BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD POLICY COMMITTEE MEETING

May 13, 2016

Correspondence and media coverage of interest between April 18, 2016 and May 11, 2016

Correspondence

Date: April 20, 2016
From: Nicole Sandkulla, BAWSCA CEO/General Manager
To: The Hon. Francesca Vietor, SFPUC President
Subject: Comments on the Proposed March 2016 Revised Water System Improvement Program (WSIP)

Date: April 19, 2016
From: Sean Charpentier, Assistant City Manager
To: Hon. Mayor and Members of the City Council, East Palo Alto
Subject: Advocate for securing up to an additional 1.5 million gallons per day of water supply

Media Coverage

Drought:

Date: May 11, 2016
Source: Daily Journal
Article: New drought mandates to trickle down: San Mateo County customers could see conservation restrictions eased

Date: May 10, 2016
Source: The Press Enterprise
Article: California Drought: Dry spell leaves area lakes low and dry

Date: May 9, 2016
Source: San Jose Mercury News
Article: California drought rules eased significantly

Date: May 3, 2016
Source: Sacramento Bee
Article: Kamala Harris, silent on dams, says she would protect species law

Date: May 3, 2016
Source: KCRA
Article: Drought-stricken California boosts conservation for March

Date: May 2, 2016
Source: Water Deeply
Article: Silicon Valley's Biggest Drought Lessons

Date: April 21, 2016
Source: The Weather Channel
Article: California's Drought Emergency is Over, State Water Districts Say

Conservation

Date: May 10, 2016
Source: Appeal Democrat
Article: Temporary water restrictions now permanent

Conservation, cont'd.

Date: May 9, 2016
Source: Maven
Article: Governor Brown Issues Order to Continue Water Savings as Drought Persists

Date: May 4, 2016
Source: San Jose Mercury News
Article: California residents cut water use 24.3 percent in March

Date: May 4, 2016
Source: Influential Women
Article: Felicia Marcus: Controlling the Spigot in California

Date: April 29, 2016
Source: Water Deeply
Article: Will California Ditch Water Conservation Mandate?

Date: April 27, 2016
Source: Manteca Bulletin
Article: New Water Source for Course

Water Management:

Date: May 10., 2016
Source: AgNet
Article: New Regulations Will Guide the Sustainable Groundwater Management Plans of California

Date: May 10, 2016
Source: Modesto Bee
Article: Water rights will be next big California fight

Date: May 10 2016
Source: East Bay Times
Article: California needs more water storage

Date: May 5, 2016
Source: ACWA News
Article: It's "Go Time" for Improving California's Voluntary Water Market

Date: May 4, 2016
Source: Fresno Bee
Article: State must brace for big water supply changes

Date: April 30, 2016
Source: Modesto Bee
Article: Oakdale Irrigation District quietly cancels water sale

Date: April 27, 2016
Source: Water Deeply
Article: Is Silicon Valley Key to Delta Tunnels Plan?

Water Management, cont'd.:

Date: April 21, 2016
Source: Water Deeply
Article: Five Things to Know About Desalination

Date: April 19, 2016
Source: Modesto Bee
Article: MID raises farm water prices 20 percent

Date: April 19, 2016
Source: San Jose News
Article: New Bay Area dam project reaches major milestone

Date: April 18, 2016
Source: Water Deeply
Article: Drought Hits Coastal Fish and Farms Hard

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BAWSCA
Bay Area Water Supply & Conservation Agency

April 20, 2016

The Honorable Francesca Vietor, President
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102

SUBJECT: Comments on the Proposed March 2016 Revised Water System Improvement Program (WSIP)

Dear President Vietor:

On March 25, 2016, the San Francisco Public Utilities Commission (SFPUC) notified the Bay Area Water Supply and Conservation Agency (BAWSCA) that it would be considering proposed changes to the Water System Improvement Program (WSIP) in accordance with the Wholesale Regional Water System Security and Reliability Act (AB 1823, Water Code Section 73500 *et seq.*)

The efforts of Mr. Wade and his staff to meet with BAWSCA representatives to discuss the proposed changes and supporting documentation for the recommendations are much appreciated. Based on a thorough review of these documents and the conversations with SFPUC staff, BAWSCA has developed the following findings and recommendations for consideration by the SFPUC.

Schedule: Have the completion dates for individual WSIP projects been extended and if so, why? Is there an increased risk to public health and safety for any schedule extension?

Schedule Finding 1: The SFPUC is proposing schedule extensions for 10 individual WSIP projects plus the associated Program Management project. For two projects, the Commission recently adopted schedule changes on December 8, 2015 and are seeking additional time extensions in the current proposal: Seismic Upgrade of BDPL Nos. 3 & 4 (8 month extension) and Harry Tracy WTP Long-Term Improvements (5 month extension). Two project schedule extensions are for projects critical to meeting the WSIP water supply Level of Service (LOS) goal: Calaveras Dam Replacement Project (7 month extension) and Regional Groundwater Storage and Recovery Project (12 month extension). Delays in these latter two projects extend the time over which the water customers are exposed to increased level of dry-year and/or emergency water supply shortages.

Schedule Finding 2: The proposed extensions in 4 projects (New Irvington Tunnel, Seismic Upgrade of BDPL Nos. 3 & 4, BDPL Reliability – Tunnel, Harry Tracy WTP Long-Term Improvements) is acknowledged to have minimal impact on LOS as these projects are already in service or can be quickly placed in service if the need arises.

Schedule Recommendations: **BAWSCA recommends that the Commission direct staff to:**

1. **Confirm that the SFPUC can meet projected water demands and drought reliability LOS goal of no more than 20% system-wide rationing in any single year despite the proposed project delays, and provide a status report to the Commission on actions taken by September 2016.**

2. **Include in the required AB 1823 report to the State a specific discussion of the impact (and associated mitigations) on public health and safety in the event that the refill of the Calaveras Dam is delayed as it pertains to planned shutdowns and unplanned emergency outages of the Hetch Hetchy System due to a Mountain Tunnel failure or other event.**

3. **Include in the required AB 1823 report a specific discussion of the impact of the delay in completing the final two wells of the Regional Groundwater Storage and Recovery Project as it pertains to achieving its full LOS contribution.**

Scope: What is the impact of the proposed revisions on the individual project scopes as compared to the currently adopted scopes? Do the projects, as proposed, continue to meet the WSIP LOS goals?

Scope Finding 1: Scope changes are being proposed for the Calaveras Dam Replacement Project and its Alameda Creek Diversion Dam subproject to address known issues. However, the "Top 10 Open Risks Ranked by Risk Score" as reported in the *Q2 FY 2015-2016 WSIP Regional Projects Quarterly Report* are all associated with the Calaveras Dam Replacement project. Therefore, BAWSCA remains concerned that there is a high potential that additional scope changes may be needed to deal with identified risks which will impact the ability to meet the LOS goal as planned.

Scope Finding 2: Minor scope changes to the Alameda Creek Recapture Project (ACRP) were made to conform to final design features. However, BAWSCA remains concerned that the ACRP may not provide the necessary yield to meet the water supply LOS goal. As the project has not completed its full environmental review process, this uncertainty remains and increases the exposure of the water customers to impacts resulting from water supply reductions in response to drought.

Scope Recommendations: **BAWSCA recommends that the Commission direct staff to:**

1. **Include, as part of the regular quarterly presentation to the Commission a specific discussion on achieving the overall Water Supply LOS goal, an update on the progress of the ACRP and any environmental conditions imposed on the project (including potential impacts to scope, schedule, and budget) and present an analysis on the impact, if any, to the SFPUC's ability to meet the Water Supply LOS goal.**

Budget: What is the impact of the proposed revisions on the individual project budgets and overall WSIP budget as compared to the currently adopted budget?

Budget Finding 1: The SFPUC is proposing a $86.5M increase in the Regional WSIP budget. To fund this proposed cost increase, savings from expected "underruns" in the Local WSIP ($6.5M) and additional allocations in the SFPUC Water Enterprise FY 2016-17 through 2025-26 10-Year Capital Plan (Capital Plan) ($80.0M) are available.

Budget Finding 2: The overall fiscal impact of increased costs was explained as being primarily offset by lower financing costs.

Budget Finding 3: The Director's Reserve fund has been replenished and is sufficient to cover the remaining risks at the 80% confidence level.

Budget Recommendations: **BAWSCA recommends that the Commission direct staff to:**

1. **Include in the required AB 1823 report a discussion of the impact of the proposed changes on public health and safety including the proposed changes to the SFPUC Water Enterprise Capital Plan.**

2. **Confirm that the identified funding sources are available and that they do not affect water rates or jeopardize implementation of the Water Enterprise 10-Year CIP goals.**

3. **A final accounting of the actual financing costs of the WSIP is needed. The $471.7M carried in program cost summaries can be replaced by actual costs when all the bond sales for the Program are complete. BAWSCA requests that the actual cost of financing the WSIP be included before future budget adjustments are made.**

4. **Direct staff to prepare a report to the Commission within 60 days of adoption of the additional $80M allocation to the WSIP that identifies cost savings from more efficient practices and procedures that have been implemented, and a plan to ensure that increasing cost-efficient practices will continue to be implemented through the completion of the WSIP. The report should also confirm the sources of funding and demonstrate that sufficient contingency is in place to deliver the Program within the new budget.**

BAWSCA continues to support the SFPUC's efforts to implement the WSIP on time, on budget, and within scope for the protection of the 2.6 million residents and associated businesses that rely on the San Francisco Regional Water System for a reliable supply of high quality water.

Sincerely,

Nicole Sandkulla
Chief Executive Officer/General Manager

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cc: Harlan L. Kelly, Jr., SFPUC General Manager
Kathy How, SFPUC Assistant General Manager – Infrastructure
Dan Wade, SFPUC Program Director, WSIP
BAWSCA Board of Directors
BAWSCA Water Management Representatives
Robert Brownwood, California Division of Drinking Water
Fred Turner, California Seismic Safety Commission
Allison Schutte, Hanson Bridgett

CITY OF EAST PALO ALTO

OFFICE OF THE CITY MANAGER
2415 UNIVERSITY AVENUE
EAST PALO ALTO, CA 94303

P&A Item #:10A

City Council Agenda Report

Date: April 19, 2016

To: Honorable Mayor and Members of the City Council

Via: Carlos Martínez, City Manager

From: Sean Charpentier, Assistant City Manager

Subject: Advocate for securing up to an additional 1.5 million gallons per day of water supply

Recommendation

Adopt a Resolution advocating for an additional water supply of up to 1.5 million gallons per day (mgd), and authorizing the City Manager to work with the City's partners at BAWSCA and the SFPUC to secure it.

Alignment with City Council Strategic Plan

This recommendation is primarily aligned with:

- Priority #2: Enhance Economic Vitality
- Priority #5: Create a Healthy Community

Background

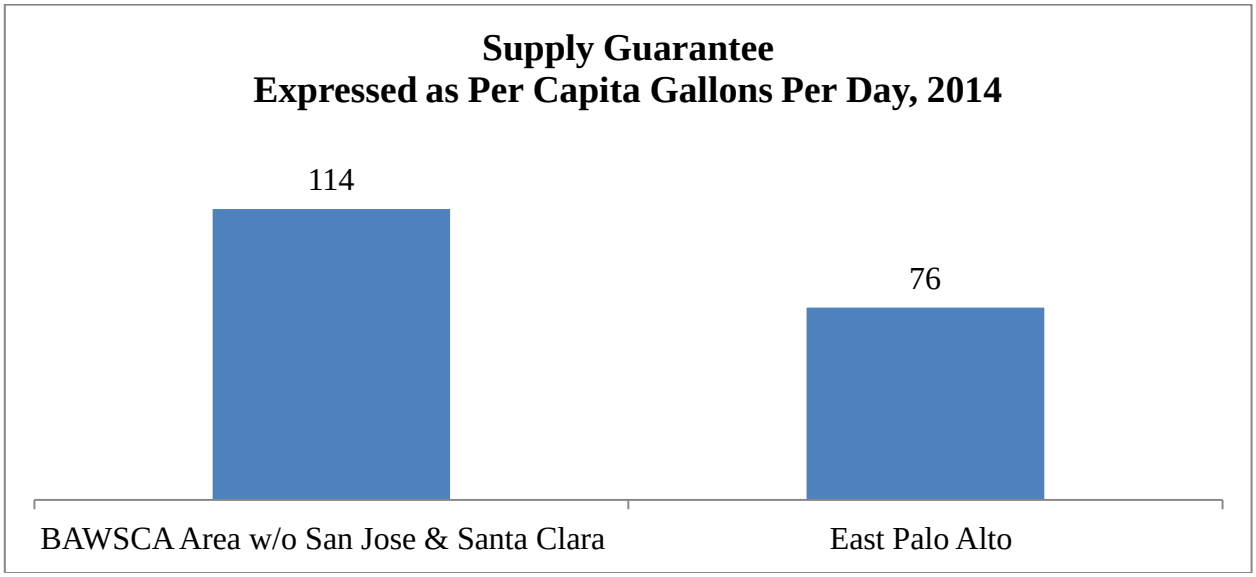
The City of East Palo Alto relies mainly on the San Francisco Public Utilities Commission (SFPUC) water system for its water supply and does not have the option to connect to another water supplier like the Santa Clara Valley Water District. There are two small water mutual companies that serve a few hundred properties in East Palo Alto.

The City of East Palo Alto is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA), which advocates on behalf of the 26 wholesale customers that receive SFPUC water. In 2009, the City of East Palo Alto, along with 25 other Bay Area water suppliers signed the Water Supply Agreement with San Francisco, supplemented by an individual Water Supply Contract. The Water Supply Agreement is available at: http://www.sfwater.org/modules/showdocument.aspx?documentid=8632
and the BAWSCA Annual Survey is available at:
http://bawsca.org/pdf/reports/BAWSCA_FY13-14_AnnualSurvey.pdf

These contracts, which expire in 25 years, provide for a 184 mgd Supply Assurance to the SFPUC's wholesale customers collectively. The Supply Assurance is perpetual and extends beyond the expiration of the 2009 Water Supply Agreement. East Palo Alto's Individual Supply Guarantee (ISG) is 1.963 MGD (or approximately 2,199 acre feet per year).

Each individual's members ISG reflects a variety of factors, including history in the SFPUC system. When the City incorporated in 1983, the East Palo Alto County Waterworks District which covered East Palo Alto and a portion of Menlo Park was dissolved. As a result, the City was required to transfer a 0.217 mgd to Menlo Park, ending up with a 1.963 mgd allocation.

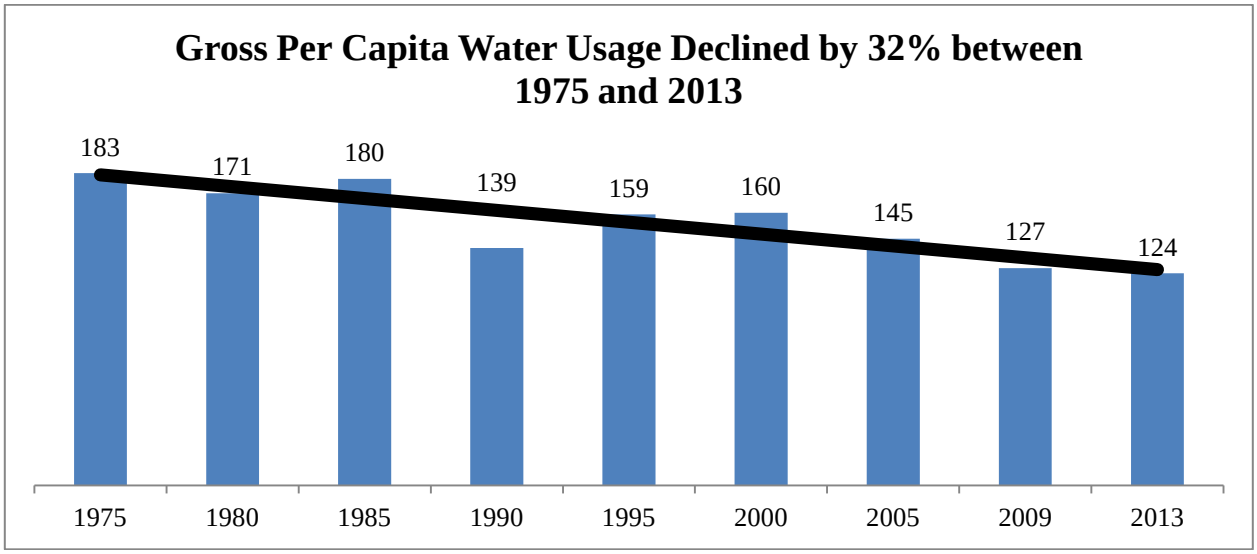
In 2014, East Palo Alto's ISG equaled approximately 76 gallons per capita per day (1.96 million gallons divided by population of 25,927). The BAWSCA member agencies collectively have a Supply Guarantee of approximately 114 gallons per capita per day (184 million gallons divided by population of 1,608,952).



