



Jesse Arreguín
City Councilmember, District 4

CONSENT CALENDAR
April 28, 2015

To: Honorable Mayor and Members of the City Council
From: Councilmember Jesse Arreguín
Subject: Referral to Reduce Urban Water Usage by 25%

RECOMMENDATION

Refer the City Manager and the Public Works and Community Environmental Advisory Commissions to review Governor Brown's Executive Order to reduce urban water usage by 25% of 2013 levels and provide recommendations to meet these requirements.

BACKGROUND

In response to the lowest snowpack ever recorded and the ongoing extreme drought, on April 1, 2015, Governor Jerry Brown issued an Executive order requiring urban areas to reduce water consumption by 25% of 2013 usage.

On February 25, 2014, Council requested the Public Works Commission and Community Environmental Advisory Commission to explore the issue of water conservation measures, along with providing community outreach. Additionally, the item requested the City Manager to provide a report updating the City's water conservation efforts. On July 8, 2014, PWC and CEAC provided Council with its recommendation to reduce municipal water usage by 20% from 2012-2013 levels within 12 months, along with obtaining EBMUD WaterSmart Certification for all facilities and removing lawns not used for recreation with mulch and ultimately drought resistant plants.

Staff provided an update on the City's water conservation efforts on September 16, 2014. The City is currently taking a two-phase approach. The first phase involves reducing water consumption, focusing on improving irrigation systems. The second phase creates capital improvement projects such as water efficiency in buildings and replacing landscapes with drought resistant plants. At the time, the City committed to a 10% reduction instead of the Commissions' recommended 20%. Preliminary assessments show a 27% reduction in municipal water usage between the months of April-June 2014 compared to the same time period in 2012-2013. However, this reduction is mostly due to fixing leaking and failing irrigation systems, and water consumption is expected to increase when those systems are back online.

While municipal use only accounts for 2% of water consumption in the City of Berkeley (82% of which is used for irrigation), having the City lead by example will encourage

residents and businesses to follow these practices. Berkeley has already taken a head start, but more conservation is mandated. Urgent action is needed to alleviate the consequences of California's worst drought in modern history.

ENVIRONMENTAL SUSTAINABILITY

Reducing water consumption is necessary to provide sustainability in extreme drought conditions. Considering the possibility of a prolonged drought and the long term impacts of climate change, it is vital to move forward with measures to conserve water.

FINANCIAL IMPLICATIONS

Unknown

CONTACT PERSON

Jesse Arreguin, Councilmember, District 4 510-981-7140

Attachments:

- 1: Governor Brown's Executive Order
- 2: February 2014 Water Conservation Council Item
- 3: July 2014 PWC/CEAC Recommendation
- 4: September 2014 City Water Conservation Update

Executive Department
State of California

EXECUTIVE ORDER B-29-15

WHEREAS on January 17, 2014, I proclaimed a State of Emergency to exist throughout the State of California due to severe drought conditions; and

WHEREAS on April 25, 2014, I proclaimed a Continued State of Emergency to exist throughout the State of California due to the ongoing drought; and

WHEREAS California's water supplies continue to be severely depleted despite a limited amount of rain and snowfall this winter, with record low snowpack in the Sierra Nevada mountains, decreased water levels in most of California's reservoirs, reduced flows in the state's rivers and shrinking supplies in underground water basins; and

WHEREAS the severe drought conditions continue to present urgent challenges including: drinking water shortages in communities across the state, diminished water for agricultural production, degraded habitat for many fish and wildlife species, increased wildfire risk, and the threat of saltwater contamination to fresh water supplies in the Sacramento-San Joaquin Bay Delta; and

WHEREAS a distinct possibility exists that the current drought will stretch into a fifth straight year in 2016 and beyond; and

WHEREAS new expedited actions are needed to reduce the harmful impacts from water shortages and other impacts of the drought; and

WHEREAS the magnitude of the severe drought conditions continues to present threats beyond the control of the services, personnel, equipment, and facilities of any single local government and require the combined forces of a mutual aid region or regions to combat; and

WHEREAS under the provisions of section 8558(b) of the Government Code, I find that conditions of extreme peril to the safety of persons and property continue to exist in California due to water shortage and drought conditions with which local authority is unable to cope; and

WHEREAS under the provisions of section 8571 of the California Government Code, I find that strict compliance with various statutes and regulations specified in this order would prevent, hinder, or delay the mitigation of the effects of the drought.

NOW, THEREFORE, I, EDMUND G. BROWN JR., Governor of the State of California, in accordance with the authority vested in me by the Constitution and statutes of the State of California, in particular Government Code sections 8567 and 8571 of the California Government Code, do hereby issue this Executive Order, effective immediately.



IT IS HEREBY ORDERED THAT:

1. The orders and provisions contained in my January 17, 2014 Proclamation, my April 25, 2014 Proclamation, and Executive Orders B-26-14 and B-28-14 remain in full force and effect except as modified herein.

