

**Board Report**

File #: 2015-0684, **File Type:** Informational Report**Agenda Number:** 34.

**SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE
JUNE 18, 2015****SUBJECT: UPDATE ON AGENCY-WIDE WATER REDUCTION EFFORTS****ACTION: RECEIVE AND FILE****RECOMMENDATION**RECEIVE AND FILE update on **bus/rail car washing and facility water reduction efforts.****ISSUE**

On July 15, 2014, the State Water Resources Control Board (Water Board) approved an emergency regulation to increase water conservation from urban outdoor water use. In light of the ongoing drought and the resulting state and local conservation measures, Operations identified and developed a pilot program to reduce water consumption. On September 18, 2014, the System, Safety, Security, and Operations Committee received an oral report from Operations staff regarding an Operations Water Savings Pilot Program. The previous report outlined the initial and projected savings resulting from a bus wash reduction pilot at Division 8, a bus operating facility in Chatsworth. This report provides an update on that work, including analysis performed on rail car washing efforts and the start of a facilities reduction in water usage.

Per Governor Brown's Executive Order issued on April 1, 2015, the Water Board shall impose mandatory restrictions to achieve a statewide 25 percent reduction in potable water use. As a result, Operations is evaluating its ongoing water conservation programs, with the intention to identify and implement new efforts to ensure compliance with these regulations and to strive for continual improvement in agency-wide resource use.

BACKGROUND

Metro has been on the forefront of water reduction efforts for more than a decade with the implementation of water reduction efforts in its construction activities. Since 2003, Metro has been implementing many strategies across the agency to reduce water use in all of our operations, specifically the Metro Orange Line and its extension. In 2009, a Water Use and Conservation Policy was adopted by the agency to ensure the most cost-effective and efficient use of potable water resources at all of our facilities and operations. The policy is also very clear that in instances where it is necessary to protect public safety, human health, and the environment, our agency may deviate

from water conservation measures.

To implement the Policy, our agency has also developed a sweeping Water Conservation Plan in 2010; and is currently implementing many agency-wide strategies to reduce water consumption and cost. Once fully implemented, the Water Conservation Plan strategies are designed to reduce Metro's water consumption by more than 200 million gallons per year. The agency continues to support water conservation efforts at both state and local levels, especially considering the current severe drought conditions. Staff has been cooperatively working on several pilot efforts across the agency.

DISCUSSION

The following paragraphs outline additional information generated since staff's last update focused on bus and rail car washing activities.

Bus Operations

In the fall of 2014, Metro's Maintenance Department implemented a water conservation pilot program to accrue savings from the agency's largest water consumers: bus operating divisions. Historically, approximately three quarters of the agency's water use is from bus divisions, and nearly three quarters of the water consumed is a result of bus washing activities. In order to curb consumption, the pilot program converted the division from a full fleet daily wash to an odd/even bus washing schedule.

As a result of this program, Division 8 witnessed a dramatic reduction in its water use in the last several months of 2014. In comparing the total water usage between 2013 and 2014, Division 8 realized a decrease in over 2.5 million gallons, and approximately \$7,000 in water costs. These savings equated to a 37 percent reduction in water use and a 15 percent reduction in water costs from 2013 to 2014. After a successful implementation of the pilot at Division 8, Maintenance expanded the program across all bus operating divisions in October 2014. In comparing the 2013 and 2014 water data, Metro realized over 33 million gallons of water savings and associated cost savings of more than \$63,000, which equated to nearly 30 percent water savings and 10 percent cost savings in just one quarter of the program's implementation.

As the program has continued into 2015, the bus facilities have accrued average monthly savings of 17 percent in water use and 8 percent in water costs. In total, the Bus Operating Divisions have seen a savings of over 38 million gallons of water and approximately \$85,000 since October 2014. However, both the costs and consumption across the divisions vary extensively due to fleet size, adherence to the program, and the division's geographic location and subsequent water provider. Due to the implementation of reducing the frequency of bus washes, there was a degradation of vehicle exterior appearance and cleanliness.

