their trades. Collectively, the Class of 2016 apprentices had an overall GPA of 87 percent and has completed about 7,280 hours of training.

This month, electrical apprentices from the Classes of 2017 and 2018 concluded their respective periods of related instruction by completing written and practical final exams. The Class of 2017 apprentices studied installation of programmable logic controllers (PLCs). The Class of 2018 apprentices completed exercises on troubleshooting motor controls. Both classes will begin their next periods of related instruction in January 2017. *(see photo right)*

Class of 2018 electrical apprentices practicing electric motor control troubleshooting on simulators in preparation for an upcoming exam.



WATER SYSTEM OPERATIONS

CORE

PROVIDE RELIABLE WATER SUPPLIES

System Operations delivered approximately 130,000 acre-feet of water to meet member agency demands in December, which averaged approximately 4,190 AF per day. This was a decrease of 1,175 AF per day from November deliveries. December 2016 deliveries were about 15 percent lower than last December. Treated water deliveries for December were 49,250 AF, or 38 percent of total deliveries for the month. This was a decrease of 15,000 AF from November deliveries. In December, 80,650 AF of Colorado River water was pumped, which was an average of 2,600 AF per day. The CRA remained on a six-pump flow the entire month of December, and CRA diversions were approximately 990,000 AF for 2016. State Water Project imports averaged 2,515 AF per day for 78,000 AF for the month. This was the same level of SWP imports as November.

CORE

OPTIMIZE MAINTENANCE

The La Verne Shops refurbished the last of three influent drop gates for the Skinner plant. The existing tracks were corroded and needed replacement as the corrosion prevented the gate from sealing properly. The shops manufactured and installed new aluminum retainer tracks and blasted and coated the gate with corrosion resistant immersion coating.

Staff performed protection relay calibration and testing at the Corona, San Dimas, Greg Avenue, Red Mountain, Temescal, and Coyote Creek hydroelectric plants during December. Protection relays are critical devices that detect electrical faults in high-voltage systems and very rapidly shut off power in order to prevent damage to equipment or facilities. *(see photo right)*

Staff performing calibration adjustments on a protection relay.



Pump Unit #8 at Gene pumping plant was removed from service in mid-October for its annual maintenance. During the routine inspection of the unit, staff identified calcium buildup that was beginning to restrict the flow of cooling water to the motor coolers. Excessive wear was also found in some of the cooling water tubing requiring removal of the air coolers for cleaning and rebuilding. The unit is currently being repaired and scheduled to be returned to service before the end of January 2017. Additionally, staff replaced various electrical/motor instrumentation parts on Unit #8 as part of the breakdown and re-assembly of the unit. These routine repairs are critical for maintaining the CRA at an 8-pump flow readiness. *(see photo right)*



Gene pumping plant Unit #8 seal repairs.

CORE

OPTIMIZE MAINTENANCE continued...

Staff continued to focus on pipeline and treatment plant coating maintenance. The following coating work was performed during the month:

- Application of elastomeric roof coating to Building 24 at Lake Mathews (*see photo right*)
- Removal of graffiti from the air stacks on the Upper Feeder
- Lead coating removal from electrical pump motors at the Diemer plant for the installation of vibration transducers
- Coating of equipment at the Yorba Linda Power Plant as well as inspection/coating repairs to the DVL/Wadsworth Pump Plant main pump/generator Units #10, #11, and #12.



Application of elastomeric roof coating at Lake Mathews.