Source: Attachment 2, Table 3.

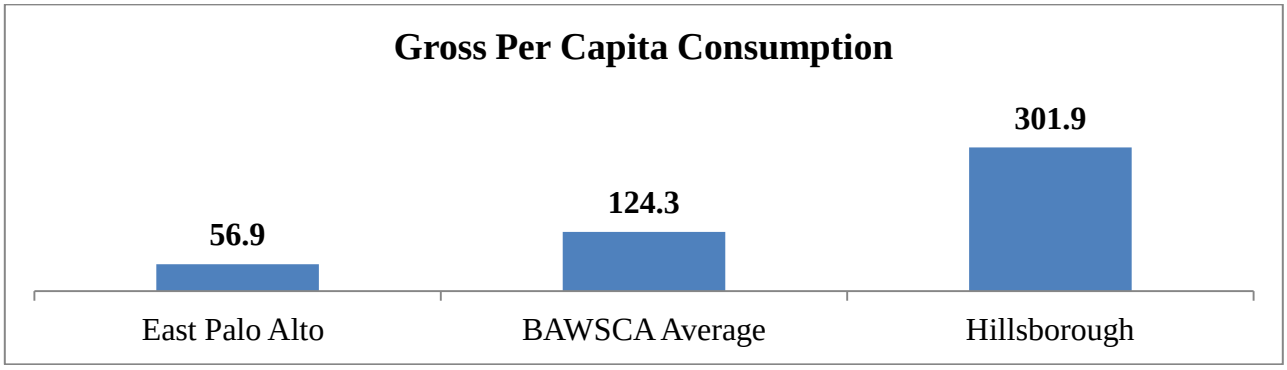
This number equals the per capita contractual amount of water available under East Palo Alto's ISG and the collective supply guarantee of all BAWSCA members. Portions of the cities of Santa Clara and San Jose receive SFPUC water. However, they are not included in the population in the graph above because neither city has an Individual Supply Guarantee.

Due to increasing water efficiency, demographic and economic changes, and increasing diversity of supply, per capita water use within the BAWSCA member agencies has been declining. Between 1975 and 2013, the Gross Per Capita usage has declined by 32%.



Source: BAWSCA Annual Survey, Table 7C

However, there is wide variation in usage among the BAWSCA members. Individual usage depends on the land uses, economic, and demographic factors. The BAWSCA members' average gross per capita per day usage is 124.3 gallons.



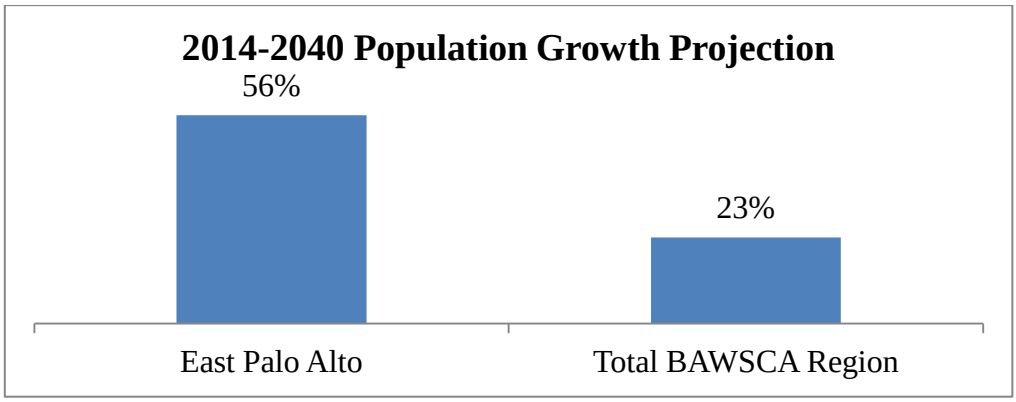
Source: BAWSCA Annual Report, Table 7B.

At 56.9 gallons per day per capita, East Palo Alto has the lowest daily per capita usage. Hillsborough has one of the highest uses at 301.9 gallons per capita per day. See Attachment 2, Figure 7b for more detailed information.

Collectively, the SFPUC wholesale customers do not use the full 184 mgd, and the future projections through 2040 do not indicate the full usage. Currently, the SFPUC wholesale customers use about 80% of the total 184 mgd. The remainder is available from the SFPUC Regional Water System, but not sold.

Usage among BASWCA Wholesale members ranges from 124.9% of its ISG for the Purissima Hills Water District to 49.2% of its ISG for the City of San Bruno (BAWSCA Annual Survey Table 2A).

The demand projections in Table 3D-1 of the BAWSCA Annual Survey indicate that in 2040, there will be between 15 mgd and 25 mgd in excess supply. The BAWSCA Annual Survey projects that the population in East Palo Alto will increase by 56% by 2040, and that of the entire BAWSCA service area will increase by 23% by 2040.



Source: Table 6, BAWSCA Annual Survey

The 2009 Water Supply Agreement with the SFPUC includes specific requirements to address requests from the Cities of Santa Clara and San Jose. Section 3.13 commits the SFPUC to review the possibility of making Santa Clara and San Jose permanent members with ISGs equal to at least 9 MGD. The 2009 Water Supply Agreement does not say anything about East Palo Alto's need for additional water supply. The 2009 Water Supply Agreement includes at least two mechanisms to address water shortfalls.

First, the 2009 Water Supply Agreement includes Section 3.04 that allows SFPUC wholesale customers to execute permanent transfers of their ISG to another wholesale customer. To date, this has not occurred. This is one possibility that East Palo Alto and BAWSCA are actively exploring.

Second, the 2009 Water Supply Agreement also retains the possibility of increasing the SFPUC's supply of water from its watersheds. Section 3.16(a) states: San Francisco's future actions may include an offer to increase the Supply Assurance at the request of some or all its Wholesale Customers." The decision is to be made by the SFPUC by December 31, 2018.

<u>San Francisco PUC Water Map</u>

The SFPUC is preparing a planning and visioning document called the "2035 Water Map: A Water Management Action Plan for the SFPUC." The SFPUC intends to present the document to the SPFUC Commissioners in May 2016. As currently envisioned, the 2035 Water Map seeks to address three questions:

1. How should the SFPUC maintain delivery reliability while addressing reductions in supply availability caused by new in stream flow reductions?

2. What options should the SFPUC consider to make the cities of San Jose and Santa Clara permanent customers of the Regional Water System?
3. Should the SFPUC revise its current performance objective on rationing in order to increase drought year reliability of the Regional Water System?

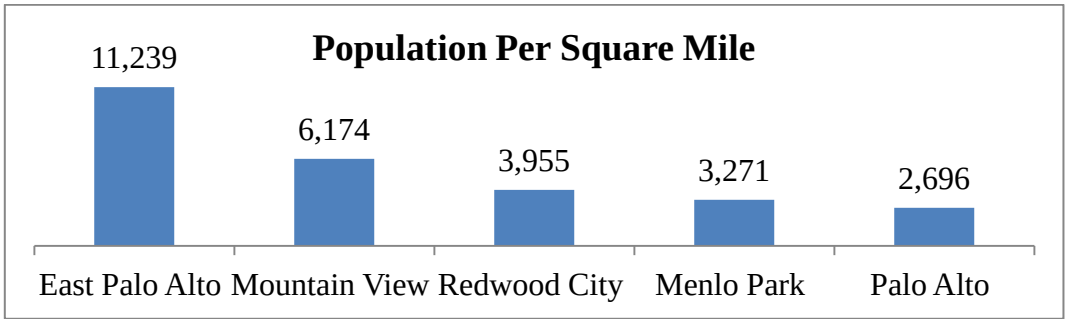
City staff have been working with BAWSCA and the SFPUC, and have requested that the 2035 Water Map include a fourth question:

4. What options does SFPUC have to ensure that East Palo Alto has an additional 1.5 mgd for its planned growth?

The recommended City of East Palo Alto resolution requests that the SFPUC add this question to the 2035 Water Map, and that the SFPUC and BAWSCA create mechanisms that would empower and incentivize the BAWSCA members that are not using their full water supply to transfer a portion to other cities like East Palo Alto that have significant demand for new water supply.

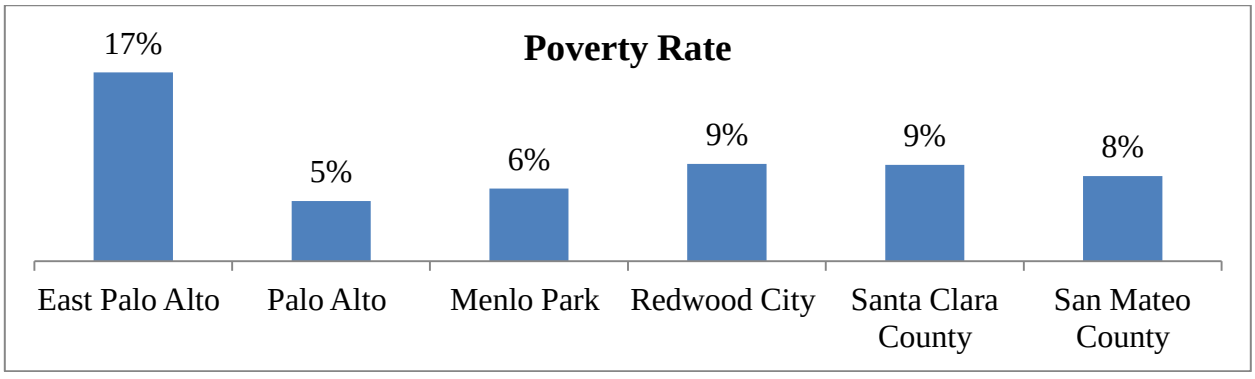
East Palo Alto Background

East Palo Alto occupies a unique position among cities in Silicon Valley. East Palo Alto is the newest and smallest city in Silicon Valley. At approximately 2.5 square miles, East Palo Alto has one of the highest population densities.



Source: 2010 US Census Bureau

East Palo Alto's poverty rate is typically twice that of San Mateo County.



Source: 2010 US Census Bureau

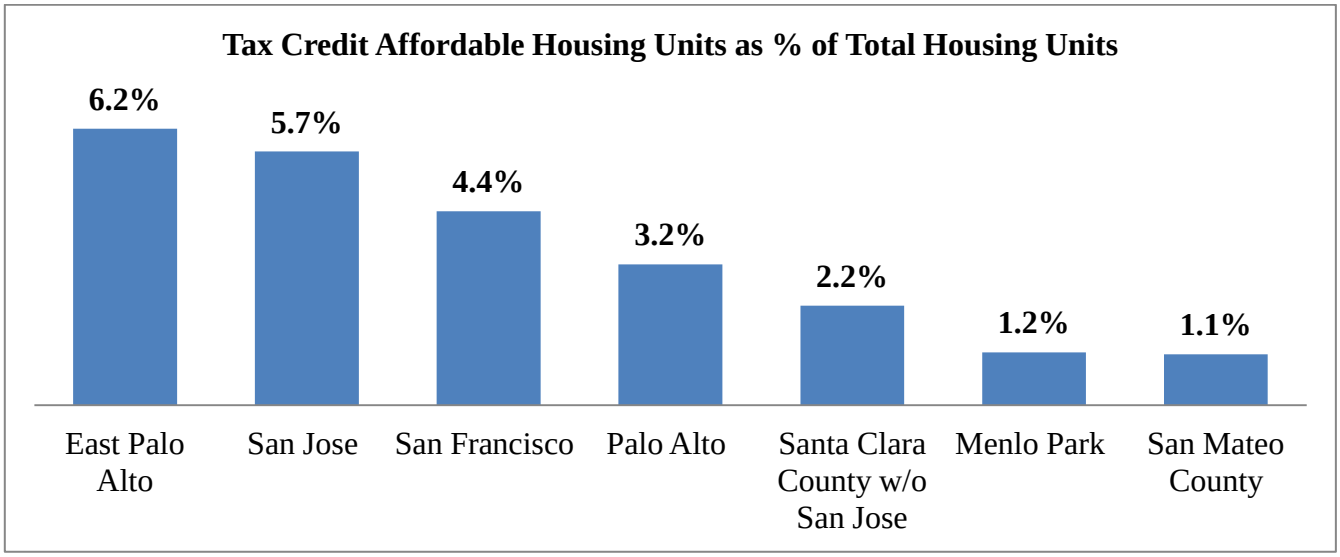
East Palo Alto is unique among cities in the Bay Area because controlled for size East Palo Alto provides more affordable housing than any other city in Silicon Valley. Thirty-nine (39%) of East Palo Alto's housing units are affordable housing in the form of income restricted units, deed restricted affordable ownership units, and affordable units within the City's Rent Stabilization program.

Table 1: Affordable Housing Units

	Units
Affordable Income Restricted Rentals	488
Affordable Ownership	90
Affordable Rent Stabilized	2,500
Total Affordable Housing Units	**3,078**
Total Housing Units	**7,819**
Percent Affordable Housing	**39%**

Source: 2010 US Census Bureau, http://www.treasurer.ca.gov/ctcac/projects.asp, Attachment 2, Table 4

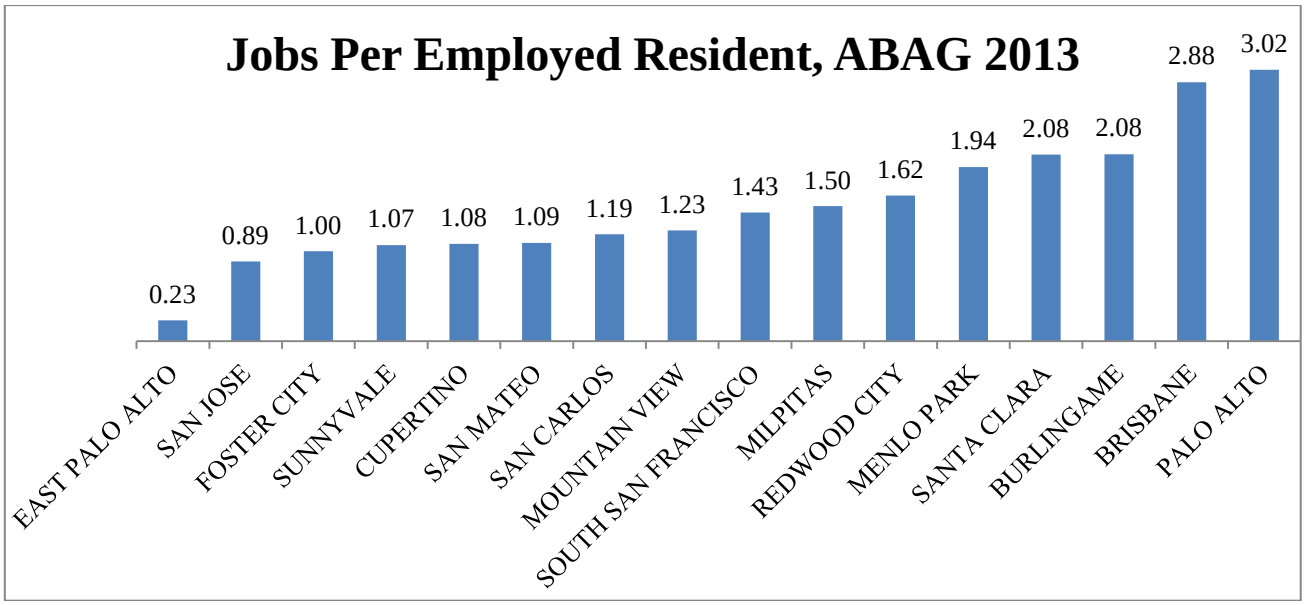
East Palo Alto has 488 units of multifamily rental housing that were developed using Low Income Housing Tax Credits. That equals 6.2% of the total housing units in the City, which makes East Palo Alto among the cities with the highest percentages of total housing developed with Low Income Housing Tax Credits.