The Los Angeles Department of Water and Power (LADWP) and Metro have collaborated on

identifying cost-saving opportunities, future pilot efforts to include water-reducing strategies, and increased use of recycled water in our facilities. Our agency has been seeing an incremental increase in water rates in the last fiscal year and projects to do so in the foreseeable future. As the cost of water increases over time, staff will also continually work with LADWP in ensuring LA Metro's water cost will not significantly increase to unsustainable cost levels. Currently, LADWP, who provided approximately 84 percent of all water to Metro in 2014, had an average water cost increase from \$6.41 to \$6.76 per 1,000 gallons from 2013 to 2014. Other providers combined offered a substantially higher water cost at \$9.48 per 1,000 gallons, an increase from 2013 when the water cost was \$8.01 per 1,000 gallons. As a result of increasing water costs, there is a significant financial incentive for Metro to continue to advocate for and monitor these water conservation efforts. Moreover, Metro has a Blue Ribbon Collaborative already in place since 2011 to discuss these issues with the large utilities.

Rail Operations

Upon initiation of all Metro bus facilities into the water reduction program, the Maintenance department identified Division 22, the Green Line Yard, as the pilot location for a rail car wash reduction schedule. Beginning in March 2015, Division 22 implemented an every other day wash schedule, with approximately 10 of the 29 revenue cars washed per day.

On a monthly basis, Division 22 is anticipating savings of more than 6,000 gallons, which has been exceeded in the months of March and April as a result of additional water savings from the completion of construction activities for the division's new storeroom. On an annual basis, Division 22 has the potential to save roughly 75,000 gallons of water from reducing its wash schedule to every other day, which constitutes approximately 15 percent of the facility's total water use.

With a successful initiation of the reduced car wash schedule at Division 22, Rail Transportation and the Maintenance department are working together to expand the program to the other three rail divisions. Thus far, the program has been expanded to Division 21, the Gold Line Yard, and the departments are customizing programs for Division 11, the Blue Line Yard, and Division 20, the Red Line Yard, in order to accommodate their fleet size and the required yard movements to wash the train cars in an effective and attainable program. While the car wash constitutes approximately one-third of a rail facility's water use, a full expansion of the pilot program has the potential to accrue approximately 15 percent savings in water use and up to 18 percent in cost savings on an annual basis.

Facilities Maintenance

Metro has required California native or drought-tolerant plants in its construction projects since 2003. Staff has incorporated many of these strategies into its construction and design, the most prominent of which has been the Metro Orange Line and the Exposition Light Rail Line. Many of our new buildings are being constructed and existing buildings are being retrofitted to follow Leadership in

Energy and Environmental Design (LEED) guidelines that include water reduction features in both building operations and landscaping. Metro staff has also already been working with DWP and the Metropolitan Water District (MWD) in identifying water conservation strategies, rebates, and savings by design strategies that our agency can apply in all of our public-facing properties. Cost-benefit analysis is always included in many new initiatives to identify future pilot efforts.

While Metro has dedicated resources to ensuring that specifications for public-facing property includes drought tolerant plants, opportunities have been identified to reduce more water-intensive landscaping at Metro's current operating locations. In light of the new rebate incentives offered through the Municipal Water District (MWD) and other local entities, Metro is initiating a pilot program at Division 15, a bus operating division in Sun Valley, to take advantage of this rebate program and remove existing grass on the exterior of the property. The project team will conduct a cost-benefit analysis to determine the value of expanding the program to other Metro locations upon completion of the pilot effort.

Metro landscape and irrigation contractors are required to comply with all State and local water conservation ordinances. In light of Governor Brown's recent mandatory water reduction Executive order, municipalities have updated their water conservation ordinances reducing the days, hours, and irrigation times.