SAVE WATER

2. The State Water Resources Control Board (Water Board) shall impose restrictions to achieve a statewide 25% reduction in potable urban water usage through February 28, 2016. These restrictions will require water suppliers to California's cities and towns to reduce usage as compared to the amount used in 2013. These restrictions should consider the relative per capita water usage of each water suppliers' service area, and require that those areas with high per capita use achieve proportionally greater reductions than those with low use. The California Public Utilities Commission is requested to take similar action with respect to investor-owned utilities providing water services.
3. The Department of Water Resources (the Department) shall lead a statewide initiative, in partnership with local agencies, to collectively replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes. The Department shall provide funding to allow for lawn replacement programs in underserved communities, which will complement local programs already underway across the state.
4. The California Energy Commission, jointly with the Department and the Water Board, shall implement a time-limited statewide appliance rebate program to provide monetary incentives for the replacement of inefficient household devices.
5. The Water Board shall impose restrictions to require that commercial, industrial, and institutional properties, such as campuses, golf courses, and cemeteries, immediately implement water efficiency measures to reduce potable water usage in an amount consistent with the reduction targets mandated by Directive 2 of this Executive Order.
6. The Water Board shall prohibit irrigation with potable water of ornamental turf on public street medians.
7. The Water Board shall prohibit irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drip or microspray systems.

8. The Water Board shall direct urban water suppliers to develop rate structures and other pricing mechanisms, including but not limited to surcharges, fees, and penalties, to maximize water conservation consistent with statewide water restrictions. The Water Board is directed to adopt emergency regulations, as it deems necessary, pursuant to Water Code section 1058.5 to implement this directive. The Water Board is further directed to work with state agencies and water suppliers to identify mechanisms that would encourage and facilitate the adoption of rate structures and other pricing mechanisms that promote water conservation. The California Public Utilities Commission is requested to take similar action with respect to investor-owned utilities providing water services.

INCREASE ENFORCEMENT AGAINST WATER WASTE

9. The Water Board shall require urban water suppliers to provide monthly information on water usage, conservation, and enforcement on a permanent basis.
10. The Water Board shall require frequent reporting of water diversion and use by water right holders, conduct inspections to determine whether illegal diversions or wasteful and unreasonable use of water are occurring, and bring enforcement actions against illegal diverters and those engaging in the wasteful and unreasonable use of water. Pursuant to Government Code sections 8570 and 8627, the Water Board is granted authority to inspect property or diversion facilities to ascertain compliance with water rights laws and regulations where there is cause to believe such laws and regulations have been violated. When access is not granted by a property owner, the Water Board may obtain an inspection warrant pursuant to the procedures set forth in Title 13 (commencing with section 1822.50) of Part 3 of the Code of Civil Procedure for the purposes of conducting an inspection pursuant to this directive.
11. The Department shall update the State Model Water Efficient Landscape Ordinance through expedited regulation. This updated Ordinance shall increase water efficiency standards for new and existing landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf. It will also require reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015. The Department shall provide information on local compliance to the Water Board, which shall consider adopting regulations or taking appropriate enforcement actions to promote compliance. The Department shall provide technical assistance and give priority in grant funding to public agencies for actions necessary to comply with local ordinances.
12. Agricultural water suppliers that supply water to more than 25,000 acres shall include in their required 2015 Agricultural Water Management Plans a detailed drought management plan that describes the actions and measures the supplier will take to manage water demand during drought. The Department shall require those plans to include quantification of water supplies and demands for 2013, 2014, and 2015 to the extent data is available. The Department will provide technical assistance to water suppliers in preparing the plans.

13. Agricultural water suppliers that supply water to 10,000 to 25,000 acres of irrigated lands shall develop Agricultural Water Management Plans and submit the plans to the Department by July 1, 2016. These plans shall include a detailed drought management plan and quantification of water supplies and demands in 2013, 2014, and 2015, to the extent that data is available. The Department shall give priority in grant funding to agricultural water suppliers that supply water to 10,000 to 25,000 acres of land for development and implementation of Agricultural Water Management Plans.
14. The Department shall report to Water Board on the status of the Agricultural Water Management Plan submittals within one month of receipt of those reports.
15. Local water agencies in high and medium priority groundwater basins shall immediately implement all requirements of the California Statewide Groundwater Elevation Monitoring Program pursuant to Water Code section 10933. The Department shall refer noncompliant local water agencies within high and medium priority groundwater basins to the Water Board by December 31, 2015, which shall consider adopting regulations or taking appropriate enforcement to promote compliance.
16. The California Energy Commission shall adopt emergency regulations establishing standards that improve the efficiency of water appliances, including toilets, urinals, and faucets available for sale and installation in new and existing buildings.

INVEST IN NEW TECHNOLOGIES

17. The California Energy Commission, jointly with the Department and the Water Board, shall implement a Water Energy Technology (WET) program to deploy innovative water management technologies for businesses, residents, industries, and agriculture. This program will achieve water and energy savings and greenhouse gas reductions by accelerating use of cutting-edge technologies such as renewable energy-powered desalination, integrated on-site reuse systems, water-use monitoring software, irrigation system timing and precision technology, and on-farm precision technology.

STREAMLINE GOVERNMENT RESPONSE

18. The Office of Emergency Services and the Department of Housing and Community Development shall work jointly with counties to provide temporary assistance for persons moving from housing units due to a lack of potable water who are served by a private well or water utility with less than 15 connections, and where all reasonable attempts to find a potable water source have been exhausted.
19. State permitting agencies shall prioritize review and approval of water infrastructure projects and programs that increase local water supplies, including water recycling facilities, reservoir improvement projects, surface water treatment plants, desalination plants, stormwater capture, and greywater systems. Agencies shall report to the Governor's Office on applications that have been pending for longer than 90 days.