Source: US Census, http://www.treasurer.ca.gov/ctcac/projects.asp, Attachment 2, Table 5

Note that this graph does not include other forms of affordable housing such as rent stabilized units, deed restricted affordable units, Housing Authority Units, and other forms of affordable housing.

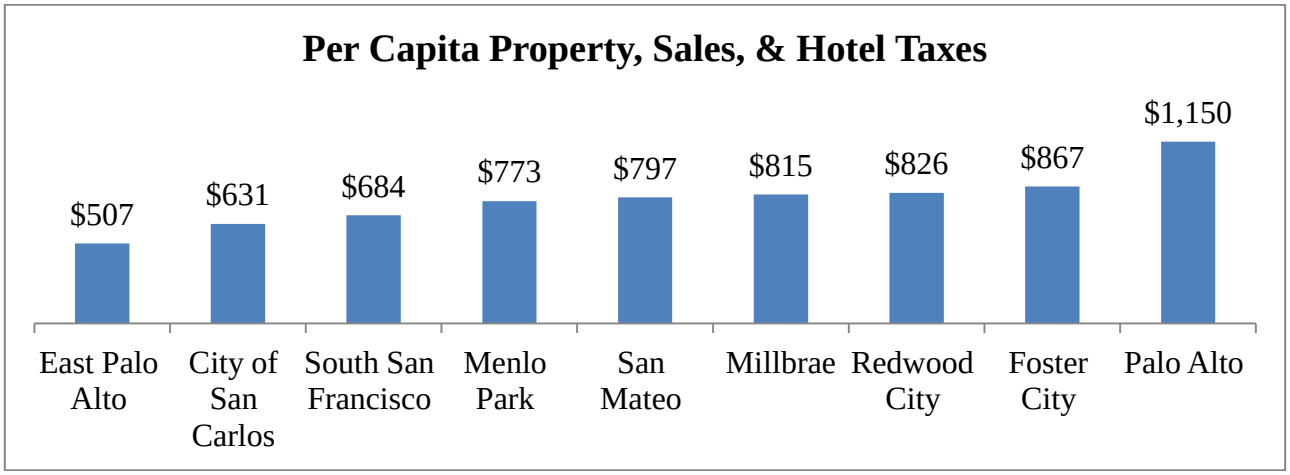
In addition to the 3,334 restricted affordable units, East Palo Alto has 0.23 jobs per employed resident. This low ratio reflects the limited commercial development in East Palo Alto, and that most East Palo Alto residents have to drive to jobs in other Silicon Valley Cities.



Source: ABAG 2013

East Palo Alto subsidizes job growth in other cities throughout Silicon Valley because it has an extremely low jobs per employed resident ratio of 0.23 and 39% of all East Palo Alto housing units are affordable.

The lack of commercial development has led to a shallow revenue base that lacks diversity. Correspondingly, East Palo Alto has lower general fund revenue and lower per capita property tax, sales tax, and transient occupancy tax than surrounding cities.



Source: CAFRs, Census, Attachment 2, Table 6.

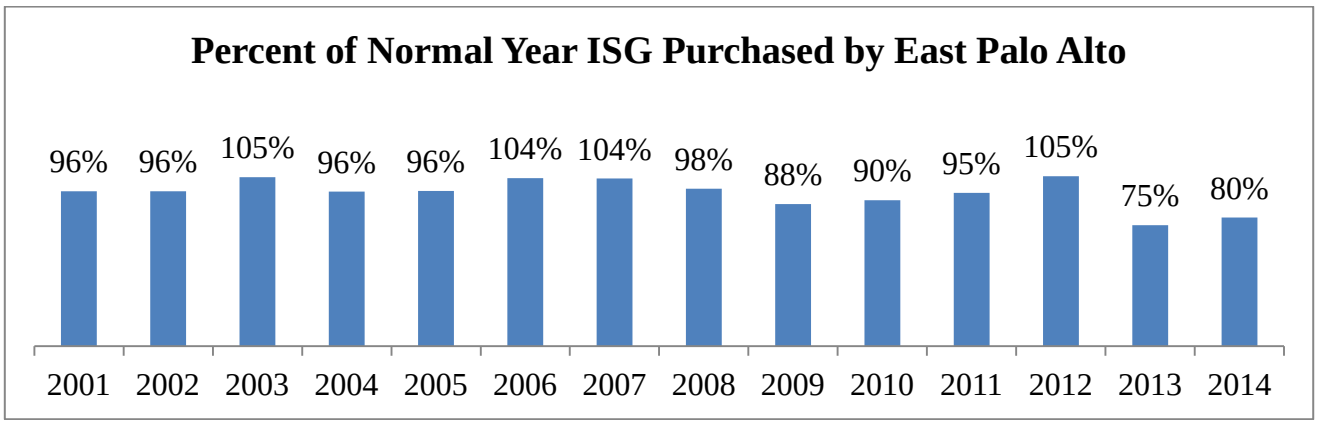
East Palo Alto generates significantly less general fund revenue because the imbalanced land use that has resulted in 0.23 jobs per employed resident. Due to the limited revenue base, East Palo Alto has experienced steady declines in its staffing levels, from 130 full time employees in 2002 to 105 in 2015. This trend will make it increasingly difficult to meet the Police response times and level of services that the residents demand and deserve. The lack of water limits the City's ability to develop affordable housing, improve its fiscal situation, and meet its economic development goals.

East Palo Alto Water Allocation and Usage

Water planning looks at normal year water supply conditions and dry year (or drought conditions). The City of East Palo Alto has an Individual Water Supply Guarantee of 2,199 acre feet per year (AFY) from the SFPUC under normal year conditions. This amount is equivalent to 1.96 million gallons per day. During dry years, as determined by the SFPUC, the City's guarantee will decrease in accordance with adopted plans and the specific hydrologic conditions. The SFPUC has not instituted dry year reductions nor declared a drought. However, the State of California has imposed drought reductions on all water users in California. All BAWSCA members have been meeting their state mandated drought reductions. In June 2015, the State imposed mandatory drought water restrictions on all water suppliers. East Palo Alto's target was to achieve an 8% reduction between June 2015 and February 2016. East Palo Alto achieved a 19% water reduction during that period. See: http://projects.scpr.org/applications/monthly-water-use/city-of-east-palo-alto/

The lack of supply of water has been a consistent conclusion from the adopted Urban Water Management Plans (UWMP) of 2005, 2010, the updated 2013 UWMP; the 2012 Water Supply Assessment for the Ravenswood Specific Plan; and the 2016 Water Supply Assessment for the General Plan Update.

The graph below displays the percentage of the Normal Year ISG that has been purchased by East Palo Alto between 2001 and 2015.



Source: Attachment 2, Table 7.

On average, East Palo Alto has purchased approximately 95% of its normal year ISG. East Palo Alto's purchases have exceeded the ISG four times in the last 14 years; most recently in 2012. See Table 8 in Attachment 2 for detailed information.

The last three years have experienced significant volatility in water usage that staff attribute to drought reductions. In addition, these numbers do not include the water usage for the three major entitled, but not constructed, projects with 166 new residential units and 215,000 square feet of commercial development (Edenbridge Homes, Sobrato Office project, and 4 Corners mixed-use project). The City's updated Urban Water Management Plan, which will be completed before July 2016, will provide more details on past use.

East Palo Alto Existing and Future Water Demand

The City of East Palo Alto adopted and certified its Ravenswood 4 Corners Transit Oriented Development Specific Plan and Program EIR in September 2012. The EIR Mitigation for the lack of water supply included the following Specific Plan Policy.

Policy UTIL-2.2: Before individual development projects are approved in the Plan Area, require the developer to demonstrate verifiable, enforceable proof that either they have secured new water supplies to serve the new development or that the proposed development will create no net increase in total water demand in East Palo Alto. Ensure that environmental review is carried out for augmentations to the supply from additional groundwater pumping in the Specific Plan area and within a quarter mile radius.

The City is updating its General Plan, which includes the Ravenswood Specific Plan.

Table 2: General Plan Growth Projections

	Net New Units	Net Retail Sq. Ft.	Net Office Sq. Ft	Net Industrial Sq. Ft.
Ravenswood/4 Corners Area	835	112,400	1,235,853	267,987
Westside	900	45,000		
2nd Units on single-family parcels	119			
All other Areas Citywide	665	176,006	704,000	
Total	**2,519**	**333,406**	**1,939,853**	**267,987**

The City conducted a Water Supply Assessment for the General Plan Update. The Water Supply Assessment indicated a need for approximately 1,662 additional acre feet per year (1,218 + 444), or approximately up to 1.5 million gallons per day by 2040. See Attachment 3. This number will be refined when the City completes is Urban Water Management Plan by July 2016. However, the impact of lack of water is not confined to future years. The processing of entitlements for the following projects has been delayed due to the lack of water.

- An affordable Housing project with 120 potential units on City –owned property at 965 Weeks Street.

- A new private school (the Primary School) for up to 500 students at the end of Weeks. This project proposes including comprehensive wrap around services, including health care, for each student.
- A 200,000 square foot office project at 2111 University Avenue. This project proposes an office project at a prominent location at University Ave. and Donohoe St. The project could create up to 650 new jobs.
- A 1.4 million square feet office project at 2020 Bay Road, the former Romic location. This project could provide up to 4,500 new jobs, increase the commercial office square footage by 215%, and remediate the former Romic site, which is one of the most contaminated sites in the City.

To be successful, these projects will all require community meetings, environmental analysis, and discretionary planning and environmental approvals from both the Planning Commission and City Council. However, the lack of water significantly complicates the planning process as projects cannot be approved without proof of water supply. The inability to process these applications jeopardizes the City of East Palo Alto's ability to continue its leadership role in providing affordable housing, and to analyze projects that could improve the jobs housing imbalance, improve the financial stability of the city, provide significant jobs, and improve the City's current level of services.

East Palo Alto Actions to Address its Water Issue

The City of East Palo Alto has been working since before 2010 to address its water crisis. In addition to the supply challenge, East Palo Alto does not have a system of emergency supply or storage in case of an interruption in the SFPUC supply. The City has been working on solutions to the water supply and emergency storage issue for years, and significant progress has been made in the last 24 months.

The major strategies include:

- 2010 – The City prepared the Gloria Way Well Feasibility Study that identified the rehabilitation of Gloria Way Well and investigation of a new groundwater well at Pad D site. It also identified potential locations for emergency storage facilities.
- December 16, 2014 –The City Council accepted the Water Safety Strategy Blueprint
- Pad D – Drilled test well in 2014. Awarded a contract for design and environmental review in November 17, 2015.
- Gloria Way Well –Adopted Mitigated Negative Declaration in June 4, 2013. Securing State approval of the reactivation in 2015. Proceeding with pilot testing and completing the design.
- 2014 & 2015 – Applied for and secured two rounds of $100,000 and $700,000 in CDBG funding, $1.1 million from the State and Tribal Assistance Grant (STAG), and $1.5M in State IRWMP funding for groundwater projects, including Pad D and Gloria Well.

- 2015 – Adopted the first Groundwater Management Plan in San Mateo County's southern basin to ensure sustainable management of groundwater resources.
- 2015 – City Council adopted a $6.75 monthly capital surcharge for water supply and storage projects. City Council also adopted a $6.24 monthly increase for replacing the aging meters, which will increase water usage efficiency.
- Recycled Water - City participates in regional recycled water activities. However, recycled water is best for irrigation, and East Palo Alto has few parks, small residential lots with small lawns, and no golf courses or major irrigation users.

Next Steps

After the City Council adopt a resolution advocating for an additional water supply of up to 1.5 mgd, and authorizing the City Manager to work with the City's partners at BAWSCA and the SFPUC to secure the additional water, staff will forward the adopted resolution to both BAWSCA and the SFPUC boards, to officially work with all interested parties to define the process and terms, that will be brought for Council consideration, to execute a transfer agreement.

Attachments:

1. Resolution
2. Attachment 2, Detailed Tables
3. General Plan Update Water Supply Assessment

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RESOLUTION NO. 4723

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EAST PALO ALTO ADVOCATING FOR AN ADDITIONAL WATER SUPPLY OF UP TO 1.5 MGD, AND AUTHORIZING THE CITY MANAGER TO WORK WITH THE CITY'S PARTNERS AT THE BAWSCA AND THE SFPUC TO SECURE UP TO AN ADDITIONAL 1.5 MGD IN WATER SUPPLY

WHEREAS, the City of East Palo Alto is the youngest, smallest, most densely populated City in San Mateo County; and

WHEREAS, the City of East Palo Alto, when controlled for size, provides more affordable housing than any city in Silicon Valley; and

WHEREAS, approximately 40% of the total housing stock in the City of East Palo Alto is affordable housing (income restricted rental, rent stabilization units, or below market rate ownership units); and

WHEREAS, 6.2% of East Palo Alto's housing is income restricted affordable developed with Low Income Housing Tax Credits, compared to 1.1% for San Mateo County as a whole; and

WHEREAS, with 0.2 jobs per employed resident, the City of East Palo Alto has one of the lowest jobs per employed resident ratio in Silicon Valley; and

WHEREAS, the amount of housing and the affordability of housing in the City of East Palo Alto support commercial land uses that generate jobs and revenue in other Cities throughout Silicon Valley; and

WHEREAS, the per capita property tax, sales tax, and transient occupancy tax in the City of East Palo Alto is approximately 50% to 60% that of other Cities in Silicon Valley; and

WHEREAS, the City of East Palo Alto relies solely on the San Francisco Public Utilities Commission, (SFPUC) for water supply and does not have access to other major sources of water supplies or water suppliers; and

WHEREAS, the adopted Ravenswood Business District Specific Plan and the draft General Plan update represent a vision of a more balanced land use pattern with an improved jobs per employed resident ratio and improved financial stability; and

WHEREAS, the City of East Palo Alto is a permanent member of the Bay Area Water Supply and Conservation Agency (BAWSCA) and has signed the 2009 Water Supply Agreement between the SFPUC and its wholesale customers (the BAWSCA members); and

WHEREAS, the City of East Palo Alto has a normal year Individual Supply guarantee of 1.963 million gallons per day (mgd); and

WHEREAS, the City of East Palo Alto has one of the lowest gross per capita usage in BAWSCA and one of the lowest in the State of California; and

WHEREAS, the SFPUC Wholesale Customers used approximately 80% of their collective Individual Supply Guarantee of 184 mgd of water supply permanently allocated to them in 2014; and

WHEREAS, the 2009 Water Supply Agreement contains provisions for the transfer of Individual Water Supply Guarantees among SFPUC wholesale customers, however it has not been utilized to date; and

WHEREAS, the City of East Palo Alto has exceeded its normal year Individual Supply Guarantee four (4) years between 2001 and 2014 and on average used 95% of the normal year Individual Supply Guarantee; and

WHEREAS, a water shortfall has been identified in the 2005, 2010, and the updated 2013 Urban Water Management Plans; the Water Supply Assessment for the Ravenswood Business District 4 Corners Transit Oriented Development Specific Plan; and the General Plan Update Water Supply Assessment; and

WHEREAS, the certified EIR for the RBD 4 Corners Transit Oriented Development Specific Plan included the mitigating Specific Plan policy UTIL-2.2, which specified that prior to project approval, there must be proof of sufficient water supply or no net increase in water demand; and

WHEREAS, the Water Supply Assessment for the General Plan Update identified the need for up to an additional 1,666 AFY or 1.5 mgd to support the balanced growth envisioned in the adopted Ravenswood/4 Corners Specific Plan and Draft General Plan update; and

WHEREAS, the lack of water supply has immediate negative impacts on the City's ability to develop affordable housing and achieve its economic development goals; and

WHEREAS, the lack of water supply has required the city to delay an affordable housing project with up to 120 units on the City owned land at 965 Weeks Street; and

WHEREAS, developers have started the pre application process for a private school that could provide up to 500 students with comprehensive wrap around social and health services; a 200,000 square foot office project; and 1.4 million square feet of office development that would remediate one of the most contaminated parcels in the City; and

WHEREAS, the lack of water means that these projects cannot be brought to the Planning Commission or City Council for a vote until a source of water has been identified; and

WHEREAS, City of East Palo Alto has invested significant resources in diversifying its supply, including the Gloria Way Feasibility Study; designing, entitling, and securing State approval for the rehabilitation of Gloria Way Well; drilling a test well at Pad D and initiating the design and environmental review; adopting a Groundwater Management Plan in 2015; adopting a $6.75 water capital surcharge for water supply and emergency storage investments and a $6.24 rate charge for replacing inefficient meters; securing and allocating to groundwater well projects more than $3 million in outside funding, including State and Tribal Assistance Grant, Community Development Block Grant, and Integrated Resources Water Management Plan funds; and

WHEREAS, the City of East Palo Alto would seek to add up to 1.5 mgd to its Individual Supply Guarantee; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EAST PALO ALTO THAT the City Council advocates for an increased water allocation of up to 1.5 mgd from the SFPUC and authorizes the City Manager to work with the City's partners at BAWSCA and the SFPUC to secure up to an additional 1.5 mgd.