Metro landscape and irrigation contractors responded to these updates by going through more than 300 of Metro owned facilities throughout LA County (stations, bus and rail divisions, terminals, TPSS, locations, etc.) checking the irrigation controllers, zones, and irrigation cycles to ensure compliance with the various ordinances of the governing jurisdictions. These inspections are on-going as ordinances continue to be modified and updated. Currently, Metro remains to be in compliance with the City of LA ordinance in watering three (3) times per week. Outside City of LA jurisdiction, Metro reduced the irrigation schedule from three (3) times per week to twice a week, in accordance with most municipalities ordinances that have been updated to twice a week watering anywhere between the hours of 5:00p.m. to 9:00a.m. The days and hours vary from one city to another.

NEXT STEPS

The wash reduction program is continuing to expand for both rail operations and Metro's contracted bus service. The three contracted bus operating divisions - South Region (Division 97), East Region (Division 95), and North Region (Division 98) - will be initiating an every other day wash schedule beginning in June 2015.

Operations is actively coordinating with both internal and external stakeholders to identify, implement and monitor water conservation measures across the agency. These efforts will include additional agency-wide analysis of current water consumption, identification of funding opportunities to implement water efficiency upgrades, and enhanced communication and awareness for Metro Operations staff on their location's water consumption and collaboration on identifying opportunities for improvement.

Staff is continually looking for opportunities to reduce the use of potable water and cost to use this limited resource. Staff will continue to implement the Water Action Plan and report back on future successes in the annual Energy and Resource Report, including the implementation of pilot efforts, as necessary.

ATTACHMENTS

Attachment A - Water Use Presentation

Prepared by: Carley Markovitz, Transportation Planner II (213)922-5770
Cris Liban, DEO, Environmental Compliance Services (213)922-2471

Questions: Christopher Reyes, Senior Administrative Analyst, Operations
(213)922-4808

Reviewed by: Bryan Pennington, Executive Director, Engineering and Construction
Robert Holland, Interim Chief Operations Officer



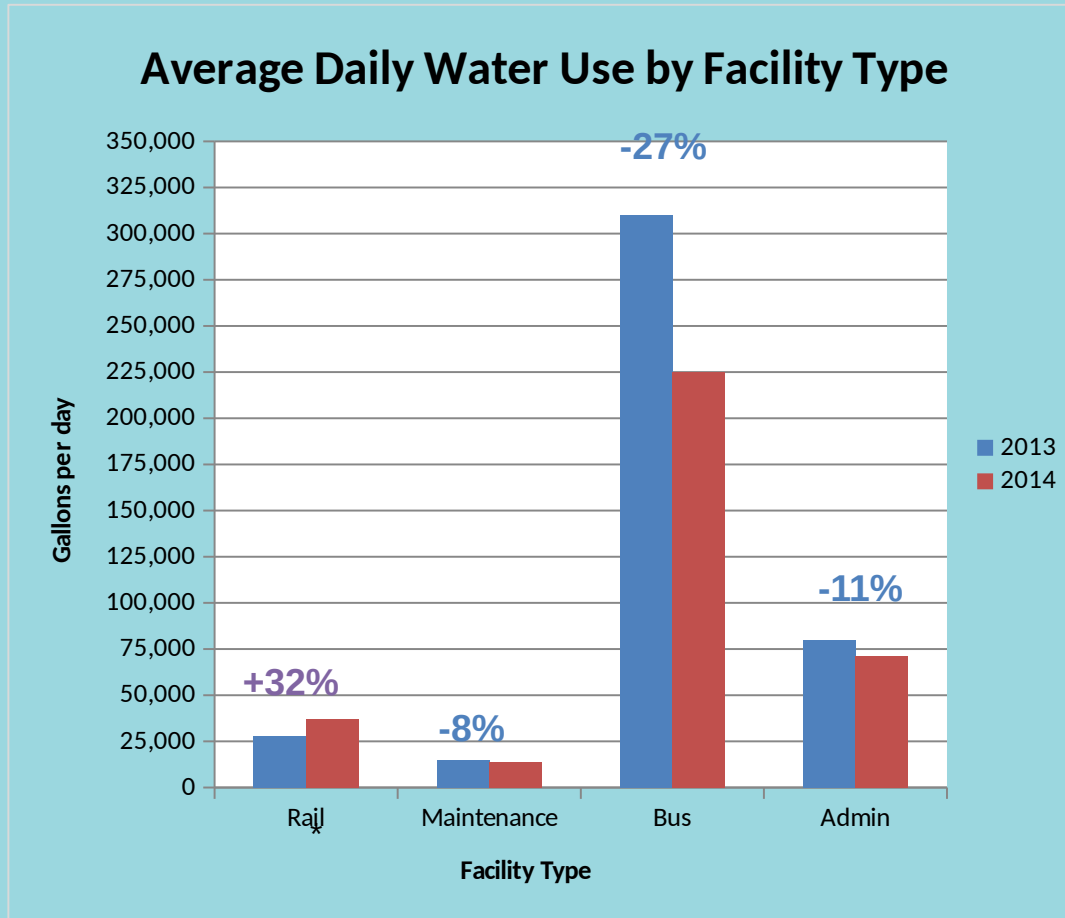
Phillip A. Washington
Chief Executive Officer