The Diamond Valley Lake Forebay was removed from service for inspection and maintenance. Staff removed silt and dried organic material from the forebay. Performance of this prevents this material from entering Lake Skinner and the Skinner plant. (*see photo right*)



Cleaning of Diamond Valley Lake Forebay

Staff completed the shutdown of a 24.7 mile portion of the Rialto Feeder from the beginning of the pipeline at DWR's Devil's Canyon Facility to the Indian Hill sectionalizing valve. The primary purpose of this shutdown was to complete an internal electromagnetic inspection of the 120-inch and 96-inch prestressed concrete cylinder concrete pipe. Other planned work on this shutdown included the replacement of two 24-inch butterfly valves on a bypass line around a large sectionalizing valve. Two 24-inch butterfly shutoff valves were also replaced for vacuum valve/air release valve assemblies at another location. Mortar lining inside the pipeline was also repaired in several locations. (*see photo right*)



Staff installing new 24-inch butterfly valves on the Rialto Feeder. These shutoff valves are used to isolate the vacuum valve/air release valve assemblies.

WATER SYSTEM OPERATIONS

CORE

OPTIMIZE MAINTENANCE continued....

Staff completed a shutdown on a five-mile portion of the Second Lower Feeder to allow for an internal visual and electromagnetic inspection of the pre-stressed concrete cylinder pipe. West Basin Municipal Water District's WB-37 is the only service connection on this portion of the pipeline. This service connection normally takes water from the Second Lower Feeder. Prior to the shutdown, the source of supply for WB-37 was switched to the Victoria/223rd Street Cross Feeder. This change allowed the member agency to continue to receive water during the seven-day outage. There were also a total of seven mortar repairs that were performed during this shutdown.

CORE

MANAGE THE POWER SYSTEM

System Operations continued to maximize power generation throughout the month. Metropolitan's hydroelectric plants generated an average of 23.4 megawatts per hour for 17,400 megawatt-hours in December. For the year, 193,000 megawatts of hydropower was generated for an average of 22 megawatts per hour.

On December 7, Metropolitan received the executed copy of the new Mead Substation Interconnection agreement from the Western Area Power Administration. The agreement provides for the continued interconnection of Metropolitan's 230 kV CRA electric transmission lines to Western's Mead Substation until September 30, 2067, when the new Hoover power contract is also scheduled to terminate..

On December 8, the Federal Energy Regulatory Commission accepted Metropolitan's agreement with the California Independent System Operator (CAISO) that established the CAISO as Metropolitan's Planning Coordinator for the CRA 230 kV electric transmission system. The agreement will become effective on December 26, 2016. The purpose of the Planning Coordinator function is to coordinate, integrate, and evaluate high voltage facilities and plans within the Planning Coordinator's area of responsibility and with neighboring Planning Coordinators.

CORE

IMPROVE SECURITY AND EMERGENCY RESPONSE

Staff participated in the quarterly meeting of the Southern California Critical Lifelines Work Group. This work group is comprised of representatives from various utilities in the Southern California area including Southern California Edison, AT&T, Verizon, Sempra Utilities, and several Metropolitan member agencies. The group also includes representatives from local emergency management agencies, the State Office of Emergency Services, the California Utilities Emergency Association, and the U.S. Department of Homeland Security. The purpose of this group is to bring Southern California utilities and emergency managers together before a disaster to collaborate and plan how to work together during an emergency.

CORE

PROTECT SOURCE WATER QUALITY

Metropolitan completed its 2015 update of the Colorado River Watershed Sanitary Survey and submitted the report to the State Water Resources Control Board's Division of Drinking Water. Completion of the report fulfills a regulatory requirement (California's Surface Water Treatment Rule) for public water systems to conduct a comprehensive sanitary survey of its watersheds every five years. The sanitary survey identifies potential sources of watershed contamination, summarizes source and treated water quality data, evaluates Metropolitan's treatment plants and compliance with drinking water regulations, and recommends watershed management activities that will protect and improve source water quality. The sanitary survey also serves as a guiding document for Metropolitan's source water protection program.

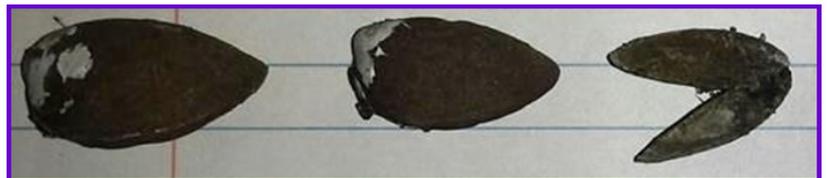
WATER SYSTEM OPERATIONS

CORE

PROTECT SOURCE WATER QUALITY continued...

