



Office of the City Manager

INFORMATION CALENDAR

April 28, 2015

To: Honorable Mayor and Members of the City Council

From:  Christine Daniel, City Manager

Submitted by: Scott Ferris, Director, Parks, Recreation and Waterfront
Eric Angstadt, Director, Planning and Development
Andrew Clough, Director, Public Works

Subject: Update: City Water Conservation and Use Reduction

SUMMARY

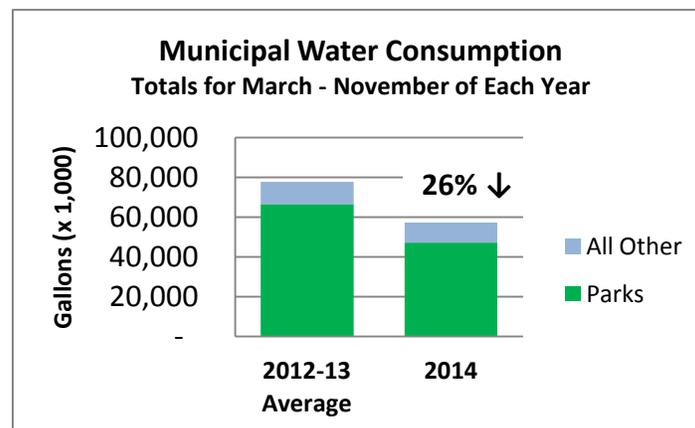
This report provides an update on municipal water use reduction, and an update on new water restrictions following Governor Brown's historic statewide mandate to reduce water.

In February 2014, the City committed to reduce municipal water consumption by 10% in 2014. In September 2014, staff provided a preliminary estimate of a 27% reduction in municipal water consumption for the months of April, May, and June 2014, compared to averages in calendar years 2012 and 2013 for the same months. This report updates those figures, finding that 2014 water use has fallen by 26% compared to averages in 2012 and 2013; and provides an update to the City's water reduction strategy. Staff will provide another update to Council on the City's water conservation efforts in six months.

CURRENT SITUATION AND ITS EFFECTS

Municipal Water Use Reductions in 2014

The City began its 2014 drought response in March 2014. Since that time, municipal water consumption has fallen by approximately 26% compared to same periods in 2012 and 2013.¹



¹ These amounts represent the average of 2012 and 2013 water consumption for March through November. At this time, we have complete data through November 2014.

While this performance far exceeded the City's policy target of a 10% reduction, it continues to be uncertain if this can be sustained. A closer look at the drivers of reduced water consumption explains why:

- **Reduced irrigation:** City staff has shortened watering times by approximately 10% across the City since the March 2014 drought response efforts began. While most turf can sustain this level of reduction, it does accelerate the need for costly maintenance. Over the past several months, City staff re-seeded sports fields at Grove, Ohlone, Codornices and San Pablo Parks. These repairs occurred earlier than would have otherwise been needed due to stressed lawn that was more susceptible to damage. Moreover, each field must be watered regularly to ensure the seeding is successful, so water consumption at these sites is anticipated to increase during this period.

In addition, City staff continues to recalibrate irrigation clocks and watering strategies, so that we can ensure the turf is not stressed beyond repair. These adjustments are increasingly important as the drought continues and compounds its impact on the turf.

- **Leak repairs:** City staff has responded quickly to leaks, aided by community reports and EBMUD-provided water budgets that flag anomalies in the data. Staff's strategy of immediately shutting down the water at the site prevents water waste and reduces the City's water consumption. However, it raises other costs in terms of the need for manual watering and the expense of repairing the infrastructure or renovating the landscape. Additionally, when the systems are repaired, water consumption will resume.
- **One-time improvements:** Improvements like the new water-efficient cooling tower at 1947 Center Street yield substantial reductions in water consumption in buildings, but are often costly and similar resources may not be available each year.

Update on Water Conservation Policy Actions

On April 1, 2015, Governor Brown announced the [first-ever statewide mandatory water reductions](#).² The Executive Order directed the State Water Resources Control Board (Water Board) to impose restrictions to achieve a statewide 25% reduction in potable urban water usage. The Order stated that restrictions should require areas with high per capita use to achieve proportionally greater reductions than those with low use.