Progress Update: Water Reduction Program

June 2015



Agency-Wide Consumption Changes (2013-2014)

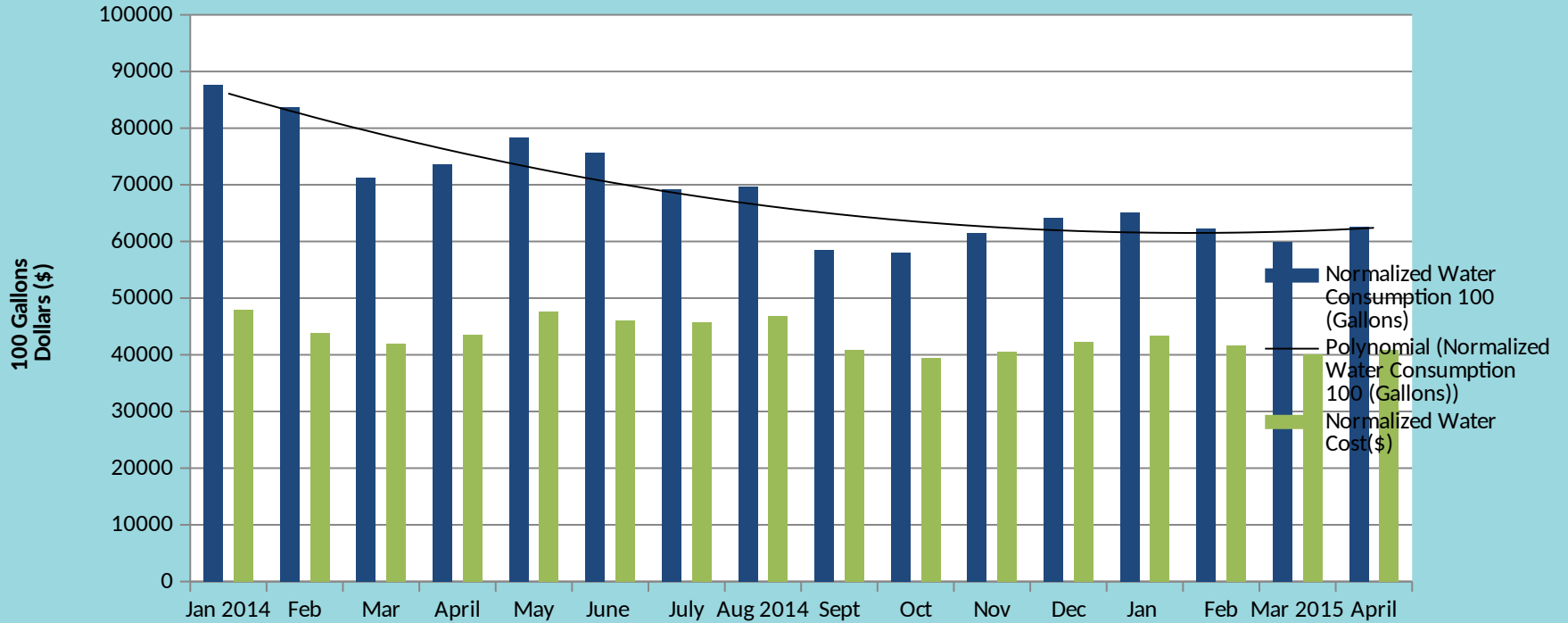


* Rail's water usage increased due to an improved cleanliness initiative beginning in July 2014, positively impacting the interior and exterior cleanliness of the Rail cars.