20. The Department shall take actions required to plan and, if necessary, implement Emergency Drought Salinity Barriers in coordination and consultation with the Water Board and the Department of Fish and Wildlife at locations within the Sacramento - San Joaquin delta estuary. These barriers will be designed to conserve water for use later in the year to meet state and federal Endangered Species Act requirements, preserve to the extent possible water quality in the Delta, and retain water supply for essential human health and safety uses in 2015 and in the future.
21. The Water Board and the Department of Fish and Wildlife shall immediately consider any necessary regulatory approvals for the purpose of installation of the Emergency Drought Salinity Barriers.
22. The Department shall immediately consider voluntary crop idling water transfer and water exchange proposals of one year or less in duration that are initiated by local public agencies and approved in 2015 by the Department subject to the criteria set forth in Water Code section 1810.
23. The Water Board will prioritize new and amended safe drinking water permits that enhance water supply and reliability for community water systems facing water shortages or that expand service connections to include existing residences facing water shortages. As the Department of Public Health's drinking water program was transferred to the Water Board, any reference to the Department of Public Health in any prior Proclamation or Executive Order listed in Paragraph 1 is deemed to refer to the Water Board.
24. The California Department of Forestry and Fire Protection shall launch a public information campaign to educate the public on actions they can take to help to prevent wildfires including the proper treatment of dead and dying trees. Pursuant to Government Code section 8645, \$1.2 million from the State Responsibility Area Fire Prevention Fund (Fund 3063) shall be allocated to the California Department of Forestry and Fire Protection to carry out this directive.
25. The Energy Commission shall expedite the processing of all applications or petitions for amendments to power plant certifications issued by the Energy Commission for the purpose of securing alternate water supply necessary for continued power plant operation. Title 20, section 1769 of the California Code of Regulations is hereby waived for any such petition, and the Energy Commission is authorized to create and implement an alternative process to consider such petitions. This process may delegate amendment approval authority, as appropriate, to the Energy Commission Executive Director. The Energy Commission shall give timely notice to all relevant local, regional, and state agencies of any petition subject to this directive, and shall post on its website any such petition.

26. For purposes of carrying out directives 2–9, 11, 16–17, 20–23, and 25, Division 13 (commencing with section 21000) of the Public Resources Code and regulations adopted pursuant to that Division are hereby suspended. This suspension applies to any actions taken by state agencies, and for actions taken by local agencies where the state agency with primary responsibility for implementing the directive concurs that local action is required, as well as for any necessary permits or approvals required to complete these actions. This suspension, and those specified in paragraph 9 of the January 17, 2014 Proclamation, paragraph 19 of the April 25, 2014 proclamation, and paragraph 4 of Executive Order B-26-14, shall remain in effect until May 31, 2016. Drought relief actions taken pursuant to these paragraphs that are started prior to May 31, 2016, but not completed, shall not be subject to Division 13 (commencing with section 21000) of the Public Resources Code for the time required to complete them.
27. For purposes of carrying out directives 20 and 21, section 13247 and Chapter 3 of Part 3 (commencing with section 85225) of the Water Code are suspended.
28. For actions called for in this proclamation in directive 20, the Department shall exercise any authority vested in the Central Valley Flood Protection Board, as codified in Water Code section 8521, et seq., that is necessary to enable these urgent actions to be taken more quickly than otherwise possible. The Director of the Department of Water Resources is specifically authorized, on behalf of the State of California, to request that the Secretary of the Army, on the recommendation of the Chief of Engineers of the Army Corps of Engineers, grant any permission required pursuant to section 14 of the Rivers and Harbors Act of 1899 and codified in section 48 of title 33 of the United States Code.
29. The Department is directed to enter into agreements with landowners for the purposes of planning and installation of the Emergency Drought Barriers in 2015 to the extent necessary to accommodate access to barrier locations, land-side and water-side construction, and materials staging in proximity to barrier locations. Where the Department is unable to reach an agreement with landowners, the Department may exercise the full authority of Government Code section 8572.
30. For purposes of this Executive Order, chapter 3.5 (commencing with section 11340) of part 1 of division 3 of the Government Code and chapter 5 (commencing with section 25400) of division 15 of the Public Resources Code are suspended for the development and adoption of regulations or guidelines needed to carry out the provisions in this Order. Any entity issuing regulations or guidelines pursuant to this directive shall conduct a public meeting on the regulations and guidelines prior to adopting them.

31. In order to ensure that equipment and services necessary for drought response can be procured quickly, the provisions of the Government Code and the Public Contract Code applicable to state contracts, including, but not limited to, advertising and competitive bidding requirements, are hereby suspended for directives 17, 20, and 24. Approval by the Department of Finance is required prior to the execution of any contract entered into pursuant to these directives.

This Executive Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

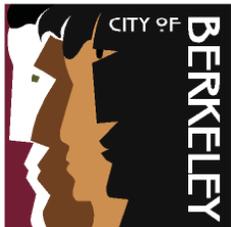
I FURTHER DIRECT that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given to this Order.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 1st day of April 2015.

EDMUND G. BROWN JR.
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State



Jesse Arreguín
Councilmember, District 4

CONSENT CALENDAR
February 25, 2014

To: Honorable Mayor and Members of the City Council
From: Councilmembers Jesse Arreguín and Gordon Wozniak
Subject: Water Conservation Measures

RECOMMENDATION

1) Refer to the Public Works and Environmental Advisory Commissions the issue of California's historic drought to explore possible voluntary and/or mandatory water conservation measures along with public education and outreach, and to return to Council with a recommendation.

2) Request that the City Manager provide a report to Council on the measures proposed and already undertaken by the City to address the drought.

FISCAL IMPACTS OF RECOMMENDATION

Unknown. Some staff time involved in the study and possible execution of water conservation measures, as well as possible savings from such measures.

BACKGROUND:

California is experiencing one of the driest winters on record that, coupled with dry years that have nearly depleted reservoirs the last two years, has led to Governor Jerry Brown to declare a drought emergency and directed State officials to take all necessary actions to prepare for the drought conditions. In addition, Governor Brown has called on all residents to reduce water consumption by 20 percent.