BE IT FURTHER RESOLVED that the City Council requests that the SFPUC include "How will the SFPUC ensure that East Palo Alto has an additional 1.5mgd of water supply for future growth?" as a fourth question in the SFPUC's 2035 Water Management Action Plan.

BE IT FURTHER RESOLVED that the City Council requests that the SFPUC and BAWSCA create mechanisms that would empower and incentivize the BAWSCA members that are not using their full water supply allocation to transfer a portion to other City's like East Palo Alto that have significant demand for new water supply.

[SIGNATURES ON FOLLOWING PAGE]

PASSED AND ADOPTED this 19th day of April 2016, by the following vote:

AYES: **GAUTHIER, ABRICA, RUTHERFORD, MOODY, ROMERO**
NAES:
ABSENT:
ABSTAIN:

SIGNED:

Donna Rutherford, Mayor

ATTEST:

Terrie Gillen, Deputy City Clerk

APPROVED AS TO FORM:

Marc G. Hynes, Interim City Attorney

ATTACHMENT 2

DETAILED TABLES

Table 3: Per Capita Water Supply BAWSCA Service Population and East Palo Alto

BAWSCA Service Area Population	Population (1)	Supply Guarantee MGD (2)	Supply Guarantee Per Day	Gallons Per Day Per Capita
BAWSCA Area Population	1,742,697	184	184,000,000	106
Santa Clara	15,286			
San Jose	118,459			
BAWSCA Area w/o San Jose & Santa Clara	1,608,952	184	184,000,000	114
East Palo Alto	25,927	1.96	1,960,000	76

(1) BAWSCA Annual Survey Table 6

(2) BAWSCA Annual Survey Table 2A

Table 4: Affordable Housing in East Palo Alto

Affordable Income Restricted Rentals		Affordable Units	Total Units	Source
The Woodlands	1761 Woodlands Avenue	22	22	TCAC
Gloria Way Community Housing	2400 Gloria Way	37	38	TCAC
Peninsula Park Apartments	1977 Tate Street	65	129	TCAC
Light Tree Apartments	1805 East Bayshore	93	94	TCAC
Runnymeade Gardens	2301 Cooley Avenue	77	78	TCAC
Nugent Square	2361 University Avenue,	31	32	TCAC
The Courtyard at Bay Road	1730 Bay Road	76	77	TCAC
Woodlands Newell (Site A)	1761 Woodland Ave.	47	49	TCAC
Woodlands Newell (Site B)	44 Newell Road			
University Avenue Senior Housing	2358 University Avenue	40	41	TCAC
Subtotal Affordable Income Restricted Rental		**488**	**560**	
Affordable Ownership				
Bay Oaks, Habitat	Gloria Way	23		City
Ownership BMRs	Throughout City	67		City
Subtotal Affordable Ownership		**90**		
Affordable Rent Stabilized				
Subtotal Rent Stabilization Program	**Throughout City, 95% on Westside**	**2,500**		City
Total Affordable Housing		**3,078**		Calc
Total Housing		**7,819**		Census
% Affordable Housing		**39%**		

Source: US Census, http://www.treasurer.ca.gov/ctcac/projects.asp, and City

Table 5: Tax Credit Units

	Total Housing	TCAC	TCAC %
East Palo Alto	7,819	488	6.2%
Menlo Park	13,085	156	1.2%
San Mateo County	271,031	3,102	1.1%
Santa Clara County	631,920	25,120	4.0%
Palo Alto	28,216	897	3.2%
San Jose	314,038	17,976	5.7%
Santa Clara County Minus San Jose	317,882	7,144	2.2%
San Francisco	376,942	16,501	4.4%

(1): Census, CTCAC http://www.treasurer.ca.gov/ctcac/projects.asp

Table 6: Per Capita Revenue

	East Palo Alto	City of San Carlos	South San Francisco	Menlo Park	San Mateo	Millbrae	Redwood City	Foster City	Palo Alto
Property Taxes	$9,411,000	$10,979,456	$21,589,866	$15,156,065	$52,000,000	$10,106,598	$42,438,190	$22,605,139	$35,300,000
Sales Taxes	$3,114,000	$6,548,812	$13,071,581	$6,444,292	$23,600,000	$2,269,198	$20,781,613	$3,684,962	$29,400,000
TOT	$2,453,000	$1,270,072	$11,174,017	$4,158,809	$6,412,500	$6,136,979	$5,262,280	$2,109,324	$12,300,000
Total	**$14,978,000**	**$18,798,340**	**$45,835,464**	**$25,759,166**	**$82,012,500**	**$18,512,775**	**$68,482,083**	**$28,399,425**	**$77,000,000**
Population	29,530	29,803	67,009	33,309	102,893	22,703	82,881	32,754	66,955
Per Capita	$507	$631	$684	$773	$797	$815	$826	$867	$1,150
Average Per Capita of all Cities, Without East Palo Alto				$846					
East Palo Alto Percent of Average				60%					

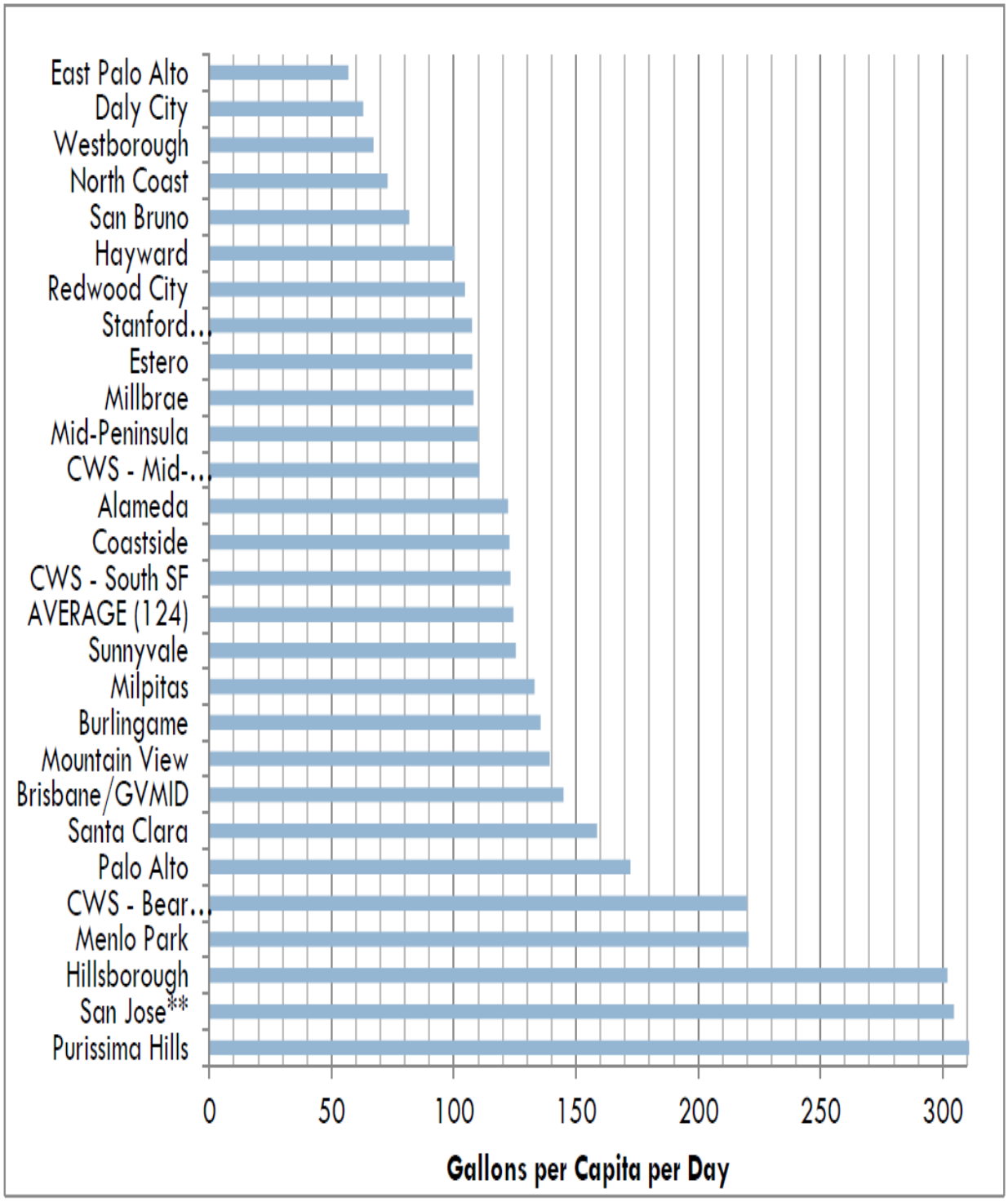
Sources: CAFRS, Census

Table 7: East Palo Alto Historical Water Use

Year (AF)	Purchase from SFPUC[1]	Sales to Menlo Park[2]	East Palo Alto Demand/Purchase	EPA IGS Normal Year	Under/ (Over) Allocation	% of EPA Normal Year IGS
2001-02	2,283	172	2,110	2199	89	96%
2002-03	2,274	163	2,111	2199	88	96%
2003-04	2,463	161	2,303	2199	-104	105%
2004-05	2,265	156	2,108	2199	91	96%
2005-06	2,248	134	2,113	2199	86	96%
2006-07	2,437	146	2,291	2199	-92	104%
2007-08	2,417	133	2,284	2199	-85	104%
2008-09	2,273	126	2,147	2199	52	98%
2009-10	2,033	98	1,935	2199	264	88%
2010-11	2,106	118	1,988	2199	211	90%
2011-12	2,185	97	2,088	2199	111	95%
2012-13	2,325	10	2,315	2199	-116	105%
2013-14	1,660	10	1,650	2199	535	75%
2014-15	1,764	9	1,755	2199	444	80%
Average	**2,195**	**110**	**2,086**	2199	**112**	95%

(1) General Plan Water Supply Assessment, 3-1, and City analysis

Figure 7B: Gross Per Capita Consumption(in gpcd) – FY 2013-14



Source: BAWSCA Annual Survey, Figure 7b

ATTACHMENT 3

GENERAL PLAN UPDATE WATER SUPPLY ASSESSMENT

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New drought mandates to trickle down: San Mateo County customers could see conservation restrictions eased

Daily Journal | May 11, 2016 | Samantha Weigel

The drought conservation landscape shifted Monday as Gov. Jerry Brown suggested individual water utilities determine their own cutbacks based on regional supply instead of standardized state mandates. Now, San Mateo County residents are likely to see new requirements trickle down from the region's largest water supplier, the San Francisco Public Utilities Commission.

The majority of local utilities and cities purchase wholesale water from the SFPUC which, like hundreds of suppliers across the state, could have until mid-June to determine how much their customers should conserve based on their supply.

As of this month, the total storage in the Hetch Hetchy Reservoir system was at 71.5 percent of maximum capacity, or about 90 percent of normal for this time of year, according to SFPUC spokeswoman Suzanne Gautier.

While most San Mateo County residents are served by cities or utilities that are completely reliant on the SFPUC's regional Hetch Hetchy system, there are a few water providers that have multiple sources — such as local groundwater basins — and may end up needing to develop different conservation targets.

Within San Mateo County, only a handful of suppliers have multiple water sources including San Bruno, Daly City, the California Water Service Company's South San Francisco district and the Coastside County Water District. The remainder rely solely on the SFPUC and will likely follow mandates from the wholesaler, said Nicole Sandkulla, CEO of the Bay Area Water Supply and Conservation Agency, or BAWSCA.

Final cutback mandates aren't likely to be announced until mid-June and would go into effect by the end of January 2017.

Permanent statewide mandates have also been proposed, such as prohibiting people from washing their cars without using a shut-off nozzle on a hose. But the State Water Resources Control Board appears to be handing more control back to local governments that must tailor regulations based on their water storage.

"We applaud those permanent regulations for the wise use of water and the short-term certification process is one that we're still trying to figure out what it means for everybody. But it's going to be manageable," Sandkulla said. "We anticipate an overall relaxation of the requirements in this service area because we had a good, rainy season and the hydrology is good this year so we've been able to store water."

The state's landmark conservation orders have affected local residents differently as it is currently based on historic usage with suppliers assigned a targeted cutback. For example, Redwood City residents were required to cut back by 8 percent while Hillsborough residents

needed to cut their flows by 36 percent. Now, city boundaries may not have such a significant difference.

For places like San Mateo with a 16 percent conservation target, Foster City with a 12 percent cutback, Belmont with its 20 percent target and several more cities that rely on the SFPUC; they could soon all share the same orders, which for San Francisco residents was 8 percent but may change based on the region's hydrology.

BAWSCA, represents the interests of suppliers in San Mateo, Santa Clara and Alameda counties that purchase wholesale water from the SFPUC. Sandkulla noted six of the eight suppliers in Santa Clara County have multiple sources as well as the Alameda County Water District; all of which will need to craft individualized conservation standards.

The state water board will vote on whether to adopt the proposed changes May 18, after which the SFPUC and nearly 400 suppliers will have until June 15 to submit their self-imposed cutbacks.

Officials with the SFPUC noted it would take time to calculate its conservation target based on the governor's orders to reduce consumption to a percentage equal to its projected shortfall in the event of another three years of drought.

"We support the state's new mandates and the development of longer-term water management and drought management strategies. … We're going to have to continue to conserve for this drought and for the next drought," Gautier wrote in an email. Customers "and our Bay Area wholesalers have responded to calls for conservation with serious water savings over the past few years. These new mandates, or reaffirmation of conservation practices, will make water conservation the way of life for all Californians."

Gautier noted the SFPUC's ratepayer funded $4.8 billion Water System Improvement Program has significantly improved water reliability and storage for the Bay Area. She noted each city or utility will still have to develop its own self-reporting regulation independently, but Sandkulla theorized many would follow the SFPUC's guidance.

While pleased that permanent regulations and a meaningful shift in the way California consumes water has become a byproduct of the drought, Sandkulla noted it will be important for conservation officials to continue engaging customers about how the new rules will apply.

"Communicating a drought message to our customers is always one of the most difficult things because it does, very quickly, become such a local responsibility," Sandkulla said. "And what is going on here in San Mateo is different than what is going on in Oakland, because they have totally different water distributors and systems; so there's always going to be that challenge. … So to me, the most important thing is to express appreciation for all [the conservation] they've done and keep encouraging the wise use of water."

# # #

CALIFORNIA DROUGHT: Dry spell leaves area lakes low and dry

Wave after wave of El Niño-fueled storms helped Northern California reservoirs, while Inland lakes are still below normal

The Press Enterprise | May 10, 2016 | David Downey

Want to know whether the water in a Southern California lake comes from a rainy, El Niño-blessed locale far away or local rainfall?

Just take a look at the shoreline.

Levels in bodies of water that tap regional pipelines are rising, while local lakes that don't continue to recede. Consider this:

- Lake Elsinore officials set out buoys last week to warn boaters of shallow water in their city's namesake lake.

- Big Bear Lake is half full following the steepest-ever four-year drop in lake levels.

- A local supplier has been prevented from drawing water out of Lake Hemet for four straight years because of low levels there.

- Diamond Valley Lake, after reaching a record-low level early this year, is on the rebound thanks to a fresh infusion of water piped in from the Sierra Nevada, where the much-maligned El Niño weather phenomenon did manage to deliver significant rain.

As a result, operator Metropolitan Water District plans to reopen a boat launch at the 810,000-acre-foot reservoir in southwest Riverside County on May 18, following a year-long closure.

"Improved supply conditions, particularly in Northern California, have helped loosen the drought's grip and allowed us to reintroduce boating and fishing on the lake," said Randy Record, Metropolitan's board chairman and a San Jacinto resident, in a statement.