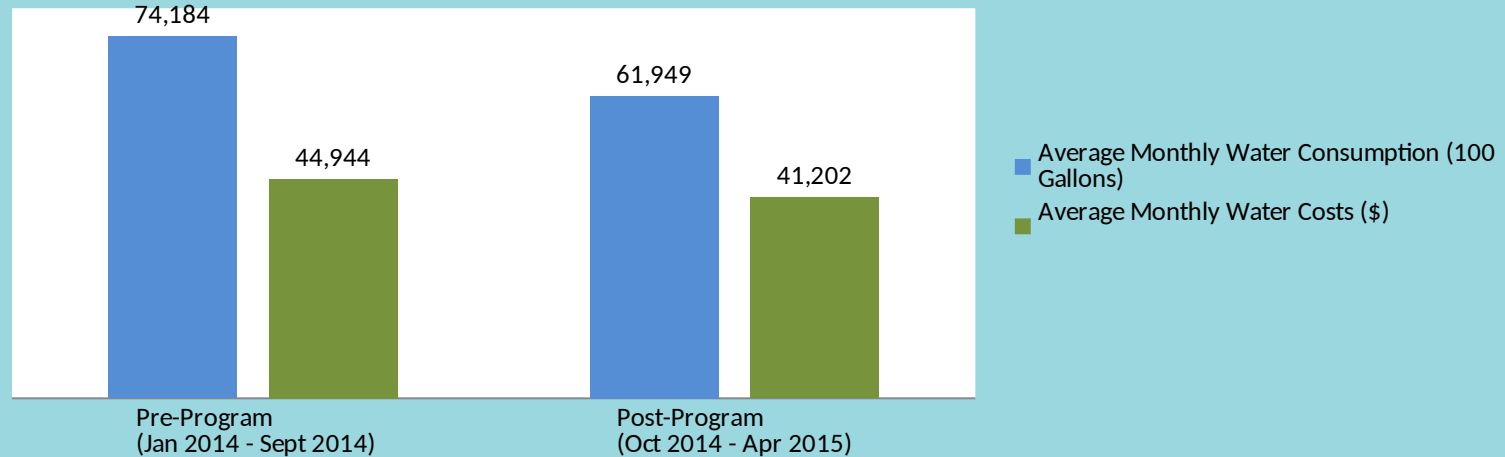
Bus-Wide Water Consumption

Aggregate Division Water Consumption and Cost



Bus Wash Program Status

Pre vs. Post Program: Average Monthly Cost and Use



- > Average Monthly Water Savings: 16%
- > Average Monthly Cost Savings: 8%

Total Estimated Savings:

- > Water Savings: 38 million gallons
- > Cost Savings: \$85,000



Pre vs. Post Program Results by Division

Division	Average Monthly Water Consumption (100 Gallons)			Average Monthly Water Costs (\$)		
	Pre-Program	Post-Program	% Average Savings*	Pre-Program	Post-Program	% Average Savings^
Division 1	5,729	5,008	13%	\$3,811	\$3,344	12%
Division 2	6,128	5,099	17%	\$4,110	\$3,408	17%
Division 3	3,283	3,094	6%	\$2,168	\$2,076	4%
Division 5	6,798	7,089	-4%	\$4,719	\$5,200	-10%
Division 6	2,160	2,001	7%	\$1,436	\$1,330	7%
Division 7	9,297	8,803	5%	\$9,605	\$9,281	3%
Division 8	7,594	2,482	67%	\$4,907	\$1,697	65%
Division 9	17,239	14,870	14%	\$3,487	\$5,853	-68%
Division 10	9,380	6,636	29%	\$6,245	\$4,455	29%
Division 15	7,414	7,074	5%	\$4,918	\$4,720	4%
Division 18	5,858	5,172	12%	\$2,842	\$2,702	5%