While the recent tropical storm dubbed "pineapple express" brought much needed rain, it is not enough to offset years of diminished rainfall. The City of Berkeley has already taken measures to reduce water consumption as a part of the City's Climate Action Plan. However, due to the drought, there is a critical need for additional water conservation measures to ensure the continuity of the Berkeley's severely impacted water source, the Sierra Nevada.

Berkeley's largest source of water consumption is single-family homes, accounting for 34% of water use in 2011. Through public education there can be greater awareness of the need to conserve water and the simple, free methods to do so. East Bay Municipal Utility District offers free water conserving showerheads, faucet aerators, and hose

nozzles upon the completion of a home water use survey as well as rebates on high-efficiency toilets, clothes washers, and irrigation systems. Dissemination of this information and the promotion of voluntary water conservation methods such as checking for and repairing leaks, watering plants only as needed, restricting water use of non-essential activities, can greatly enhance conservation efforts.

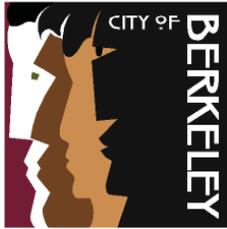
Meanwhile, other Bay Area cities have explored a variety of voluntary and mandatory measures, including the City of Healdsburg, which has requested evening-and morning-only watering, a 20% decrease in water usage at car washes, and prohibiting a variety of non-essential uses of water during the drought, etc.

Additionally, the City may want to consider a decrease in its water usage to “stress levels” for turf in medians, and/or eventually phase out turf in the medians for drought resistant foliage and woodchip groundcover.

CONTACT PERSON:

Jesse Arreguin, Councilmember, District 4

981-7140



Public Works Commission

ACTION CALENDAR

July 8, 2014

To: Honorable Mayor and Members of the City Council

From: Community Environmental Advisory Commission
Public Works Commission

Submitted by: Max Gomberg, Chair, Community Environmental Advisory Commission
Ray Yep, Chair, Public Works Commission

Subject: City of Berkeley Water Conservation Measures

RECOMMENDATION

Direct the City Manager to establish a long-term water conservation plan according to principles set out herein, with the goal to reduce municipal water use by 20% from 2012-2013 levels within 12 months, to move toward East Bay Municipal Utility District (EBMUD) WaterSmart Certification for all facilities, and to replace lawns not used for recreation with mulch until appropriate low-impact development measures or drought-tolerant plantings can be established.

FISCAL IMPACTS OF RECOMMENDATION

Uncertain. Expect cost savings on reduced water use, but initial increased cost for conservation planning and repurposing landscaping.

CURRENT SITUATION AND ITS EFFECTS

California is in a severe drought. Based on climate data and projections we expect more frequent and more severe droughts than we've seen since the 1500s¹. What are our alternatives? One of the least expensive and most practical alternatives for increasing available water supply is conservation. Initiating a program of water conservation will establish practices on which we will need to rely increasingly into the future.

Water conservation should not be considered a stop-gap measure, to be done just until we get more rainfall. Rather, ongoing wise use of existing supply will be needed into the future for both fiscal and quality of life reasons, to maintain a pleasant urban environment, sustain human health, and sustain other essential uses.

BACKGROUND

In 2013, residents, businesses, and government in the City of Berkeley used a total of 4.1 billion gallons of water, with residential uses consuming the largest share.

¹ See National Climate Assessment's analysis of water supply in the Western US: <http://nca2014.globalchange.gov/>, accessed May 30, 2014.

Consumption was less than the 2006-2007 water year when we used 4.4 billion gallons, as seen in the following table.

	Water Use (million gal/yr)	
	2013	2006-2007
Residential	2,359	2,460
Non-residential	1,671	1,870
Municipal	83*	106
TOTAL	4,112*	4,436

*estimated

Although the municipal sector of the City of Berkeley uses only about 2% of the total water consumed in the City, we believe the City of Berkeley should lead the conservation effort by example. Residents may observe these new practices and be encouraged to follow them.

RECOMMENDATIONS FOR MUNICIPAL WATER CONSERVATION

In a February 28, 2014 memorandum to Council (Attachment 1), the City Manager provided information on the City's current drought response and water conservation measures². Although the steps taken to date are excellent, the Public Works Commission (PWC) and Community Environmental Advisory Commission (CEAC) recommend that we establish a longer term and more aggressive water conservation plan.

Establish Accountability: A point person, such as the Public Works Director, should be tasked with the goals and execution of water conservation actions, with metrics based on the water budgets and progress toward them. The point person will need to coordinate with other departments, such as Parks and Waterfront.

Build a Baseline: The Public Works Department needs to build a baseline, i.e. determine our historic water use and cost, facility by facility, for all of the City of Berkeley's water use. Historic data can be supplied by EBMUD.

Build a Water Budget: Next we need to build a water budget for each facility and/or account based on a schedule of measures to reduce water use, including cost-benefit analysis.

Key water uses and some excellent conservation measures are set out in detail in EBMUD's WaterSmart Guidebook available online at www.ebmud.com/for-customers/conservation-rebates-and-services/commercial/watersmart-guidebook. Key water uses applicable to Berkeley municipal use are landscape – to be coordinated with Parks and Waterfront – domestic and restroom, heating and cooling. Examples of key conservation strategies include finding and repairing leaks, landscape conversion

² City Manager February 28, 2014 memo to Council
www.cityofberkeley.info/uploadedFiles/Clerk/Level_3_-_General/Drought%20Response%20022814.pdf

(especially replacing lawns), and installation of increasingly efficient hardware (toilets, showerheads, and faucets).