For first time since 2012, Metropolitan, which pipes in Northern California and Colorado River water to the region, is rebuilding its vast reserves instead of drawing them down, said Bob Muir, a spokesman for the agency in Los Angeles.

"And a key destination for that will be Diamond Valley Lake," Muir said in a telephone interview Tuesday.

Lake Mathews near Corona is also on the rise. It has twice as much water as it did this time last year, according to Metropolitan statistics.

Muir said that's because Lake Mathews is the last stop on the Colorado River Aqueduct. The region received small amounts from up north in 2015, at the drought's grip tightened, and

Metropolitan leaned heavily on the Colorado River to keep water flowing to area homes. He said one year ago the agency was constantly pulling water out of the lake.

But that has changed with the easing of deliveries from the State Water Project, which taps the Sierra Nevada. And as of this week, Lake Mathews is 85 percent full.

GLASS HALF EMPTY

For the most part, though, Southern California lakes have taken – and continue to take – a beating because they are filled by local rain, and not precipitation that falls hundreds of miles away.

In the San Jacinto Mountains of Riverside County, Lake Hemet has hovered around half full for the duration of the drought. And Tom Wagoner, general manager of the Lake Hemet Municipal Water District, said the agency has avoided making withdrawals to hold onto what little savings is left for potential emergencies, such as an earthquake.

“We haven’t taken any of the water out of the lake for four years,” Wagoner said.

And it didn’t help when Metropolitan closed the Diamond Valley boat launch in early 2015. Some boaters and fishing enthusiasts thought – wrongly – that the little lake in the mountains was terminating boat access, too, and visits plummeted for a while, said Amber Rackley, social media manager for Lake Hemet Recreational Campground.

But then the 600-camp-site area opened a water park last summer and visitors began streaming back, Rackley said.

“The water park is awesome,” she said. “We have a 12-foot trampoline in the water. We have a 15-foot slide. And we have this thing called The Iceberg. It’s a rock climbing wall. My kids love it.”

# # #

California drought rules eased significantly
San Jose Mercury News | May 9, 2016 | Paul Rogers

California's historic drought rules are going to be a whole lot looser this summer. In a major shift, the administration of Gov. Jerry Brown announced Monday plans to drop all statewide mandatory water conservation targets it had imposed on urban areas last June.

The new rules, which are expected to be approved May 18 by the State Water Resources Control Board, would instead allow more than 400 cities, water districts and private companies to each set their own water conservation targets, as long as they report them to state officials.

Water agencies, particularly in Southern California and around Sacramento, had complained bitterly about the statewide rules, saying that they were costing hundreds of millions of dollars in lost water sales, and did not accurately reflect each community's water supply conditions -- and many have already begun to soften the rules for this summer.

Water from a sprinkler head is checked by Drew Mathers of ConserVision during a water audit on Friday, May 23, 2014.
Water from a sprinkler head is checked by Drew Mathers of ConserVision during a water audit on Friday, May 23, 2014. (Gary Reyes)

The reversal would end one of Brown's biggest conservation tools that forced communities to cut water consumption statewide by nearly one-fourth since June 2015 to cope with one of the worst droughts in state history.

Brown administration officials said the proposed relaxation in the rules reflects an improving water picture. This winter was the wettest in Northern California since the five-year drought began, with big reservoirs such as Oroville and Shasta now more than 90 percent full, although Southern California received far less rain.

"We are trying to recognize that conditions have changed this year and while we are in a statewide drought, conditions have eased for some parts of the state," said Mark Cowin, director of the state Department of Water Resources.

But some environmentalists said the state should have kept the mandatory statewide targets in place, arguing it is unclear how long the drought will last, and noting that any water not used on lawns could be used instead for human consumption, firefighting and other needs.

"I'm very disappointed, but not surprised. They were getting a lot of criticism for the regulations and they sensed a waning tolerance for the targets," said Sara Aminzadeh, executive director of the California Coastkeeper Alliance in San Francisco.

Environmentalists, however, were among those who applauded another decision from the Brown administration Monday: to make permanent a series of water wasting rules it put in place

in July 2014. Those rules ban watering lawns within 48 hours of rain, hosing off sidewalks and driveways and using ornamental fountains unless the water is recirculated.

Those rules also require shut-off nozzles on hoses used to wash a vehicle, and they ban cities and local governments from irrigating ornamental turf on public street medians.

The more immediate impact on most Californians, however, will come from the plan to drop the statewide conservation targets. Under those rules, last June each community was given a water conservation target -- from 8 to 36 percent -- based on its per capita water use, with fines for failure to meet the targets.

Places that already had high conservation rates, such as Santa Cruz, Hayward and San Francisco, were given 8 percent targets. Areas with high water use, like Beverly Hills and Bakersfield, were given 36 percent targets. Most Bay Area cities were at 16 to 20 percent, and hit the mark.

Under the new rules, each community now instead will set its own conservation target and report it to the state water board by June 15. The target would be based on a forecast -- which water board staff members called "a stress test" -- in which supply conditions would mirror the past three years, and demand would be the average of 2013 and 2014.

Using those assumptions, each city, water district and private water company would set its own conservation goal.

Sources said the Brown administration essentially cut a deal with the big water suppliers: Go along with the permanent water wasting rules and monthly reporting requirements, and the state would drop the one-size-fits-all mandatory water conservation targets.

At a news conference where reporters' questions were cut off early, Brown administration officials insisted that they weren't capitulating to large water agencies' demands by setting rules that would allow spigots to be opened wide this summer on lawns from Palm Springs to San Diego to Silicon Valley..

"This is not a walk in the park," said Felicia Marcus, chairwoman of the state Water Resources Control Board. "This is much more tailored to the circumstances that we find ourselves in now."

Max Gomberg, a water board official, said that the targets and methodologies of local agencies, along with their water use, will be posted monthly on the state water board's website.

"If any agency is fabricating or falsely providing information, the board has remedies for that, in terms of enforcement actions and fines," Gomberg said.

Between June 2015 and March 2016, Brown asked Californians to cut water use 25 percent overall in urban areas, compared with 2013. They reduced water use by 23.9 percent.

Already some Northern California agencies have begun to ease their rules. The East Bay Municipal Utility District, which serves 1.4 million people in Alameda and Contra Costa counties, is scheduled to vote Tuesday to drop its drought surcharges. Santa Cruz ended drought penalties and rules limiting when lawns could be watered after its reservoir, Loch Lomond, filled. And the Santa Clara Valley Water District is set to vote June 14 on easing its call for 1.9 million residents to cut water use 30 percent, a vote that will affect San Jose Water Company and other Silicon Valley providers.

In the coming weeks, many Bay Area residents will learn how their local city or water company has altered rules, said Nicolle Sandkulla, executive director of the Bay Area Water Supply and Conservation Agency, a group of 26 agencies that receive water from San Francisco's Hetch Hetchy system.

"Storage is high. Demand is low," she said. "The feeling is we will be able to relax the restrictions. Customers won't have to go to extraordinary measures like they have in recent years, but we still want to continue with the wise use of water."

Paul Rogers covers resources and environmental issues. Contact him at 408-920-5045. Follow him at Twitter.com/PaulRogersSJMN

DROUGHT RULES CHANGED

No more statewide conservation mandates. Cities, water companies and water districts will be able to set their own water conservation targets starting next month.

Water-wasting rules passed in the drought will be made permanent, including no hosing sidewalks, washing cars without a hose nozzle or watering lawns within 48 hours of measurable rainfall.

Cities, water companies and water districts will be required to report every month how much water they use to the state.

# # #

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Kamala Harris, silent on dams, says she would protect species law
Sacramento Bee | May 3, 2016 | Christopher Cadelago

U.S. Senate candidate Kamala Harris said Tuesday that she would not support efforts to weaken the federal law governing endangered species, breaking with fellow Democrat and rival Loretta Sanchez, who has said she would be open to amendments to help address the state's protracted drought.

"We have to support the Endangered Species Act," Harris, the state attorney general, told The Sacramento Bee editorial board. "There's just no question about that."

The law has been used to protect fish such as the Delta smelt and Chinook salmon, and has long been at the center of debate between environmentalists and farmers. Asked in an editorial board meeting last week whether the Endangered Species Act should be looked at, Sanchez, a 10-term congresswoman from Orange County, said she believed so.

"Everything needs to be on the table when we go in to find a solution," she said, adding it would be "very difficult to do" politically.

On Tuesday, Harris said it is wrong to focus so intently only on the smelt, citing a book she's reading called "The Sixth Extinction."

"The reality of it is that when species, which is what is happening on our globe, start to become extinct, at some point it will come to us," Harris said. "So even if you don't care about that small thing you might only be able to see under a microscope, you have to understand, and we have to appreciate and prioritize, the significance of the extinction of that species."

While she does not want to change the species law, Harris said she has met with farmers in the Central Valley cities of Modesto, Stockton and Bakersfield and believes the industry's interests also must be looked after.

"Both (the environment and agriculture) can be protected," Harris said. "And I reject a false choice that you are on one side or the other – that it's either a fish or a farmer."

Harris and Sanchez both generally favor Gov. Jerry Brown's controversial twin tunnels water-diversion plan. However, their answers diverge sharply on two proposed reservoirs that have been central to the water discussion for more than a decade.

Sanchez did not specifically address the Sites Reservoir in the Sacramento Valley, and said the Temperance Flat Dam on the San Joaquin River "would be a little more difficult to do," but did not take a stand on it. She said she supports Sen. Dianne Feinstein's water bill, which includes federal funding for above-ground water storage.

Asked her views Tuesday on the Sites proposal, Harris said "I am not familiar with it." She gave the same answer about Temperance Flat.

Asked to clarify her answers after the meeting, a campaign strategist, Sean Clegg, said Harris meant to say she hadn’t reviewed all of the environmental documents and has not taken positions on the proposals.

# # #

Drought-stricken California boosts conservation for March
Water reduction mandate decreases to 20 percent
KCRA | May 3, 2016 | Scott Smith

FRESNO, Calif. (AP) —Residents of drought-stricken California doubled their water conservation efforts in March compared with the month before by turning off their sprinklers when the rain fell and changing habits, officials said Tuesday.

Cities and businesses used 24.3 percent less water compared with the same time in 2013. That's twice the saving from the dry month of February, when the savings hit an all-time low of 12 percent, water regulators announced at a meeting in Sacramento.

"This is the most welcomed news I've had in a long time," said Felicia Marcus, chair of the State Water Resources Control Board. "In the rain, people know to turn off their sprinklers."

March was a cooler and wetter month, and officials also credited Californians with changing their habits, especially when it comes to watering their outdoor landscaping, which consumes half of a home's water use.

Conservation since mandatory cutbacks began in June 2015 has saved enough water to serve 6.5 million people for one year, or 17 percent of the state's population, officials reported.

March is the first month under relaxed conservation requirements. Californians are expected to use at least 20 percent less water, a break from the previous nine months ending in February when Californians were under stricter orders to conserve by 25 percent.

A nearly average amount of rain and snow this winter has eased California's dry spell, filling key reservoirs in Northern California. Officials warned, however, that the state remains in a drought.

This month state regulators in Sacramento are busy writing a new method for conservation in the five-year drought that will be implemented in June. They have said requirements could be reduced in some areas and maintained in others.

The easing drought has prompted many local water districts to say they want to set their own conservation targets. Other water districts say the state should completely drop the drought emergency because key reservoirs in Northern California are nearly full.

New regulations, however, with likely keep in place some level of conservation requirements, officials said.

"Californians have risen to the occasion and acquired habits and skills to conserve," said Jelena Hartman, a state water board senior scientist for climate change. "I believe this is showing the commitment Californians have for conservation."

# # #

Silicon Valley's Biggest Drought Lessons

Gov. Jerry Brown's conservation mandate for cities last year spurred water savings across Silicon Valley. Here are some of the highlights of what communities accomplished and how they did it.

Water Deeply | May 2, 2016 | Tara Lohan

In response to water conservation mandates, South San Francisco, California, cut its municipal water use by 57 percent and saved about 53 million gallons (200 million liters) of water. Tara Lohan

SOUTH SAN FRANCISCO, California – Anyone who has ever flown into San Francisco International Airport has likely spotted South San Francisco thanks to the huge sign on its hillside proclaiming it "The Industrial City." It's a remnant of the days before World War II when the city was home to meatpacking operations, steel plants, smelters and other manufacturing.

South San Francisco today is known for its biotech businesses, suburban housing and much lighter industry. It's also greening up its image, thanks in part to work done by its Parks Department. In response to statewide conservation mandates from Gov. Jerry Brown last year, the city cut its municipal water use by 57 percent in 2015 over 2013 levels and saved about 53 million gallons (200 million liters) of water.

Its water savings work earned the city an honor from the annual Silicon Valley Water Conservation Awards, along with several others – businesses, government agencies and municipalities, including the city of Menlo Park and a government lab at Stanford.

In looking at the different ways in which Silicon Valley communities tackled conservation work and innovation so far during California's historic drought, some important lessons emerge in both what has worked and where significant hurdles remain.

Changing Minds

South San Francisco's Parks Department used the drought as an opportunity to demonstrate water conservation work, but also to shift the way landscaping is done at the municipal level.

"We saved a lot of water over the last couple of years simply by turning off the water, which I don't think is terribly earth-shattering, but a lot of places around here didn't do that," said South San Francisco parks manager Samantha Haimovitch, who is a landscape architect. "We did let things go brown, but we're also trying to replace high water-usage stuff with more drought-tolerant planting."

The city stopped watering grass medians, establishing plantings and hardscapes. They identified water-intensive landscapes that needed to be replaced with drought-tolerant ones, increased the mulching of soil to maintain moisture and shut off all decorative fountains.

But the change in practice went deeper than that. The city teamed up with the Bay-Friendly Landscaping & Gardening Coalition (also known as ReScape) to train Parks staff on holistic landscaping principles that include conserving water and energy, reducing waste, nurturing the soil, creating habitat, protecting air and water and understanding the local considerations for landscapes.

While South San Francisco's results are laudable, there have been challenges. When they first reduced water use in response to the drought, they got a lot of negative feedback from residents. Some didn't like seeing brown lawns and wanted them watered more. And others didn't want to see any green and thought the city wasn't doing enough to cut back on water use.

"Balancing expectations with requirements is really interesting," said Haimovitch, although as the drought wore on and more places let lawns go brown, Haimovitch said residents got used to the idea.

But Haimovitch said her department also ran in to budgeting issues. While they were able to convert some areas to drought-tolerant plants, others simply remain brown during the dry months.

"Money is always an issue," she said. "Now, that we are bouncing back a little after the economic downturn, we've got so much deferred maintenance underneath the issues related to the drought that we have a lot of projects and not enough funding to go around."

Despite the city's accomplishments, the best things are likely yet to come.

"I would really like us to be a role model not only for our residents but also for other jurisdictions around us, our neighbors here in the region, to demonstrate what is possible," said Haimovitch. "I think that we have picked off the low-hanging fruit and have done really well reducing our water use but there are things I'd like to continue to do to implement stormwater capture and gray-water systems."

The drought has helped open up a door to more innovative thinking about landscapes and what is possible. "My hope is that whenever we are taking on a public project of any sort and any scope that we're looking at how to apply water conservation to that and really incorporate the landscape into any building design and also implement low water-usage techniques inside the facility," she said.

Just 20 miles (32km) down the road from South San Francisco is Menlo Park, an affluent community in the heart of Silicon Valley with median home prices near $2 million. Facebook has their headquarters there and it's next door to Stanford University.

It's also becoming something of a conservation rock star these days. Menlo Park was tasked by the state with cutting water use by 13 percent. Like other communities, the city would be fined if it didn't meet its target.

Nicole Sandkulla, CEO and general manager of the Bay Area Water Supply and Conservation Agency (BAWSCA), described Menlo Park as a community that could afford to pay its way out of any fines. “But their numbers show that’s not what they did,” she said.

Instead, Menlo Park’s municipal water agency vastly exceeded its conservation. It recorded the highest cumulative water savings in all of California by slashing water use 47 percent.

One of the keys to the agency’s success has been targeting outdoor water use, which makes up more than half of the city’s water consumption. In 2012 Menlo Park launched a Lawn Be Gone program that offers $2 a square foot for lawn removal, with $1 coming from BAWSCA and the other $1 from the city. (1 square foot = 0.09 square meters.) “I attribute a lot of our success to that and also people taking it upon themselves to conserve water,” said Heather Abrams, the environmental programs manager for the City of Menlo Park.