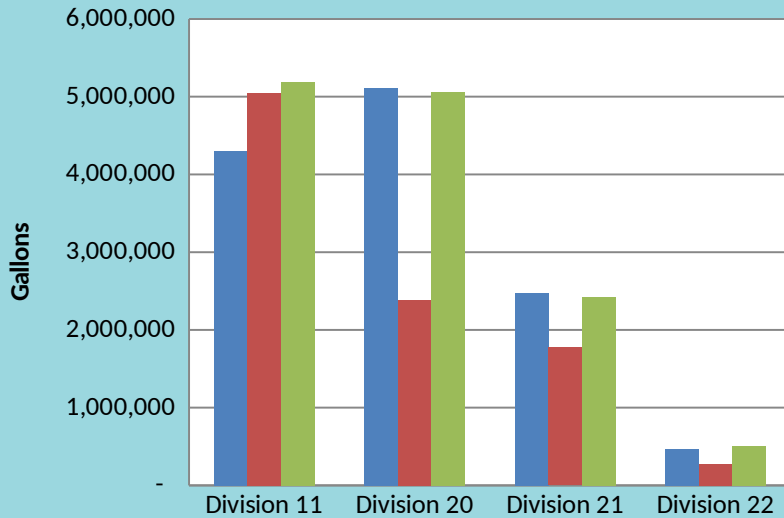
* = In order to maintain an acceptable level of cleanliness, certain locations have exercised discretion in washing more frequently to ensure a high level of service to patrons.

^ = Varying levels of cost savings and instances of cost increases are a result not only of consumption, but also the increasing utility rates by both small and large water providers to Metro.

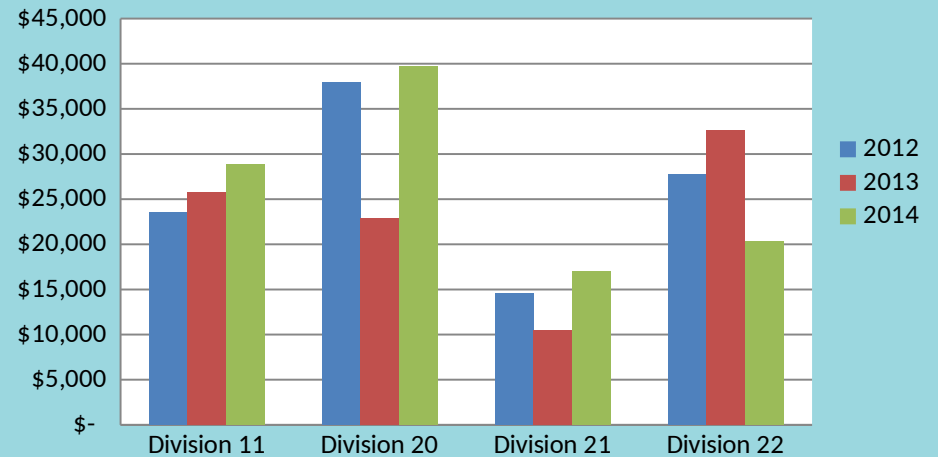


Rail Water Reduction Efforts

Rail Facility Water Consumption



Rail Facility Water Costs



Rail Wash Reduction Program: Potential

Savings

(Based on 2014 Consumption)

	Before Pilot	With Pilot	Annual Savings Agency-Wide	Percentage Savings Agency-Wide
Water Consumption (Gallons): Rail Facilities	13,176,324	11,199,875	1,976,449	15-18%
Water Expenditures (\$): Rail Facilities	\$105,923	\$90,035	\$15,888	