On April 7, 2015, the Water Board released its [proposed regulatory framework](#), indicating that the East Bay Municipal Utility District (EBMUD) – the City of Berkeley's water supplier – would be required to meet a 20% conservation standard.

On April 14, 2015, [EBMUD declared a Stage 4 critical drought](#) – the highest level of severity – and set a District-wide goal to reduce water by 20% compared to 2013. To meet this goal, EBMUD issued a number of mandatory water restrictions, which include a strong focus on reducing outdoor watering, (see Attachment 1).

² See Related Links on last page for URL addresses to these reports.

The City had already adopted many of these practices, for example limiting irrigation to twice per week before 9am or after 6pm. However, one conservation measure that had not been taken – until now, as required – is to stop watering turf on public street medians. Per EBMUD’s requirement, Staff has stopped irrigating turf medians throughout the City.

Staff is analyzing how to further comply with the April 14th EBMUD requirements, in part through consultation with EBMUD staff.

City Water Conversation Strategy

Going forward, the City will continue to achieve permanent reductions with investments in water conservation equipment, leak repair, improved irrigation systems, and conversion to more drought-tolerant landscaping. An interdepartmental Water Conservation Response Team from Parks, Recreation & Waterfront, Planning and Development (Office of Energy & Sustainable Development), and Public Works will continue to pursue a 2-phase approach: 1) Curtailing short-term water consumption through measures including rapid leak response and reduced irrigation, while maintaining priority landscapes; and 2) Planning capital investments for permanent reductions, including improved efficiency of irrigation systems and buildings, and conversion of certain landscapes to more drought-tolerant cover. This will be complemented by a campaign to raise staff awareness about water efficiency.

Staff will provide an update to Council on the City’s water conversation efforts and strategy within the next six months.

BACKGROUND

Recent reports to Council on the City’s Drought Response

A February 25, 2014 [report from Councilmembers](#) referred actions to the Public Works and Community Environmental Advisory Commissions, and to the City Manager, to explore possible voluntary and/or mandatory water conservation measures, and report on the measures proposed and already undertaken by the City to address the drought.

On February 28, 2014, the [City Manager issued a memo](#) on the City’s commitment to reduce water consumption by 10% in its operations this year. This commitment was further announced in a [March press release](#).

On July 8, 2014, the [Public Works and Community Advisory Commissions issued a joint report](#) recommending a long-term water conservation plan. The plan’s goals would be to reduce water consumption by 20% below the average of 2012 and 2013 levels within a year, move towards EBMUD WaterSmart certification, and replace lawns not used for recreation with mulch until other measures could be taken. The [companion staff report](#) proposed to review and analyze the Commissions’ recommendations.

On September 16, 2014, the [City Manager provided an update on the City’s water reduction](#) performance, the measures proposed and already undertaken to address the drought, and a review and analysis of the July 8, 2014 Public Works and Community Environment Advisory Commissions’ recommendations.

EBMUD WaterSmart Certification

On October 28, 2014, the City of Berkeley was recognized for water conservation during the drought, receiving an award from East Bay Municipal Utility District (EBMUD) for reducing water use and achieving WaterSmart certification at the Civic Center building and Martin Luther King, Jr. Park. The City is now pursuing the EBMUD WaterSmart certification at these additional sites: the Berkeley Public Health Clinic; the Corporation Yard, the Transfer Station, all four Branch Libraries and the Spring Animal Shelter.

Municipal Water Use in Context

Municipal water accounts for about 2% of all water used in the City (in millions of gallons), based on 2013 estimates:

Residential	2,359	57%
Non-Residential	1,671	41%
Municipal	83	2%
TOTAL	4,113	100%

Irrigation accounts for approximately 82% of municipal water use, and the balance is attributed to building and facility-related use by staff and the public, including street sweeping and vehicle washing.

ENVIRONMENTAL SUSTAINABILITY

The City's water reduction efforts provide an immediate response to the current water crisis as well as a plan for moving toward more sustainable water use in the face of changing climatic conditions. The City's efforts will also result in reduced energy consumption for pumping and treatment and reduced accidental water runoff and discharge to storm drains.