When Lawn Be Gone first started it was open to residential customers, then it was expanded to businesses. Originally, the city capped the rebate at a maximum of $3,000 per customer but then they removed that ceiling, as well, which opened up the rebate program to corporate campuses and others with large outdoor areas. The city estimates that the program is now saving about 5.3 million gallons (20 million liters) of water each year.

Of course removing your lawn is only one part of the process; you also need to know what to plant in its place. So Menlo Park started Conserv-A-Scape, a program in which residents can get a design consultation and plan from a landscape architect for converting their property to drought-tolerant plants. It’s a $400 service, but residents only pay $50 and the city makes up the difference.

“These are some things where there is an investment, both by the resident or business and the city, in making sure that the landscape is set up to withstand droughts now and in the future as well,” said Abrams.

Menlo Park also teamed up with Waterfluence, which has a suite of data management tools to help increase irrigation efficiency. Together they targeted the top 101 water users in the district, which includes corporate campuses, homeowners’ associations and a few really large private residences, said Abrams. “They provide them with information about their water use, they put together a simple water budget for them based on how much turf versus shrubs they have and then track their water usage against that budget,” she said.

Menlo Park didn’t just target its water users, it also did some in-house conservation work, too. Storm-drain water is now collected and used for cleaning sidewalks, a savings of 10,000 gallons (38,000 liters) a year. City vehicles aren’t washed so often and are now tagged with “A Little Dirt Won’t Hurt, Menlo Park Is Saving Water” signs, saving 78,000 gallons (300,000 liters) a year, and water that is flushed out of mains (a necessary maintenance) is reused in city fountains, saving 2,000 gallons (7,500 liters) a year.

The water savings have also come with a shift in consciousness about water issues in the community, said Abrams. “I think it’s really exciting to think that as people see more beautiful water-efficient landscaping around the community that it becomes the norm and something that we both expect and value as beautiful and appropriate for our climate.”

Ripple Effect

One of the places that has benefited from Menlo Park’s Lawn Be Gone program is the SLAC National Accelerator Laboratory. The facility is part of the United States Department of Energy, but operated by Stanford University. It’s a massive 426-acre (172-hectare) site, with 150 buildings and 1,400 employees.

After the governor’s mandate to save water, Rohendra Atapattu, the energy and sustainability program manager at SLAC, saw ways to conserve. One of the first things they did was team up with Gachina Landscape Management to remove 20,000 square feet (1,900 square meters) of lawn, which was paid for by $40,000 in rebates from Menlo Park.

They also put up signs inside buildings saying “water conservation, now is the time” to encourage water savings among staff. “We were expecting that behavior would change, but that didn’t happen right away,” said Atapattu.

But as they embarked on more changes outside with the landscape and then inside, replacing the aerators in faucets, Atapattu said employees began to notice.

“Once we told building managers we were going to change out the aerators, they suddenly became a lot more aware and started to report leaking toilets and dripping things here and there that had been going on for awhile but suddenly they wanted to make sure there was attention and money to get that fixed,” he said.

“People starting to report water leaks and then outside, our mechanics and the maintenance people, they started to keep an eye out for where things could be leaking and we fixed those things, too.”

They also began collecting rainwater as it accumulated in various equipment on site, to use it for cooling tower operations.

SLAC managed to reduce water use by 23 percent in their buildings and cut back irrigation by 80 percent. Previously they had been using 9 million gallons (34 million liters) a year just on landscape. Electricity and cooling demands increased 11 percent in the last year, but they still managed to save 15 million gallons (57 million liters) of water during 2014 and 2015 because of conservation measure inside and outside, said Atapattu.

And this work has caused a ripple effect. They are now looking at using recycled water that may become available through a new project with the sewer district. “We’ve put ourselves first in line for interested parties because that water could be used for cooling towers and that is one of our largest uses of water,” said Atapattu.

Big Picture

As California embarks on its fifth consecutive year of drought, accumulating regional lessons and best practice could help municipalities respond better to water supply challenges and prepare for future droughts.

The popularity of water fill stations where municipalities have made recycled water available for residents means the program could expand beyond its current locations. The Los Angeles area is pioneering capturing rainwater, gray water and stormwater to take advantage of nonpotable water needs, while San Francisco is mandating decentralized water-treatment systems in large new construction projects.

In San Diego there is an increased focus on the important connection between climate change and water. “When we ask San Diegans about why they are concerned about climate change, it’s always water and water issues that come to the top,” said Nicola Hedge, the director of environmental initiatives at the San Diego Foundation, which is a part of Climate Education Partners, a collaborative that helps residents and decision-makers understand climate change impacts in the region.

But across all the new initiatives there is a common denominator, as South San Francisco’s Haimovitch summed up: “We’re changing our mindset.”

This is the final story in a 10-part series. Water Deeply thanks the Silicon Valley Community Foundation for their support in making this reporting series possible.

# # #

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California's Drought Emergency Is Over, State Water Districts Say
The Weather Channel | April 21, 2016 | Associated Press

After years of strict regulations brought on by a severe drought, California residents may soon be able to water their lawns again.

The state's water districts are expected to suggest state regulators ease or eliminate the drought emergency that has been in place since last year. The water providers say they want to have the power to issue conservation measures that the state currently holds.

The State Water Resources Control Board held a workshop Wednesday in Sacramento to chart the future of conserving water in California's cities. The state's residents remain under strict water guidelines that have forced them to take shorter showers and stop watering their lawns.

"It's our responsibility to be sure we have available supplies to meet demands," Fiona Sanchez of the Irvine Ranch Water District in Southern California told water regulators at the workshop.

Felicia Marcus, chair of the State Water Board, said she would like to allow local control but fears not all local water officials would provide realistic assessments of their water supplies, leading to the possibility of serious shortages.

Nearly a year ago, Gov. Jerry Brown ordered California's residents and businesses to conserve water during the state's driest four-year period on record.

Residents statewide used 23.9 percent less water over the nine months ending in February while under orders to use 25 percent less water compared to the same months in 2013.

Residents are now under orders to cut back through October by at least 20 percent.

Several other districts — particularly in Northern California — propose that the state should toss out or significantly relax emergency conservation orders.

Strict orders remain in place, despite significantly more rain and snow this winter flowing into California reservoirs, water officials say.

Continuing to ask Californians to sustain "heroic water conservation efforts" that don't reflect healthier water supplies today could erode the officials' credibility with residents when they're called upon next time to make sacrifices, David Bolland, special projects manager for the Association of California Water Agencies says in a letter to water regulators.

"It is time to end the State Water Board's mandatory water use restrictions statewide," says Bolland, who represents hundreds of urban, commercial and agricultural water districts.

Two Sierra Nevada reservoirs that supply about 31,000 residents in Tuolumne County are expected to overflow, making the emergency regulations there unnecessary, Thomas Haglund, general manager of the Tuolumne Utilities District, wrote to the board.

In a letter submitted by several environmental organizations, Tracy Quinn, a senior policy analyst for the Natural Resources Defense Council, cautioned against abandoning conservation measures in response to outcry from water districts.

There is no certainty of another wet winter and much of the state remains in drought conditions, Quinn said. She added that some adjustment to the drought orders are warranted, but conservation should be a way of life for California.

"California's water challenges are immense and extend far beyond the current drought," Quinn wrote.

The board is expected to adopt California's new conservation method in May.

# # #

Temporary water restrictions now permanent
Appeal Democrat | May 10, 2016 | Brian Pearson

On Monday, Gov. Jerry Brown issued an executive order that made a number of California's temporary water restrictions permanent, aiming to bolster California's climate and drought resilience with long-term water conservation practices.

"Californians stepped up during this drought and saved more water than ever before," Brown said in a statement. "But now we know that drought is becoming a regular occurrence and water conservation must be a part of our everyday life."

While he agrees that conservation is an important tool moving forward, Assembly Republican Leader Chad Mayes (Yucca Valley) said in a response that the focus needs to shift toward building more storage.

"Wise water use must be a part of our daily lives. However, conservation alone will not bring relief to areas that are still suffering from a lack of water. California must act now to increase water supply," Mayes said in the statement.

Fresh out of a meeting of the Sites Reservoir Joint Powers Authority, local officials from Glenn and Colusa counties, some 570 miles north of Mayes's district, were thinking along the same lines on Monday afternoon.

"Conservation is a great approach — it's a nice tool to have in the chest, but the only way to bring more water into the equation is to have more storage," said Colusa County Supervisor Kim Vann. "Conservation alone isn't going to get us there, and the voters approved Proposition 1 because they knew we needed that additional storage in the state."

Most of the conservation efforts set forth in Brown's executive order are geared toward urban areas, said Glenn-Colusa Irrigation District General Manager Thaddeus Bettner.

Some of the now-permanent restrictions include bans on wasteful water practices such as hosing off sidewalks and driveways, washing cars with a hose that doesn't have a shut-off nozzle, and watering laws in a manner that causes runoff.

"On agriculture side, the executive order talks about the (Agricultural Water Management) plans that we have in place, and we're going to continue to do that," Bettner said.

Current law requires agricultural water districts serving 25,000 acres or more to file those plans. The executive order increases the number of irrigation districts who must file water management plans by lowering that threshold to 10,000 acres, as a permanent requirement.

The order states that the Department of Water Resources and the California Department of Food and Agriculture will consult with water suppliers, local governments, agricultural

producers, environmental groups, and other partners to update the requirements for the Agricultural Water Management Plans. The updated draft requirements will be released on Jan. 10, 2017.

"While it's not mentioned in the executive order, the Sustainable Groundwater Management Act is going to be another big issue we're going to have to focus on — one of longer term actions that state is requiring," Bettner said.

He echoed Vann's comments about needing to increase water storage, adding that it would be done in a way that both addresses growing needs and benefits the environment.

"We believe that Sites does that, and we want to do everything that we can to keep that project going forward," he said.

# # #

Governor Brown Issues Order to Continue Water Savings as Drought Persists

Executive Order Aims to Make Water Conservation a Way of Life in California

Maven | May 9, 2016 | Office of the Governor

Moving to bolster California's climate and drought resilience, Governor Edmund G. Brown Jr. today issued an executive order that builds on temporary statewide emergency water restrictions to establish longer-term water conservation measures, including permanent monthly water use reporting, new permanent water use standards in California communities and bans on clearly wasteful practices such as hosing off sidewalks, driveways and other hardscapes.

"Californians stepped up during this drought and saved more water than ever before," said Governor Brown. "But now we know that drought is becoming a regular occurrence and water conservation must be a part of our everyday life."

Californians have responded to the call to conserve water during the drought by dialing back sprinklers, replacing lawns, fixing leaky faucets and installing more efficient toilets and washing machines. Between June 2015 and March 2016, Californians reduced water use by 23.9 percent compared with the same months in 2013 – saving enough water to provide 6.5 million Californians with water for one year.

While the severity of the drought has lessened in some parts of California after winter rains and snow, the current drought is not over. For the fifth consecutive year, dry conditions persist in many areas of the state, with limited drinking water supplies in some communities, diminished water for agricultural production and environmental habitat, and severely depleted groundwater basins. The executive order calls for long-term improvements to local drought preparation across the state, and directs the State Water Resources Control Board to develop proposed emergency water restrictions for 2017 if the drought persists.

California droughts are expected to be more frequent and persistent, as warmer winter temperatures driven by climate change reduce water held in the Sierra Nevada snowpack and result in drier soil conditions. Recognizing these new conditions, the executive order directs permanent changes to use water more wisely and efficiently, and prepare for more frequent, persistent periods of limited supply.

These new actions will help achieve a top priority in the Governor's Water Action Plan – to "Make Conservation a California Way of Life." The administration will seek public input in the coming months on new water conservation and efficiency standards called for in this executive order.

The following is a summary of the executive order issued by the Governor today:

Use Water More Wisely
The Department of Water Resources (DWR) and the State Water Board will require monthly reporting by urban water suppliers on a permanent basis. This includes information regarding water use, conservation and enforcement. Through a public process and working with partners such as urban water suppliers, local governments and environmental groups, DWR and the State Water Board will develop new water use efficiency targets as part of a long-term conservation framework for urban water agencies. These targets go beyond the 20 percent reduction in per capita urban water use by 2020 that was embodied in SB X7-7 of 2009, and will be customized to fit the unique conditions of each water supplier.

The State Water Board will adjust emergency water conservation regulations through the end of January 2017, in recognition of the differing water supply conditions across the state, and develop proposed emergency water restrictions for 2017 if the drought persists.

Eliminate Water Waste
The State Water Board will permanently prohibit wasteful practices, such as hosing off sidewalks, driveways and other hardscapes, washing automobiles with hoses not equipped with a shut-off nozzle, and watering lawns in a manner that causes runoff. These temporary prohibitions have been in place since emergency water conservation efforts began in July 2014.

The State Water Board and DWR will take actions to minimize water system leaks across the state that continue to waste large amounts of water. DWR estimates that leaks in water district distribution systems siphon away more than 700,000 acre-feet of water a year in California – enough to supply 1.4 million homes for a year. Audits of water utilities have found an average loss through leaks of 10 percent of their total supply.

Strengthen Local Drought Resilience
In consultation with urban water suppliers, local governments, environmental groups and other partners, DWR will strengthen standards for local Water Shortage Contingency Plans, which are part of the Urban Water Management Plans that water districts must submit every five years. Under new strengthened standards, districts must plan for droughts lasting at least five years, as well as more frequent and severe periods of drought. These plans must be actionable, so that districts can turn to them to guide their drought response.

For areas not covered by the Water Shortage Contingency Plan, DWR will work with counties to improve drought planning for small water suppliers and rural communities.

Improve Agricultural Water Use Efficiency and Drought Planning
DWR will update existing requirements for Agricultural Water Management Plans so that irrigation districts quantify their customers' water use efficiency and plan for water supply shortages.

Current law requires agricultural water districts serving 25,000 acres or more to file such plans. The executive order increases the number of irrigation districts who must file water

management plans by lowering the threshold to irrigation district serving 10,000 acres or more. DWR will check the plans to ensure they quantify conservation efforts and adequately plan for water shortages.

DWR will work with the California Department of Food and Agriculture in seeking public input on the updated standards, with a public draft made available by the end of this year.

To ensure compliance with these new targets and water management plan requirements, DWR, the State Water Board and the California Public Utilities Commission will work together to develop methods which could include technical and financial assistance, regulatory oversight and enforcement mechanisms.

# # #

The full text of the executive order is attached.

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Executive Department

State of California

EXECUTIVE ORDER B-37-16
MAKING WATER CONSERVATION A CALIFORNIA WAY OF LIFE

WHEREAS California has suffered through a severe multi-year drought that has threatened the water supplies of communities and residents, devastated agricultural production in many areas, and harmed fish, animals and their environmental habitats; and

WHEREAS Californians responded to the drought by conserving water at unprecedented levels, reducing water use in communities by 23.9% between June 2015 and March 2016 and saving enough water during this period to provide 6.5 million Californians with water for one year; and

WHEREAS severe drought conditions persist in many areas of the state despite recent winter precipitation, with limited drinking water supplies in some communities, diminished water for agricultural production and environmental habitat, and severely-depleted groundwater basins; and

WHEREAS drought conditions may persist in some parts of the state into 2017 and beyond, as warmer winter temperatures driven by climate change reduce water supply held in mountain snowpack and result in drier soil conditions; and

WHEREAS these ongoing drought conditions and our changing climate require California to move beyond temporary emergency drought measures and adopt permanent changes to use water more wisely and to prepare for more frequent and persistent periods of limited water supply; and

WHEREAS increasing long-term water conservation among Californians, improving water use efficiency within the state's communities and agricultural production, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change; and

WHEREAS these activities are prioritized in the California Water Action Plan, which calls for concrete, measurable actions that "Make Conservation a California Way of Life" and "Manage and Prepare for Dry Periods" in order to improve use of water in our state.

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 California Government Code sections 8567 and 8571, do hereby issue this Executive Order, effective immediately.

IT IS HEREBY ORDERED THAT:

The orders and provisions contained in my January 17, 2014 Emergency Proclamation, my April 25, 2014 Emergency Proclamation, Executive Orders B-26-14, B-28-14, B-29-15, and B-36-15 remain in full force and in effect except as modified herein.

State agencies shall update temporary emergency water restrictions and transition to permanent, long-term improvements in water use by taking the following actions.