Set Immediate Goals: The PWC and CEAC recommend the following immediate goals:

- Cut municipal water use by at least 20% in our first year to align with the Governor's call for statewide water conservation.
- Establish a plan toward having all City facilities obtain EBMUD WaterSmart certification. See information at www.ebmud.com/for-customers/for-commercial-customers/watersmart-business-certification-program.
- Identify lawns on City properties, such as boulevard medians, that could be replaced by mulch with the goal to modify with low impact development (LID) or replant with drought tolerant plantings in the future. Begin replacing lawns this year.

To monitor progress, PWC and CEAC recommend that Public Works report back to Council on progress by December 2014. The report should include goals for continued reductions as part of the on-going plan, with metrics to mark progress.

Use EBMUD Support Services: EBMUD has an array of services, rebates and ideas for conservation. The EBMUD Water Conservation Master Plan: 2011 provides a review and is available at: www.ebmud.com/sites/default/files/pdfs/EBMUD_WCMP%202011.pdf.

For information on EBMUD services contact: Richard Harris, EBMUD Manager of Water Conservation, email: rharris@ebmud.com, phone: 510-287-1675.

Education and Outreach: As shown in the table on page 2, residential and non-residential users account for most water use. To modify behaviors of all of us we need to expand our education and outreach concerning water conservation. Education materials are available but need to be compiled for use in outreach meetings. These meetings could be sponsored by the Commissions, as we did with Measure M, or by City Councilmembers within their districts, to name two possibilities.

At its meeting on June 5, 2014, the PWC reviewed the report to Council and approved the following motion: Make minor amendments to the report, approve the amended report for submittal to the City Council at the July 8, 2014 Council meeting, and send the amended report to the CEAC for approval at their June 12, 2014 meeting. (M/S/C Schueler/Swift, 5-2-0; Ayes: Schueler, Swift, Henry, Kelley, Abramson; Noes: Neal, Yep; Abstain: None; Absent: None).

At its meeting on June 12, 2014, the CEAC voted in favor of accelerating water conservation. (M/S/C Torkelson/Amezcuca, 4-3-0; Ayes: Varnhagen, Torkelson, Gomberg, Amezcua; Noes: Magofña, Goldhaber, Panzer; Abstain: None; Absent: None).

Minority Position: The minority position on the CEAC is that the seriousness of the current drought does not justify setting an otherwise unsubstantiated goal of reducing municipal water use by an additional 20 percent within a year. The City of Berkeley has already reduced its water use by about 20 percent over the past seven years. Another such cut might be much harder to achieve and more expensive. The City of Berkeley only accounts for about 2 percent of Citywide water use and continues to experience structural budget deficits. Also, a new reduction could have unintended consequences, such as increased fire danger resulting from too little irrigation. While aspirational goals can serve as an excellent motivating tool, we would prefer more information on current City water use and conservation efforts before setting a conservation target that is so aggressive in both its timetable and degree.

ENVIRONMENTAL SUSTAINABILITY

Reducing water use would improve our sustainability especially in adapting to climate change.

RATIONALE FOR RECOMMENDATION

Given the current severe drought and possibility of sustained drought, conservation measures are required.

ALTERNATIVE ACTIONS CONSIDERED

None.

CITY MANAGER

See the companion staff report for City Manager's response to the content and recommendations of the Commissions' Report.

CONTACT PERSON

Ray Yep, Chair, Public Works Commission

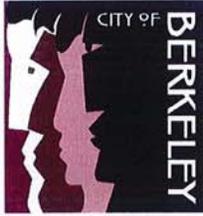
Max Gomberg, Chair, Community Environmental Advisory Commission

Nabil Al-Hadithy, Secretary, Community Environmental Advisory Commission, 981-7461

Sean Rose, Secretary, Public Works Commission, 981-6435

Attachments:

1. February 28, 2014 memorandum to Council



Office of the City Manager

February 28, 2014

To: Honorable Mayor and Members of the City Council

From: Christine Daniel, City Manager 

Subject: Drought Response; Water Conservation Measures

At its February 25, 2014 meeting the City Council requested that the City Manager provide a report on the measures proposed and already undertaken by the City to address the drought. The City has already implemented plans to scale back water use, curb leaks, and explore alternative sources of water. Additionally, City staff will be promoting water conservation measures to the general public, including advertising various policies and programs available to the community through the City or other agencies such as EBMUD. A summary of ongoing activity is detailed below.

BACKGROUND

The City of Berkeley will reduce water consumption in its operations by 10 percent to minimize the impact of the ongoing drought. Areas of certain parks and medians will get less water, pipes are being checked for leaks, and the City is exploring the use of reclaimed water for street sweeping and the watering of medians.

The 10 percent reduction mirrors the goal set by EBMUD, which controls water distribution for much of the East Bay, including Berkeley. The City's goals are in addition to the existing community-wide water reductions in Berkeley, where water consumption has [dropped by 20 percent since 2000 and 36 percent since 1975.](#)

Reducing water waste, which residents and businesses can also do, is a priority for the City's water conservation. The City is assessing each building for leaks and looking into cost-effective fixes for some of the more aging infrastructure. One project coinciding with our conservation effort is the replacement of a cooling tower at 1947 Center Street, one of the City's largest buildings. This work will eliminate a leak in that system.