On December 9, 2016, California's Department of Water Resources reported the discovery of six adult quagga mussels in the Angeles Tunnel that moves water between Pyramid Lake and Castaic Lake. The Angeles Tunnel was shut down and drained for inspection when the quagga mussels were found. This report marks the first detection of the invasive mussel within the State Water Project. *(see photos below)*

In the nine years since the discovery of quaggas in the Colorado River system, California's Department of Water Resources and Metropolitan have regularly monitored State Water Project facilities for adult mussels and the larval stages of the mussel (veligers). Though no veligers have been found to date, the detection of adult mussels in the Angeles Tunnel means that both Pyramid Lake and Castaic Lake are presumed to be infested. Staff coordinated with DWR to conduct additional quagga monitoring during December. Actions included a detailed inspection of the Angeles Tunnel, visual inspections of various sites in DWR's system, and sampling for veligers in SWP facilities that directly impact Metropolitan. Though the East Branch of the SWP, including Lake Silverwood, is not presumed to be infested at this time, increased monitoring of these facilities is now warranted.



Six adult mussels discovered in Angeles Tunnel. (above)
Adult quagga mussel approximately 1-inch long with an estimated age of 1-2 years. (left)
(Photo credit: Tanya Veldhuizen, DWR)

CORE

PROVIDE TECHNICAL SUPPORT TO MEMBER AGENCIES

Metropolitan hosted a quarterly meeting with the State Water Resources Control Board, Division of Drinking Water in December at the Water Quality Laboratory in La Verne. Key discussion topics included Metropolitan's capital improvement projects and related funding, Metropolitan's 2016/2017 planned shutdown activities, Colorado River Source Water Protection update, and various pending regulations.

Service Connection EM-25 is a new, 100 cubic feet per second groundwater replenishment service connection requested by the Eastern Municipal Water District. Staff is developing a conceptual design for the proposed connection on the Inland Feeder near the City of Hemet.

Staff is working on a conceptual design report for a new flow control and metering structure on San Diego Pipeline No. 4. The new structure will help improve the metering and control of lower flows on Pipeline 4 that serves several service connections in Riverside and San Diego Counties.