USE WATER MORE WISELY

1. The State Water Resources Control Board (Water Board) shall, as soon as practicable, adjust emergency water conservation regulations through the end of January 2017 in recognition of the differing water supply conditions across the state. To prepare for the possibility of another dry winter, the Water Board shall also develop, by January 2017, a proposal to achieve a mandatory reduction in potable urban water usage that builds off of the mandatory 25% reduction called for in Executive Order B-29-15 and lessons learned through 2016.

2. The Department of Water Resources (Department) shall work with the Water Board to develop new water use targets as part of a permanent framework for urban water agencies. These new water use targets shall build upon the existing state law requirements that the state achieve a 20% reduction in urban water usage by 2020. (Senate Bill No. 7 (7th Extraordinary Session, 2009-2010).) These water use targets shall be customized to the unique conditions of each water agency, shall generate more statewide water conservation than existing requirements, and shall be based on strengthened standards for:

    a. Indoor residential per capita water use;
    b. Outdoor irrigation, in a manner that incorporates landscape area, local climate, and new satellite imagery data;
    c. Commercial, industrial, and institutional water use; and
    d. Water lost through leaks.

    The Department and Water Board shall consult with urban water suppliers, local governments, environmental groups, and other partners to develop these water use targets and shall publicly issue a proposed draft framework by January 10, 2017.

3. The Department and the Water Board shall permanently require urban water suppliers to issue a monthly report on their water usage, amount of conservation achieved, and any enforcement efforts.

ELIMINATE WATER WASTE

4. The Water Board shall permanently prohibit practices that waste potable water, such as:

    - Hosing off sidewalks, driveways and other hardscapes;
    - Washing automobiles with hoses not equipped with a shut-off nozzle;
    - Using non-recirculated water in a fountain or other decorative water feature;
    - Watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and
    - Irrigating ornamental turf on public street medians.

5. The Water Board and the Department shall direct actions to minimize water system leaks that waste large amounts of water. The Water Board, after funding projects to address health and safety, shall use loans from the Drinking Water State Revolving Fund to prioritize local projects that reduce leaks and other water system losses.

6. The Water Board and the Department shall direct urban and agricultural water suppliers to accelerate their data collection, improve water system management, and prioritize capital projects to reduce water waste. The California Public Utilities Commission shall order investor-owned water utilities to accelerate work to minimize leaks.

7. The California Energy Commission shall certify innovative water conservation and water loss detection and control technologies that also increase energy efficiency.

STRENGTHEN LOCAL DROUGHT RESILIENCE

8. The Department shall strengthen requirements for urban Water Shortage Contingency Plans, which urban water agencies are required to maintain. These updated requirements shall include adequate actions to respond to droughts lasting at least five years, as well as more frequent and severe periods of drought. While remaining customized according to local conditions, the updated requirements shall also create common statewide standards so that these plans can be quickly utilized during this and any future droughts.

9. The Department shall consult with urban water suppliers, local governments, environmental groups, and other partners to update requirements for Water Shortage Contingency Plans. The updated draft requirements shall be publicly released by January 10, 2017.

10. For areas not covered by a Water Shortage Contingency Plan, the Department shall work with counties to facilitate improved drought planning for small water suppliers and rural communities.

IMPROVE AGRICULTURAL WATER USE EFFICIENCY AND DROUGHT PLANNING

11. The Department shall work with the California Department of Food and Agriculture to update existing requirements for Agricultural Water Management Plans to ensure that these plans identify and quantify measures to increase water efficiency in their service area and to adequately plan for periods of limited water supply.

12. The Department shall permanently require the completion of Agricultural Water Management Plans by water suppliers with over 10,000 irrigated acres of land.

13. The Department, together with the California Department of Food and Agriculture, shall consult with agricultural water suppliers, local governments, agricultural producers, environmental groups, and other partners to update requirements for Agricultural Water Management Plans. The updated draft requirements shall be publicly released by January 10, 2017.

The Department, Water Board and California Public Utilities Commission shall develop methods to ensure compliance with the provisions of this Executive Order, including technical and financial assistance, agency oversight, and, if necessary, enforcement action by the Water Board to address non-compliant water suppliers.

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 of 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 9th day of May 2016.

Edmund G. Brown Jr.

EDMUND G. BROWN JR.
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State

California residents cut water use 24.3 percent in March
San Jose Mercury News | May 4, 2016 | Paul Rogers

Californians cut water use 24.3 percent in March, the largest savings in any month since last September, state officials announced Tuesday.

The water savings came largely because El Niño storms soaked much of the state throughout that month, particularly Northern California, filling reservoirs and prompting homeowners to shut off their lawn sprinklers.

"This is the most welcome news we've had in a long time," said Felicia Marcus, chairwoman of the State Water Resources Control Board, which releases the monthly conservation data for more than 400 cities, water districts and private water companies.

Although the drought emergency is largely over now in Northern California, hotter weather is already here, and scientists are forecasting a 71 percent chance of La Niña conditions by November, which could mean dry weather next winter.

Since last June, when the administration of Gov. Jerry Brown first imposed mandatory water conservation targets on urban areas to address the state's historic drought, California's urban residents have reduced water consumption by 23.9 percent overall during the 10-month period, compared with the same months in 2013, the baseline year.

Last June, Brown had set a goal of 25 percent.

In March, the Bay Area reduced water use 25 percent compared to March 2013, and the South Coast region -- mostly Los Angeles and San Diego -- cut by 20.7 percent, while the Sacramento region cut by 36.7 percent.

Because of the winter rains, which gave Northern California its wettest winter in five years, the state water board is scheduled to vote May 18 on changes to the conservation rules. The board is widely expected to relax or drop entirely the rules for Northern California, although it may keep in place some targets for Southern California.

The difference is largely due to rainfall. Many cities in the north this winter rain season have so far received about 100 percent of their historic average rainfall. San Jose on Tuesday was at 102 percent, San Francisco 101, Oakland 84, Stockton 124, Sacramento 91 and Redding 118. But the storms largely missed Southern California. Los Angeles on Tuesday, for example, had only received 54 percent, while San Diego was at 74 percent and Palm Springs was at 56 percent.

The snowpack in the northern Sierra was also greater than in the southern Sierra.

As a result, major reservoirs in the north, like Shasta and Oroville are near full, while reservoirs farther south, like Diamond Valley in Riverside County, and Millerton, near Fresno, were 43 and 57 percent full, respectively, on Tuesday.

The Bay Area could get a little rain later this week, with a slight chance of showers Thursday and Friday before warm, dry conditions return next week. "The real trick will be getting people to hold the line in the warmer, drier months," Marcus said. "If you don't love your lawn, you ought to lose it, and if you do love your lawn you ought to put it on a diet."

# # #

Felicia Marcus: Controlling the Spigot in California

She directs a crucial policy intersection in a state battling drought

Influential Women | May 4, 2016 | Joanna Anderson

Someone who likes to make enemies would be hard-pressed to find a more perfect job than running the agency that tells folks in parched California that they can't water their lawns.

But Felicia Marcus, who has that job, says she doesn't like to make enemies. She says she likes to listen.

As chairwoman of the California Water Resources Control Board, Marcus has the unenviable task of trying to please an array of competing interests in a state that has battled drought. She says she has tried to be "sensitive to what the legitimate interests were of the other people in the circle."

"I talk a lot," she added. "But I'm actually a very good listener and I'm listening for what people really need rather than what they say they need." That skill, she says, "is part of the art" of her job.

Scrutiny, criticism

The delicate nature of that art has brought scrutiny and some criticism of the drought response managed by her board. For example, a December report on the state's efforts from the Natural Resources Defense Council yielded mixed results, offering solid marks on urban water conservation but significantly lower marks for conservation in the agriculture sector.

Those findings were "a little disappointing," Marcus told the Los Angeles Times. "We've done more in the past two or three years than we have in the past two or three decades on water in California. It's nothing to sneeze at."

To be sure, the amount of water in the food consumed by folks in urban California "is a lot higher than what they put on their lawn . . . but you're not going to say you can't eat."

The water board has been "hitting it on all cylinders," Marcus said. It has had to take an "across the board look at water in a very complicated state."

The drought has "called on all of us to try and find those actions that can maximize the benefits to competing interests."

Just Short

In an April report, the board said that in the first nine months of intense conservation efforts ordered by Gov. Jerry Brown, urban residents of California had reduced their water consumption by 23.9 percent, just short of the 25 percent goal.

“We’re nowhere near having a ‘drought’s over party,’” Marcus told the Times after the report, which covered the period ending on March 31. A “subdued … it’s-way-better-than-the-last-few-years party” would be more appropriate.

Many Californians were hopeful that the El Niño weather system would spur additional rainfall during the winter and spring. And it did, but not enough to make a big dent.

“We’re grateful for every drop and every snowflake,” Marcus told CQ Roll Call. “I really think that people are going to have a fair amount of drought memory, because this one has been so severe.”

California’s State Water Resources Control Board was perceived as “timid and politically weak” before it was thrust into the fore by an historic dry spell, according to the Times. Before joining the board in 2012, Marcus worked in various government, non-profit and private sector jobs, including a tour of duty in the Clinton administration’s EPA.

Hill experience

In a March interview with CQ Roll Call, Marcus said she grew “intrigued by water issues and environmental issues generally” while working for former Rep. Anthony Beilenson, D-Calif., in the late 1970s.

After earning a degree from Harvard in East Asian studies, Marcus says she spent a couple of years dipping her toe in domestic policy while weighing whether to pursue graduate work.

In Beilenson’s office, she gravitated toward the environment. Citing the infamous Love Canal disaster, Marcus said “all of a sudden environmental issues didn’t seem so much like protecting people’s backyards, but it was actually an issue of public health that affected people of all income levels, and I found that incredibly intriguing.”

Soon, she says, it became clear that it “made sense to go to law school, because so much of environmental work is statutory.” It “seemed like an important tool … in the quiver to work on environmental issues.”

Marcus later took her New York University law degree to a federal clerkship for Ninth Circuit Court Judge Harry Pregerson, whom she credits with influencing her management ethos.

“I think my activism and advocacy, even my being a lawyer, is very much influenced by him.” Looking for areas of agreement is “always going to be in your client’s interest too, to understand what the other side legitimately wants and respecting people on all sides of an issue.”

# # #

Will California Ditch Water Conservation Mandate?

California's emergency water conservation mandate was extended until October, but the Water Board is contemplating changing it after pressure from water suppliers that would like to see regulations eased or eliminated.

Water Deeply | April 29, 2016 | Tara Lohan

Back in February 2014 morning traffic heading to downtown Los Angeles along the Hollywood Freeway was greeted by an electronic sign warning of severe drought.Richard Vogel, Associated Press

It seems like just yesterday that Californians were patting themselves on the back for their conservation efforts in the face of an historic drought. Thanks to a sweeping statewide emergency conservation mandate for urban water suppliers from Gov. Jerry Brown last spring, the state saved 1.15 million acre-feet (1.4 billion cubic meters) of water from June 2015 through January 2016 – a nearly 25 percent reduction in use.

But El Niño has rained on the conservation parade.

There is now growing pushback from water suppliers across the state to further amend or eliminate the mandate. In February the emergency regulation was extended until October 2016 and it was also revised slightly, which made it easier for some water districts to comply. Now the State Water Resources Control Board will decide in May if it wants to make further changes, and there is mounting pressure to do so.

The much-hyped El Niño was not a drought buster for California, but it did deliver near-average precipitation to Northern California, which has been enough to fill Lake Shasta and Lake Oroville, the two biggest reservoirs in Northern California.

Full reservoirs along with an April 1 snowpack reading of 95 percent of normal for the Northern Sierra, has led many water supplies in Northern California, and particularly in the Sacramento region, to declare that the drought emergency for their region is over.

Andy Fecko, the director of resource development for the Placer County Water Agency, told the Water Board last week, "In the American River Basin, the Sacramento region, we are not in a drought emergency any more." And John Woodling, the executive director of the Regional Water Authority that represents 20 water agencies in the Sacramento area, affirmed, "The emergency status of the drought has abated for the Sacramento region."

Water sprays from sprinklers outside of a home in Hillsborough, Calif., in April 2015. An emergency mandate has sought to limit outdoor water to conserve water, but the State Water Resources Control Board is considering making changes to it.
Water sprays from sprinklers outside of a home in Hillsborough, Calif., in April 2015. An emergency mandate has sought to limit outdoor water to conserve water, but the State Water Resources Control Board is considering making changes to it. (Jeff Chiu, Associated Press)

On March 23 the board of the San Juan Water District, which serves eastern Sacramento and southern Placer counties, voted to move from stage four to stage two drought, which knocks conservation regulations down to a voluntary 10 percent reduction and eliminates a drought surcharge on bills. This was done despite the fact that the state's emergency conservation mandate was still in effect.

"Though we anticipate the State Board will eliminate or reduce the conservation requirements in May, there is a chance they won't," the district reported. "This could mean San Juan would be required to reinstate a higher drought stage. Because of this, we ask customers to be aware of this possibility when replanting landscapes."

East Bay Municipal Utility District in the Bay Area didn't go to such lengths but they did suspend their excessive water use penalty ordinance, which fined high water use customers.

"It's never OK to waste water, the district's conservation program remains strong and we'll focus on working with all of our customers, including these customers, to keep water levels low," said Andrea Pook, senior public information representative with East Bay MUD.

Pook said it is difficult to ask residents to pay penalties when reservoirs are going to be filling up this year. But she acknowledged, "It's kind of a mixed message" because the drought is easing but not over.

"We just want to be in alignment with our local conditions, as well as what the state is seeing," she said in regards to efforts to ease conservation mandates. "We recognize that we're not alone, we're in it together. But we also recognize that water agencies have different conditions – Southern California is not in the same shape as we are."

Los Angeles Water and Power moved this week to set fines as high as $40,000 for "unreasonable" water use. But the region's wholesale water provider, Metropolitan Water District of Southern California, and other Southern California water suppliers are calling on the Water Board to make big changes to the emergency mandate that would allow water suppliers to self-certify the capacity of their supply to meet demand projections instead of abiding by mandates set by the state.

It's a position supported by California Urban Water Agencies. But Tracy Quinn, a policy analyst in the water program at the Natural Resources Defense Council, said, "I do have concern that relaxing or eliminating mandatory targets for water suppliers while we still are in an emergency situation, sends a terrible and conflicting message to Californians."

The NRDC, she said, would rather see modifications to the existing structure of the mandate if changes are to be made on the temporary regulation. "In large part, water supply throughout California is interconnected and interdependent," she said. "So although we have regions that got normal precipitation this year, if that water supply diverts from the Delta water system then there is still a need for them to conserve because there are so many other Californians whose water depends on that supply."

Despite the fact that many large reservoirs in Northern California are in good shape, Central and Southern California received much less precipitation, said Quinn. And another concern is snowpack. Statewide snowpack at the April 1 reading was 95 percent normal for Northern California and 85 percent normal across the entire Sierra Nevada. But in less than a month warm temperatures had made a significant dent in that. By April 26 the snowpack dropped to 61 percent normal across the state and 65 percent of normal for Northern California.

The Earth Institute at Columbia University also predicts a 70 percent chance of La Niña conditions by fall, which could mean more dry weather for California.

And then there is California's groundwater problem. "During the drought we've turned to groundwater to supplement surface supplies and we have over-drafted major aquifers throughout the state to the point where we have seen subsidence in some," said Quinn. "We need to make sure that people understand that despite recent rains we are still in an emergency drought situation and we certainly can't suffer the short-term memory loss that often follows a little rain."

# # #

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NEW WATER SOURCE FOR COURSE

Menlo Park project similar to planned Manteca endeavor

Manteca Bulletin | April 27, 2016 | Dennis Wyatt

Menlo Park's exclusive Sharon Heights Golf & Country Club knows the value of reclaimed wastewater.

The golf course overseers also know California is nearing the day when it can no longer afford to allow pristine drinking water such as it currently gets from Hetch Hetchy to keep golf courses lush.

That's why they are getting ahead of a decision that many water experts expect Sacramento to eventually hand down to ban the use of potable water for golf courses by partnering with West Bay Sanitary District to treat what the residents in exclusive enclaves such as Woodside, Atherton, and Portola Valley flush down their toilets so that it can be recycled to irrigate greens, fairways, and landscaping.

Details of the project expected to come on line by 2019 was outlined during Thursday's Manteca Rotary Club meeting at Ernie's Rendezvous Room by West Bay General Manager Phil Scott who resides in Manteca.