The Parks Recreation and Waterfront Department has surveyed each of the 273 water meters that gauge that department's water use. The department has prioritized water use so that parks and athletic fields will continue to receive water, while still reducing consumption by the 10% target. That reduction has already begun.

The City's Public Works Department is exploring the use of reclaimed water for various uses, such as median watering, and for vacator trucks which unclog storm drains. The department is looking into the most feasible ways to bring reclaimed water into the City. Such efforts will be easier in the future thanks to a recently announced grant given to EBMUD. The project, which EBMUD says will be completed in 2015, will pipe reclaimed water directly into Berkeley. The impact could be substantial. For example, the City's three vacator trucks, which operate an average of six days a week all year long, each use at least 1,600 gallons a day.

City policies and programs encourage community-wide water conservation, including irrigation by way of bathtub, shower and washing machine [graywater](#). The City also enforces new State standards for [high efficiency plumbing fixtures for new construction and alterations](#). The City also encourages people to install [rainwater harvesting](#) systems, which can reduce the impact of the drought for individual households.

EBMUD also provides a variety of water conservation tips and resources at this link: <http://www.ebmud.com/resource-center/water-conservation-resources>. The agency reports that 14 percent of household water use comes from leaks, something households can address for free with the agency's free [Home Survey Kit](#).

Resources:

City of Berkeley Climate Action Plan Water Consumption Analysis

[http://www.ci.berkeley.ca.us/uploadedFiles/Planning and Development/Level 3 - Energy and Sustainable Development/Water%20CAP.pdf](http://www.ci.berkeley.ca.us/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/Water%20CAP.pdf)

City of Berkeley Graywater Guidelines

[http://www.cityofberkeley.info/Planning and Development/Energy and Sustainable Development/Graywater Collection Systems.aspx](http://www.cityofberkeley.info/Planning_and_Development/Energy_and_Sustainable_Development/Graywater_Collection_Systems.aspx)

City of Berkeley Plumbing Fixture Replacement Guidelines (PDF)

[http://www.ci.berkeley.ca.us/uploadedFiles/Online Service Center/Planning/SB%20407%20COB%20Guideline.pdf](http://www.ci.berkeley.ca.us/uploadedFiles/Online_Service_Center/Planning/SB%20407%20COB%20Guideline.pdf)

City of Berkeley Rainwater Harvesting Guidelines

[http://www.cityofberkeley.info/Planning and Development/Energy and Sustainable Development/Rainwater Harvesting.aspx](http://www.cityofberkeley.info/Planning_and_Development/Energy_and_Sustainable_Development/Rainwater_Harvesting.aspx)

EBMUD Water Conservation Resources

<http://www.ebmud.com/resource-center/water-conservation-resources>

EBMUD Home Survey Kit

<http://www.ebmud.com/environment/conservation-and-recycling/watersmart-center/watersmart-home-survey-kit>

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February 28, 2014

Re: Drought Response; Water Conservation Measures

Free home improvement services for low-income residents:

Community Energy Services Corporation: <http://ebenergy.org/home-repair-program/>

Rebuilding Together: <http://rtebn.org/our-work/>

cc: William Rogers, Deputy City Manager
Andrew Clough, Public Works Director
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Office of the City Manager

INFORMATION CALENDAR
September 16, 2014

To: Honorable Mayor and Members of the City Council

From:  Christine Daniel, City Manager

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

Subject: City Water Conservation and Use Reduction Update

SUMMARY

This report provides an update on City staff review and analysis of the July 8, 2014 recommendation from the [Public Works and Community Environmental Advisory Commissions](#),¹ and measures proposed and already undertaken to address the drought. The Commissions' report recommended a long-term water conservation plan with goals of reducing water consumption by 20% below the average of 2012 and 2013 levels within a year, moving towards EBMUD WaterSmart certification, and replacing lawns not used for recreation with mulch until other measures can be taken. The [companion staff report](#) proposed to review and analyze the Commissions' recommendation.

In a [February 2014 memo to Council](#) and [March press release](#), the City Manager reported on the City's commitment to reduce water consumption by 10% this year. Since then, staff's preliminary assessment indicates 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. The majority of reductions are the result of curtailed irrigation. Irrigation accounts for 82% of municipal water use, and the balance is attributed to building and facility-related use by staff and the public.

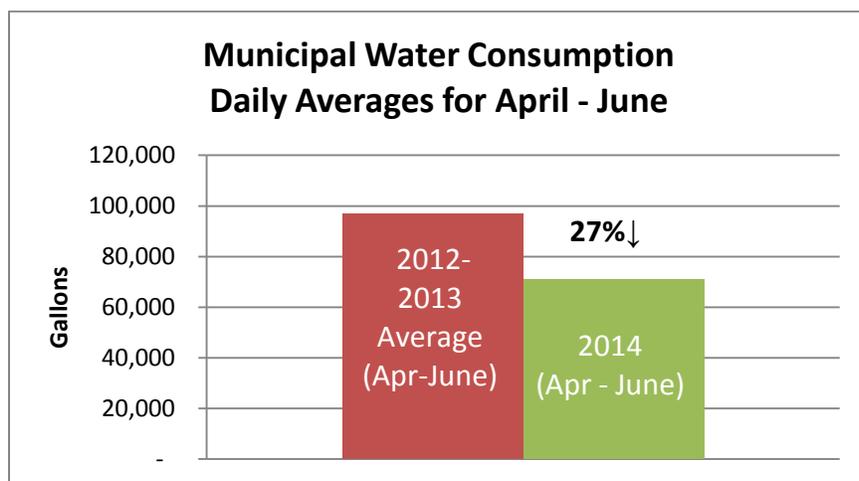
The City seeks to achieve permanent reductions with investments in water conservation, leak repair, improved irrigation systems, and conversion to more drought-tolerant landscaping. Staff is pursuing a 2-phase approach: 1) Curtailing water consumption through measures including emergency repairs and short-term reduced irrigation, and a commitment to maintaining a minimum 10% reduction, with deeper savings contingent upon the ability to maintain priority landscapes; and 2) Planning capital investments for sustainable reductions, including improved efficiency of irrigation systems and buildings, and conversion of certain landscapes to more drought-tolerant cover.