Severe reductions risk damaging City landscaping. The current response seeks to responsibly reduce water consumption while maintaining vital landscapes. These landscapes can mitigate climate change by sequestering carbon, increasing resilience to the urban heat island effects of climate change and protecting soils and water quality in our creeks and the Bay.

POSSIBLE FUTURE ACTION

As the median turf browns from a lack of watering, there may be community interest in alternative landscaping in these areas.

In addition, staff continues to explore the potential for contracting with an energy and water services company for design, financing and construction of water and energy efficiency measures before the end of the fiscal year. The objective of this contract would be to improve the energy and water efficiency for all municipal buildings and infrastructure.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

Many of the permanent water-related improvements, for example new landscaping in medians, would require considerable expense, and is not included in the current City budget.

If the City pursues a contract with an energy and water services company to design, construct, and finance energy and water efficiency improvements, the projects would be financed through annual savings from utility costs, as is being done for the LED streetlight project.

CONTACT PERSON

Neal DeSnoo, Energy Program Manager, Energy & Sustainable Development, Planning & Development, 981-7439

Christina Erickson, Senior Management Analyst, Parks Recreation & Waterfront, 981-6703

ARobin Orden, Senior Management Analyst, Public Works, 981-6304

Attachments:

1. EBMUD Emergency Regulations and Restrictions on Water Use

Related Links:

1. April 1, 2015 Governor Brown's Executive Order B-29-15
http://gov.ca.gov/docs/4.1.15_Executive_Order.pdf
2. April 7, 2015 State Water Resources Control Board Proposed Regulatory Framework
http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/emergency_regulations/draft_regulatory_framework.pdf
3. April 14, 2015 East Bay Municipal Utility District announcement of new water restrictions
<http://www.ebmud.com/water-and-wastewater/latest-water-supply-update>
4. February 25, 2014 report from Councilmembers:
www.cityofberkeley.info/Clerk/City_Council/2014/02_Feb/Documents/2014-02-25_Item_17_Water_Conservation_Measures.aspx
5. February 28, 2014 City Manager memo:
www.cityofberkeley.info/uploadedFiles/Clerk/Level_3_-_General/Drought%20Response%20022814.pdf
6. March 2014 Press Release:
www.cityofberkeley.info/City_Manager/Press_Releases/2014/2014-03-06_City_of_Berkeley_to_Cut_Water_Use_by_10_During_Drought_Year.aspx
7. July 8, 2014 Public Works and Community Advisory Commissions joint report:
www.cityofberkeley.info/Clerk/City_Council/2014/07_Jul/Documents/2014-07-08_Item_45a_City_of_Berkeley_Water.aspx
8. July 8, 2014 Companion Staff Report:
www.cityofberkeley.info/Clerk/City_Council/2014/07_Jul/Documents/2014-07-08_Item_45b_Water_Conservation_Measures.aspx
9. September 16, 2014 City Manager Update City's Water Reduction:
www.cityofberkeley.info/Clerk/City_Council/2014/09_Sep/Documents/2014-09-16_Item_24_City_Water_Conservation.aspx



SECTION 28

WATER USE DURING WATER SHORTAGE EMERGENCY CONDITION

Drought conditions require that all customers reduce their use of EBMUD water supplies until further notice to ensure availability of the public water supply for critical uses. This regulation specifies the water uses that are prohibited during the drought and provides guidelines on effective water use practices to help customers conserve. It also defines the exceptions and enforcement provisions should customers fail to comply with the prohibitions.

A. EMERGENCY REGULATIONS AND RESTRICTIONS ON WATER USE

During the water shortage emergency condition declared by the Board of Directors, all customers must comply with prohibitions on water uses described below to conserve the public water supply to meet critical needs. In addition, customers are asked to follow the water saving guidelines below.