WATER SYSTEM OPERATIONS

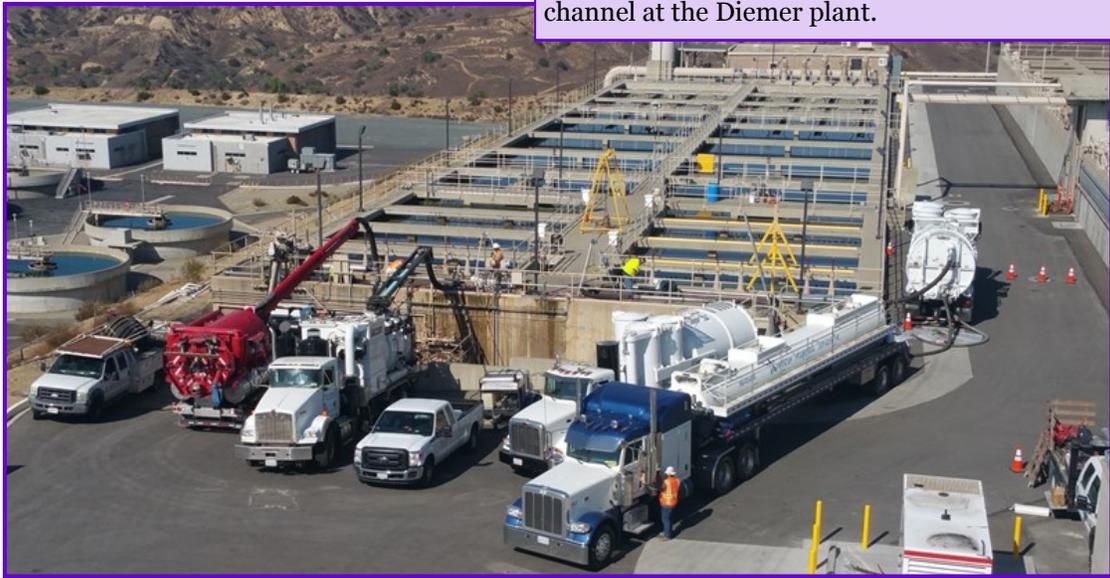
CORE

OPTIMIZE WATER TREATMENT AND DISTRIBUTION

SWP target blends at the Weymouth, Diemer, and Skinner plants were zero percent for December 2016. Flow-weighted running annual averages for total dissolved solids from October 2015 through September 2016 were 631, 627, and 628 mg/L for Weymouth, Diemer, and Skinner plants, respectively.

The Diemer plant shut down its wash water reclamation plant to remove accumulated material from the shared influent channel. This routine maintenance is performed to ensure the reliable operation of the wash water reclamation plant. *(see photo below)*

Cleaning out the wash water reclamation plant influent channel at the Diemer plant.



The Diemer plant completed the 14-day test of the newly refurbished equipment in Basin No. 4. All mechanical equipment was replaced as part of the ongoing Basin Rehabilitation Project. Basin No. 4 has returned to normal operational service and Basins 1 through 3 are in the process of refurbishment. *(see photo below)*



Diemer Basin No. 4 back in operation after refurbishment.

WATER SYSTEM OPERATIONS

CORE

OPTIMIZE WATER TREATMENT AND DISTRIBUTION

The Weymouth plant domestic water pumps have pressure relief valves to prevent water hammer from damaging equipment and piping within the La Verne Facility. The valves were successfully serviced and tested to verify proper operation.

Staff diagnosed a gearbox drive bearing failure on the flocculator paddles at the Weymouth plant. A replacement spare was procured and the failed unit was removed and replaced by staff. The failed gearbox will be torn down, the root cause of the failure investigated and the unit will be rebuilt. *(see photo right)*

Weymouth sedimentation basin flocculator gearbox drive being removed.



Staff disassembled the flocculators in the washwater reclamation plant at the Jensen plant, completing the first phase of the improvement project to replace failed bearings and hardware. Replacement shafts are being fabricated by staff and new bearings are being procured to replace equipment after 22 years of operation. *(see photo left below of flocculator paddles being removed)*



Staff replaced the aging oxygen sensor system at the Wadsworth pumping plant that helps to ensure a safe environment for staff at the plant. This system was part of the original construction of DVL in the late 1990's and has recently been prone to frequent maintenance and false alarms. The integrated sensors and control panel were replaced with new sensors, and control is now managed through up-to-date PLCs which report to the Supervisory Control and Data Acquisition (SCADA) system. *(see photo below of installed new oxygen sensor equipment)*