Council will receive another update on further results and implementation in April 2015.

¹ Full URLs for all links can be found on the last page of this report.

CURRENT SITUATION AND ITS EFFECTS

The City began its 2014 drought response in March, and a preliminary assessment of water consumption for the months of April through June 2014 shows a reduction of 27% over the average of the same months in 2012 and 2013.²



This reduction is a result of reduced irrigation, leak repairs, and a new water-efficient cooling tower at 1947 Center Street. While the effect of these actions has far exceeded the policy target of a 10% reduction, it is uncertain if this can or should be sustained.

- Reductions in watering times are already having a visible impact on parks and medians around the City. In some cases, reduced watering is stressing the landscape to the point that the vegetation may not be able to recover. City staff is actively recalibrating watering to protect the vegetation, particularly in heavily-used grass areas like Civic Center Park, Gilman Sports Fields, and San Pablo Park.
- Staff response to leaks is yielding immediate water reductions, which are short-term, and ultimately unsustainable. For example, in areas where leaks or irrigation system failures are discovered, staff is shutting off the water entirely. This prevents water waste, but requires greater staff resources to manually water these areas. When the systems are repaired, water consumption will resume.

Since the July 2014 reports, an interdepartmental team from Parks, Recreation & Waterfront; Planning & Development (Office of Energy & Sustainable Development), and Public Works has been pursuing a 2-phase response:

Phase 1: Water consumption is being curtailed by reduced watering of some lawns in medians and parks, and repairing leaks and failing irrigation systems. Staff is also collaborating with EBMUD to implement WaterSmart practices, such as installing water-efficient faucet aerators in City buildings. While initial responses are yielding reductions of more than 20%, sustaining these levels may cause irreversible damage to City landscaping, which is critical to the community's environmental sustainability. Staff has

² These amounts represent daily averages for April, May and June in 2012 and 2013. This responds to the Commissions' recommendation that the City achieve reductions from 2012-2013 levels.

committed to maintaining a minimum 10% reduction, with deeper savings contingent upon the ability to maintain priority landscapes.

Phase 2: In order to make the reductions sustainable, staff is planning capital investments to improve the efficiency of water appliances in buildings and landscape irrigation systems, and to convert certain landscapes to more drought-tolerant cover. These projects may be implemented through an energy and water efficiency performance contract for design, financing and construction of water and energy efficiency measures.³ Projects would be financed over a 10 to 15 year period, with savings from reduced water and energy use paying the debt service. Water reduction measures would include more precise irrigation systems, smart irrigation controllers, leak detection systems, landscape conversions, and water fixture conversions in buildings.

Analysis of Commissions' Recommendation for Water Conservation

The July 2014 [Public Works and Community Environmental Advisory Commissions](#) report recommended that the City establish a long-term water conservation plan, with a goal to reduce municipal water use by 20% from 2012-2013 levels within 12 months, to move toward EBMUD WaterSmart Certification for all facilities, and to replace lawns not used for recreation with mulch until appropriate low-impact development measures or drought-tolerant plantings can be established.

- *Establish a long-term water conservation plan:* The City's proposal to pursue an RFP and contract with an energy service provider (ESCO) will provide a comprehensive mechanism for planning, financing and implementing cost-effective, water efficient changes to our landscape and infrastructure.
- *Reduce municipal water use:* While the City is on track to meet the Commissions' target of 20% reductions, staff recommend against a formal commitment to 20% at this time. This is because water reduction to date is driven largely by response to leaks and failing irrigation systems. As those systems are improved, water use – along with tree and landscape health – is likely to resume to a corrected routine level.
- *Move toward EBMUD WaterSmart Certification for all facilities:* Staff engaged EBMUD to review WaterSmart Certification criteria, the application process, and the value of certification for municipalities. EBMUD and City staff agreed it's not feasible for all City facilities to pursue a formal certification process, requiring a separate application for each building. However, the City is engaging EBMUD to review high water use facilities and discuss WaterSmart practices to reduce overall consumption. This collaboration builds on the City's ongoing work with EBMUD through their Irrigation Reduction Information System (IRIS) Program, which provides staff with water budgets by meter for key irrigation sites. This program has been useful in helping staff to identify and address water waste.
- *Replace lawns not used for recreation until appropriate low-impact development measures or drought-tolerant plantings can be established:* The City has begun the process of replacing some grass with mulch in areas not used for recreation, and

³ This kind of contract is usually with an energy services company (ESCO), and would have the objective to improve the energy and water efficiency for all municipal buildings and infrastructure.

where irrigation systems have failed. A more comprehensive plan for replacing grass with drought-tolerant plantings will be developed in the context of an ESCO contract.

BACKGROUND

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, the [City Manager issued a memo](#) on the City's commitment to reduce water consumption by 10% in its operations this year. On July 8, both the [Commissions](#) and the [City Manager](#) returned with reports in response to the original referral.