1. Potable Water Uses Prohibited During the Water Shortage Emergency

- a. Using potable water for decorative ponds, fountains and other water features that do not recirculate water is prohibited.
- b. Washing cars, boats, trailers, aircraft or other vehicles with potable water by hose without a shutoff nozzle is prohibited.
- c. Washing sidewalks, driveways or hard surfaces with potable water, or applying potable water to any surface or material that results in excessive use and runoff is prohibited.
- d. The application of potable water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures is prohibited.
- e. Irrigating turf and ornamental landscape is only permitted no more than two days each week, not on consecutive days, and before 9 a.m. and after 6 p.m., except for potted plants.
- f. Irrigating turf and ornamental landscaping with potable water during and within 48 hours following measurable precipitation is prohibited.
- g. Using potable water for irrigating ornamental turf on public street medians is prohibited.
- h. Flushing sewers or hydrants with potable water are prohibited, except in cases of emergency and for essential operations.
- i. Use of potable water for construction, street cleaning, soil compaction and dust control is prohibited if a feasible alternative source of water is available. All water use for construction, soil compaction and dust control will require a permit issued by EBMUD.



- j. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased is prohibited.
- k. Operators of hotels and motels are required to offer patrons the option of not having their towels and linens washed daily. The hotel or motel shall prominently display notice of this option in each guestroom using clear and easily understood language.
- l. Use of hydrant water outside the EBMUD service area is prohibited.

2. Water Savings Guidelines

- a. Conserve water indoors. Efficient indoor water use is 45 gallons and super-efficient indoor use is 35 gallons per person daily. Most customers can achieve this by shortening showers and using less bath water, running only full loads of laundry and dishes, and keeping a close eye on faucet use. Additionally, customers are encouraged to reduce use of kitchen garbage disposals through composting or curbside green waste collection and not to use toilets as wastebaskets. Customers also may want to consider upgrading to more water-efficient plumbing fixtures and appliances.
- b. Promptly repair leaks indoors and outside. Measureable leaks should not be turned on until repairs have been completed.
- c. Use covers on swimming pools and home spas (hot tubs) and avoid draining, refilling and topping off.
- d. Encourage gyms, spas and similar facilities to ask patrons to conserve water while showering and using wash basins.
- e. Encourage all food preparation establishments, such as restaurants and cafeterias, to install and use high-efficiency pre-rinse spray nozzles in their kitchens.
- f. Irrigate less outdoors. Most customers can cut outdoor watering 30% without affecting long-term plant health by irrigating before dawn or at dusk, no more than two days per week.

B. EXCEPTIONS

- 1. Written applications for exceptions from the regulations and restrictions on water use set forth in this Section shall be accepted, and may be granted, by the Customer & Community Services Department.
- 2. Grounds for granting such applications are:
 - a. Failure to do so would cause an unnecessary and undue hardship to the applicant, including, but not limited to, adverse economic impacts, such as loss of production or jobs; or



- b. Failure to do so would cause a condition affecting the health, sanitation, fire protection or safety of the applicant or the public.

3. Denials of applications may be appealed as set forth in subdivision D, below.

C. ENFORCEMENT

1. The District may, after one written warning, order that a special meter reading or readings be made in order to ascertain whether wasteful use of water is occurring. Charges for such a meter reading or readings or for follow-up visits by District staff are fixed by the Board from time to time and shall be paid by the customer.
2. In the event that the District observes that apparent excessive water use is occurring at a customer's premises, the Manager of Customer and Community Services may, after a written warning to the customer, authorize installation of a flow-restricting device on the service line for any customer observed by District staff to be willfully violating any of the regulations and restrictions on water use set forth in this section. Charges for installation of flow-restricting devices may be fixed by the Board from time to time and shall be paid by the customer.
3. In the event that a further willful violation is observed by District staff, the District may discontinue service. Charges for restoring service may be fixed by the Board from time to time and shall be paid by the customer.
4. The District may immediately revoke a permit to use water from an EBMUD hydrant when water is observed being used in violation of the emergency regulations or restrictions on water use.

D. APPEALS

Consideration of written applications for appeals regarding exceptions from the regulations and restrictions on water use set forth in this Section, and regarding application of the enforcement actions set forth in subdivision C, above, shall be as follows:

1. Written applications for appeals shall be accepted, and may be granted, by the Customer & Community Services Department.
2. Denials of applications may be appealed in writing to the Manager of Customer and Community Services.