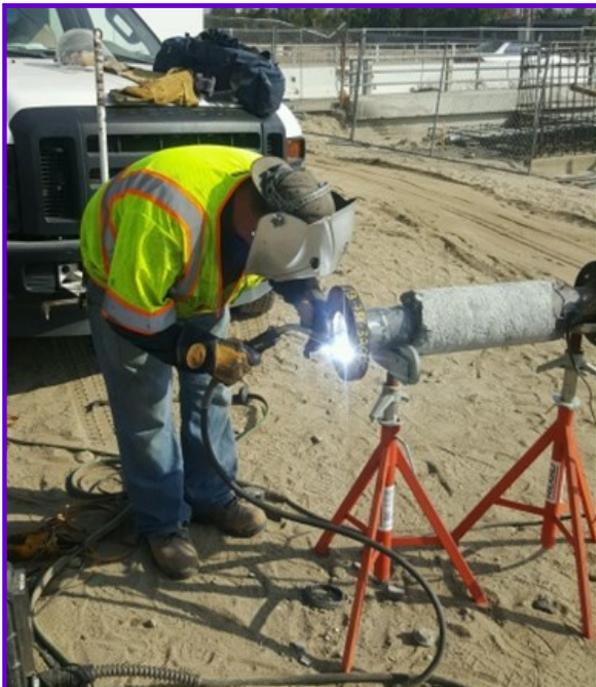
CORE

OPTIMIZE WATER TREATMENT AND DISTRIBUTION

Staff worked to identify a means of improving response time to needed changes in chemical mixing at the Mills plant, particularly during periods of low flow. Staff installed an additional water quality analyzer to measure ammonia at the end of the treatment process, which results in receiving these measurements in a more timely manner, and also allows for quicker adjustments to water quality leaving the plant, if needed. With the installation of this analyzer, response time for receiving readings improved by over seven minutes. The improvements to the water quality readings were achieved with minimal maintenance and costs, and will benefit plant operations by having more frequent data available for operational control. There was no impact to treated water deliveries during the installation. *(see photo right)*



Staff installing a water quality analyzer for ammonia at the Mills plant.



The City of Los Angeles is widening Laurel Canyon Boulevard between Tonopah and Jerome Streets, over a portion of the East Valley Feeder. Staff is working closely with the City of Los Angeles and other contractors to relocate all necessary equipment behind the new curb and gutter to accommodate the street widening. After completion, Metropolitan's equipment will be protected by protective bollards and concrete encasements. *(see photo left)*

Staff fabricating new carbon steel connection spools for the upcoming relocation of the ventilation stack and air release/vacuum valve enclosure.

WATER SYSTEM OPERATIONS

CORE

PREPARE FOR FUTURE LEGISLATION AND REGULATION

On November 18, the Federal Occupational Safety and Health Administration issued its final rule on Walking Working Surfaces (i.e., slips, trips, falls, and fall protection) in the Federal Register. Cal/OSHA will have six months to adopt an equally effective state rule. The federal rule is slated to take effect on January 17, 2017. Staff has reviewed the rule and found that Metropolitan's existing Fall Protection Program is already in compliance.

On November 29, EPA announced the first ten chemicals that it will evaluate for potential risks to human health and the environment under the provisions of the revised Toxic Substance Control Act (TSCA). Asbestos is among the first ten chemicals to be evaluated under the multi-year process established under TSCA. The list also contains some solvents (e.g., carbon tetrachloride, methylene chloride, tetrachloroethylene, trichloroethylene). Asbestos is still permitted in some materials (e.g., mastic) and the other chemicals may be present in other materials (e.g., cleaning fluids). EPA is required to complete risk evaluations for these chemicals within three years. This evaluation will determine whether the chemicals present an unreasonable risk to humans and the environment. If so, EPA must come up with measures to mitigate that risk, potentially resulting in more stringent regulations (e.g., use restrictions). Staff will track the progress of this effort and its impacts on Metropolitan.

CORE

ENSURE WATER QUALITY COMPLIANCE, WORKER SAFETY, AND ENVIRONMENTAL PROTECTION

Metropolitan complied with all water quality regulations and primary drinking water standards during the month of December 2016.

Staff refurbished the equipment room at the Water Quality Laboratory and replaced the water softener and reagent water systems.

Useful information:

AF = acre-foot, the volume of water to cover an acre of land, one-foot deep.

Approximately 326,000 gallons of water, serves annual needs of two typical California families.

TAF=thousand acre-feet. **MAF**=million acre-feet.

| Storage | As of 12/31/16 | % of Capacity |
|--------------|----------------|---------------|
| DVL | 565,365 AF | 70 |
| Lake Mathews | 134,073 AF | 74 |
| Lake Skinner | 36,513 AF | 83 |

Metropolitan's Mission is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

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