Water Conservation Opportunities

As noted in the Commissions' report, 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 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. Water conservation strategies include curtailing irrigation, installing more water friendly landscape, and using more efficient technology. A staff survey is being conducted to determine where water saving opportunities lie, and where lower-cost measures can be implemented immediately. Converting landscape and installing new technology require a capital investment. It's worth noting that some steps were previously taken by the City, such as having stopped watering Cesar Chavez Park in 2011.

Existing Water Conservation Policy Actions

The City follows EBMUD guidance for its conservation efforts. On August 12, EBMUD issued [Mandatory outdoor watering restrictions in effect for EBMUD residents and businesses](#). EBMUD is expected to disclose any further reductions in September, following the peak dry period for our area.

Governor's Proclamation and Executive Order

- The new regulation was developed following two drought emergency declarations by Governor Brown. On [January 17, Governor Edmund G. Brown Jr. issued a drought emergency proclamation](#) following three dry or critically dry years in California.
- The [April 25 Executive Order issued by the Governor](#) directs the State Water Board to adopt an emergency regulation as it deems necessary, to ensure that urban water suppliers implement conservation measures.

State Water Resources Control Board (SWRCB)

On July 28, 2014 the [State Water Resources Control Board approved an emergency regulation](#) to ensure that water suppliers, their customers and state residents increase

water conservation in urban settings. The emergency regulations expire in April 2015 and consist of 3 requirements: 1) a prohibition on certain types of water use; 2) an order for all urban water suppliers to implement mandatory conservation measures; and 3) an order for water suppliers with 3,000 or more service connections to provide monthly data on water production. For the City of Berkeley, EBMUD would implement the emergency regulations and it is authorized to penalize users who do not comply.

- [SWRCB Media Release on Emergency Regulation](#) (07/15/14).
- [Emergency Water Conservation Regulations Portal](#) (07/23/14).
- [Mandatory Water Conservation Regulation](#) in effect on July 29, 2014:
These regulations include **Prohibitions for ALL urban water users in California:**
 - The application of potable water to any driveway or sidewalk.
 - Using potable water to water outdoor landscapes in a manner that causes runoff to adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures.
 - Using a hose that dispenses potable water to wash a motor vehicle, unless the hose is fitted with a shut-off nozzle.
 - Using potable water in a fountain or decorative water feature, unless the water is re-circulated. Recycled water is not mandated, but encouraged for fountain use.

ENVIRONMENTAL SUSTAINABILITY

The City's response addresses both the immediate need to address the current crisis as well as a comprehensive approach to move toward more sustainable water use in the face of changing climatic conditions. The response 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 that mitigate climate change by sequestering carbon, increasing resilience to the urban heat island effects of climate change and protect soils and water quality in our creeks and the Bay.

POSSIBLE FUTURE ACTION

If EBMUD increases the reduction target, the City will plan adjustments to comply with requirements. In the meantime, staff will adjust responses to maximize water conservation without risking vital landscaping.

Council will be asked to approve a contract with an energy services company (ESCO) for design, financing and construction of water and energy efficiency measures before the end of the fiscal year. The objective of working with an ESCO is 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 to parks, landscapes, medians and buildings require considerable infrastructure expenditures, most of which are not included in the current City budget. Staff plans to issue a Request for Proposals for comprehensive

efficiency improvements, including design, construction, financing and performance monitoring. The projects would be financed through annual savings from utility costs, as is being done for the LED streetlight project.

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Resources Links:

1: February 2014 report and recommendation from Councilmembers:

www.cityofberkeley.info/Clerk/City_Council/2014/02_Feb/Documents/2014-02-25_Item_17_Water_Conservation_Measures.aspx

2: February 2014 memo to Council: www.cityofberkeley.info/uploadedFiles/Clerk/Level_3_-_General/Drought%20Response%20022814.pdf

3: March 2014 press release: Berkeley to Cut Water Use:

www.cityofberkeley.info/City_Manager/Press_Releases/2014/2014-03-06_City_of_Berkeley_to_Cut_Water_Use_by_10_During_Drought_Year.aspx

4: July 2014 Public Works and Community Environmental Advisory Commissions report:

www.cityofberkeley.info/Clerk/City_Council/2014/07_Jul/Documents/2014-07-08_Item_45a_City_of_Berkeley_Water.aspx

5: July 2014 Staff companion report:

www.cityofberkeley.info/Clerk/City_Council/2014/07_Jul/Documents/2014-07-08_Item_45b_Water_Conservation_Measures.aspx

6: January 2014 Governor Brown drought emergency proclamation:

<http://gov.ca.gov/news.php?id=18368>

7: April 25 Governor Brown Executive Order to State Water Board to adopt an emergency regulation: <http://gov.ca.gov/news.php?id=18496>.

8: July 2014 State Water Resources Control Board emergency regulation Fact Sheet:

www.swrcb.ca.gov/publications_forms/publications/factsheets/docs/fs072914manwaterreg.pdf

9: SWRCB Media Release on Emergency Regulation (07/15/14):

www.swrcb.ca.gov/press_room/press_releases/2014/pr071514.pdf.

10: Emergency Water Conservation Regulations Portal (07/23/14):

www.swrcb.ca.gov/waterrights/water_issues/programs/drought/emergency_regulations_waterconservation.shtml

11: Mandatory Water Conservation Regulation in effect on July 29, 2014:

www.swrcb.ca.gov/publications_forms/publications/factsheets/docs/fs072914manwaterreg.pdf.

12: EBMUD Mandatory outdoor watering restrictions in effect for EBMUD residents and

businesses: www.ebmud.com/about/news/releases/2014/08/12/mandatory-outdoor-watering-restrictions-effect-for-ebmud-residents-an