The City of Manteca is working on a water recycling masterplan that will allow it to use treated wastewater from the city's plant to irrigate the Manteca Golf Course and other parks. While the city uses ground water currently to irrigate the golf course, pending groundwater use rules that require regions to balance aquifers by making sure as much water goes into them as is taken out will force a shift to non-potable water.

The Menlo Park golf course uses 152 acre feet of water annually. They are currently paying $2,500 an acre foot for water they use that flows from the City of San Francisco's Hetch Hetchy project. The $15.5 million project would yield water costing $6,500 per acre foot. A revolving loan from a state fund at one percent interest plus outright state grants will lower the costs to the point water will cost Sharon Heights Golf & Country Club $4,100 per acre feet.

Scott said the golf course operators view the $1,600 increase per acre foot for water as a bargain of sorts.

"They're fairly pleased," Scott said. "It creates a new water supply and gives then a reliable source of water."

During the current drought, golf courses in many regions of California have been forced to reduce watering. Using reclaimed water would allow them to avoid such a mandate.

During the off season when water demand drops, the excess water capacity will be sold to nearby homeowners association to irrigate landscaping as well as to Stanford University to help cool the Stanford Linear Accelerator Center.

# # #

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New Regulations Will Guide the Sustainable Groundwater Management Plans of California Communities

AgNet | May 10, 2016

The Department of Water Resources (DWR) released proposed regulations that will guide local groundwater management and regulation of California's groundwater basins as outlined in the historic Sustainable Groundwater Management Act (SGMA) enacted by Governor Edmund G. Brown Jr. in 2014. Improving Sustainable Groundwater Management is also a key element of the California Water Action Plan. These regulations will move California toward successful implementation of SGMA and more sustainable management of our groundwater resources.

Legislatively mandated to adopt the Groundwater Sustainability Plan (GSP) Regulations by June 1, 2016, DWR posted the GSP Regulations on its website in advance of presenting them to the California Water Commission at its May 18, 2016 meeting. The proposed regulations can be found here: http://www.water.ca.gov/groundwater/sgm/index.cfm.

From the outset, the SGMA was intended to recognize that groundwater is best managed on the local level and that each groundwater basin has unique characteristics and challenges. An inherently technical and complex task, managing groundwater requires regulations that can address the goal of sustainability across such a geologically and hydrologically diverse state as California.

These proposed regulations reflect DWR's responsibility under SGMA. DWR must evaluate the development and implementation of GSPs, alternatives, and coordination agreements by local Groundwater Sustainability Agencies or Local Agencies. The regulations cover such provisions as technical and reporting standards, sustainable management criteria, monitoring, evaluation and assessment, and plan amendments.

The proposed GSP regulations are the result of extensive public engagement and reflect the wide variety of perspectives provided by numerous advisory groups and statewide stakeholders, the general public, the State Water Resources Control Board and the California Water Commission. Throughout 2015 and 2016, DWR regularly met with more than a dozen SGMA advisory groups, conducted public meetings and webinars across the state, published issue papers to educate the public on the issues, prompt public discussion and gather feedback.

Groundwater is vital to California and supplies over a third of the water Californians use, and as much as 60% or more in some areas during times of drought. SGMA requires local agencies to draft plans to bring groundwater aquifers into balanced levels of pumping and recharge (Water Code §10733.2) which will help prepare communities for a changing climate and future droughts. High and medium priority groundwater basins identified as critically over-drafted must be managed under GSPs, adjudications, or alternatives by January 31, 2020. All other high and medium priority basins must be managed under a GSP by January 31, 2022. DWR offers technical and financial assistance to help local agencies develop their plans.

In some parts of the San Joaquin Valley, groundwater levels are reaching record lows—up to 100 feet lower than previous records. In August 2015, the Department of Water Resources released a new NASA report showing land in the San Joaquin Valley sinking faster than ever before, nearly two inches per month in some locations. Continued extensive groundwater pumping puts nearby infrastructure at greater risk of costly damage.

# # #

For more information regarding California's groundwater please visit http://www.water.ca.gov/groundwater/index.cfm.

Water rights will be next big California fight
Modesto Bee | May 10, 2016 | Dan Walters

After years of drought, winter's rain- and snowstorms generated close to a normal supply of water for California. As winter turned to spring, the Bureau of Reclamation announced allocations to farmers.

Rice growers and other farmers in the Sacramento Valley north of the Sacramento-San Joaquin Delta were pleased to learn that they would receive 100 percent of their contracted water supplies. However, it was bad news for farmers south of the Delta, who were told they would get, at most, just 5 percent of the water they expected this year.

The disparity reflected, in part, environmental restrictions on pumping water from the Delta and sending it south.

It also reflected one of the most vexing aspects of California's perpetual conflict over water – a complex thicket of water rights dating back to the 19th century that's fundamentally based on seniority.

As summarized by the Public Policy Institute of California, "Those who own land along a river or who staked early claims on that water have top priority. Those with rights established before the first state water administrative system was created in 1914 are subject to less direct oversight than those with more recent rights. In times of shortage, junior rights are curtailed and right-holders must either reduce their water use or rely on water from other sources."

The farmers on the West Side of the San Joaquin Valley who see the greatest curtailment of deliveries lack the rights that earlier agricultural regions obtained, usually for rivers that flowed through their areas.

The drought, coupled with fears about the effects of climate change on California's future water supplies, has already compelled California to rethink aspects of its water situation long thought to be politically untouchable.

It's led to the first system for regulating use of underground aquifers, which supply about a third of California's water, and seems to be reducing opposition to creating more reservoirs to capture winter rains.

California's next water policy frontier, it would seem, is revising its water rights – either directly or indirectly.

The PPIC report on water policy reform, released last year, notes that California already has laws on the books, rarely invoked, that might allow regulators to abridge even the most senior water rights on grounds of public health or safety or environmental damage.

A case pending before the water board, however, indicates the long-simmering water rights issue is beginning to boil.

The board accuses the Byron-Bethany Irrigation District, which reaches from Discovery Bay down to Highway 132 near Vernalis, of continuing to take water from the Delta for 13 days after it and other districts with senior water rights had been told to curtail pumping.

“We are a test case,” Byron-Bethany’s manager, Rick Gilmore, told The Record in Stockton. “I think this has become a larger issue. I think the water board wants to use this as a precedent so they can start to gain more control over senior water right users.”

The case may be headed to the courts, and the outcome will frame the state’s powers to crack the seemingly solid legal wall protecting long-standing water rights, which are especially important in the northern San Joaquin Valley.

# # #

California needs more water storage (East Bay Times My Word)
East Bay Times | May 10, 2016 | Donald Anthrop

California desperately needs additional water storage capacity. The proposed enlargement of Los Vaqueros Reservoir by 115,000 acre-feet is a step in the right direction, albeit a very small one. An acre-foot is the amount of water needed to cover 1 acre of land to a depth of 1 foot.

After California voters authorized the State Water Project in 1960, the Department of Water Resources signed contracts with various water agencies in the state for future entitlements to the water that the SWP would develop.

These entitlements total 4.2 million acre-feet annually. Because the SWP was never completed, it has never been able to deliver more than 3.5 million acre-feet to contractors.

Last year, the contractors received just 20 percent of entitlements. This year they will receive just 60 percent.

Worse still, the contractors for federal Central Valley Project water south of the Delta will receive only 5 percent of their 1.9 million acre-feet entitlement this year. Despite complaints from environmentalists, Central Valley farmers have done a remarkable job of conserving water and coping with the drought, but agriculture cannot exist with 5 percent of its water supply. As water became scarce in the drought, farmers bought water from willing sellers or pumped groundwater. Both are expensive and water costs became a significant production cost.

In response, many farmers shifted from cotton to higher-value crops such as almonds and grapes. The evapotranspiration losses for any crop are basically a function of the percentage of land covered with green vegetation, the temperature and the length of the growing season.

Because orchard crops generally have a longer growing season than field crops, the evapotranspiration losses are slightly higher. However, this is partially offset by the more efficient irrigation systems used on orchards and vineyards.

Regardless of the irrigation system used, it is impossible to keep orchards alive with 5 percent of the water supply.

Various court and regulatory agency rulings have required both the SWP and federal CVP to deliver more water for fish and wildlife purposes as well as reduce the water supplies available to California water contractors.

A 1964 U.S. Supreme Court decision reduced Metropolitan Water District's entitlement to Colorado River water by 400,000 acre-feet per year, and a 1994 ruling by the State Water Resources Control Board reduced the Los Angeles Department of Water and Power's take from the Owens River aqueduct by about 100,000 acre-feet.

The Central Valley Project Improvement Act, which Congress passed in 1992, requires the CVP to dedicate an additional 800,000 acre-feet annually for fish and wildlife enhancement. Since no new storage was authorized, the 800,000 acre-feet must come from existing storage.

The most important factor has been population growth. In 1960, when voters authorized construction of the SWP, California's population was 15.9 million. Today it is 39.1 million.

Just the additional residential water consumption by these 23 million additional residents is some 2.6 million acre-feet per year. Over the past five years, California's population has increased by 360,000 per year. Over the next 10 years, that rate of growth translates into 3.6 million more people.

California needs to either start building more water storage or stop issuing residential building permits.

The environmentalists would have us all living in 400-square-foot apartments in 100-story buildings on top of BART stations, riding bicycles, eating vegetarian dinners and drinking recycled sewage water. Is this the new California dream?

# # #

Donald Anthrop is professor emeritus in the Department of Environmental Studies at San Jose State University. He is a resident of Berkeley.

It's "Go Time" for Improving California's Voluntary Water Market
ACWA News | May 5, 2016 | Tim Quinn

As we have seen over the past few years, droughts have a way of spurring leadership on important policy issues. In the past two years alone, ACWA and its members have played a leading role in putting substantive proposals on the table to address key issues including sustainable groundwater management, headwaters health and water storage investments.

Water market improvements are the next logical step in implementing a long-term, comprehensive water management strategy. They are a proven water management tool that has been valuable in the past, and can be even more valuable in the future.

That's why the water community is taking the lead again with thoughtful recommendations for improving the water transfer process and creating greater access to the voluntary water market – especially for smaller agencies.

ACWA's "Recommendations for Improving Water Transfers and Access to Water Markets in California" – officially released today in conjunction with the ACWA 2016 Spring Conference & Exhibition in Monterey – come as ACWA and other organizations are discussing market-oriented solutions as part of a comprehensive water management strategy for California. These discussions represent the most significant movement on the market since 1991, when the Wilson Administration created the Drought Water Bank to help agencies through a multi-year dry spell.

Developed by a statewide advisory committee with deep experience and expertise in transfers, our recommendations focus on twin goals: 1) significantly reducing the costs and timeframe associated with transfers, and 2) making it easier to access the market, particularly for smaller agencies.

While California currently has a water market that functions well for some agencies, we can and should do better. If we can lower the transaction costs and make information more readily available, people may be surprised by the level of activity that will result.

ACWA's recommendations are powerful reading, and will be tremendously helpful as we work with other organizations such as the Environmental Defense Fund and the Water Foundation to shape legislation and administrative proposals this year.

I look forward to these ongoing stakeholder discussions and working to make the state's water market the next landmark in the evolution of California water policy.

# # #

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State must brace for big water supply changes
Fresno Bee | May 4, 2016 | Jay Lund

California faces major changes in its water supply. The sooner everyone realizes these changes are coming, the better the state will be able to cope with what lies ahead.

Today's changes are driven by efforts to end groundwater depletion, by sea level rise and loss of snowpack, salts and nitrate accumulating in groundwater, new invasive species, population growth and California's globalized economy and agriculture.

Here are six inevitable changes that California will need to deal with to sustain the state's ecosystems and water supplies:

1. The Sacramento-San Joaquin Delta will export less water and some islands will flood. The Delta will remain California's most difficult water problem. Some deeply subsided Delta islands and levees are financially unsustainable and will flood without large state subsidies. With land subsidence, sea level rise, increasing seepage and chance of earthquakes, their agricultural value is limited and repair costs are high. Environmental requirements already reduce Delta water diversions. New flow requirements and climate changes are likely to further reduce water diversions upstream and within the Delta. Ending groundwater overdraft will increase demands for Delta water.

2. The San Joaquin Valley will have less irrigated land. The southern Central Valley is a huge productive agricultural region that relies on water from Delta imports, groundwater overdraft and San Joaquin River diversions. Reductions in these sources will decrease availability by 1.5 million to 4 million acre-feet per year, requiring the fallowing of 500,000 to 1 million acres of its 5 million irrigated acres. Some of this land will be retired due to salinization and urbanization. Continued shifts to higher-value crops, especially orchards, will help maintain agricultural revenues and jobs, as they have during the drought.

3. Urban areas will use less water, reuse more wastewater and capture more stormwater. Water supply risks and costs will drive cities to use less and capture more water. These changes will improve supply reliability and free some water for agriculture and environmental uses, at some cost. But not all actions are equally effective. Water conservation, reuse and stormwater capture are all effective in coastal areas, which drain to the sea. Reducing landscape irrigation is more effective for inland conservation.

4. Some wild native species will become unsustainable. A warmer climate, combined with continued stress on water and land, and the dilution of wild genetic stock by hatchery fish, will make some native fish species unsustainable in the wild, despite concerted restoration efforts. Native plants and animals throughout California face similar risks. Not all can be expected to survive. This challenges our endangered-species laws and demands more attention to effective ecosystem management.

5. Water solutions and funding will become more local and regional. As federal and state governments face diminished funding and capability, local and regional agencies will become more central to solving water problems. Making state and federal regulations more effective and supportive of local and statewide interests in public health, the economy and environmental protection is a major challenge.

6. Water will be managed more tightly. California's 2014 groundwater legislation will require many areas to account for and manage groundwater, and all water, more closely. Less cumbersome court procedures, groundwater rights and water-accounting practices are needed. Tighter accounting will make water rights more valuable and make groundwater more sustainable, but will add some costs.

Change is never easy, and responding to these changes will be hard but will ultimately improve the sustainability of California's ecosystems and water supplies. Most solutions will be funded and implemented by local and regional governments. State agencies must support them with transparent, workable water-accounting and legal authorities, and represent statewide environmental and health interests. Thoughtfully preparing for the inevitable changes in water policy will be messy, but it is needed to support California's environment and economy.

# # #

Oakdale Irrigation District quietly cancels water sale
Modesto bee | April 30, 2016 | Garth Stapley

Oakdale — Irrigation leaders have privately canceled plans to sell up to 9,000 acre-feet of Stanislaus River water to buyers south of the Delta, court documents say, but intend to pursue an undisclosed variation of the deal.

The unannounced change won't affect the Oakdale Irrigation District's much larger sale of 32,500 acre-feet to outside buyers paying $9.75 million. That water is temporarily swelling the now swift-flowing Stanislaus, doing double duty – as requested by state and federal wildlife agencies – in propelling young salmon toward the ocean for a few weeks.

While the larger deal represents a straight cash-for-surplus-water transaction, water in the smaller deal, potentially worth $4 million, would be freed up by OID farmers volunteering to fallow some land. Two critics sued to stop that deal and asked a judge to halt the water transfer.

A pause might have affected both sales because OID initially planned to send the total amount down the Stanislaus in so-called pulse flows benefiting fish.

But Stanislaus Superior Court Judge William Mayhew on April 19 declined to stop the flow, apparently after OID suddenly disclosed that the district no longer plans to sell the smaller amount as originally planned.

"OID reversed its position," said Sacramento attorney Osha Meserve after the April 19 huddle, held out of public view in the judge's chamber.

No public explanation

OID General Manager Steve Knell, citing the lawsuit, refused to clarify the change, which has not been explained in board meetings or accompanying reports. Neither did OID – dogged by criticism for lack of transparency – share with the court what it plans to do with water to be freed up in the smaller deal.

"Oakdale Irrigation District is playing a shell game with its water," says a court briefing filed Friday by Meserve. "OID attempts to mislead the public as to what it is actually doing with its water."

Papers filed in court Wednesday by OID attorneys confirm that the larger deal remains in place, while the initial smaller deal fell apart. OID expects to resurrect the smaller deal, the documents say without giving details.

Although the OID board narrowly approved its end of the smaller deal in March on a 3-2 vote, prospective buyers never agreed, according to court declarations. They were signed by representatives of the San Luis & Delta-Mendota Water Authority, a consortium of 29 water buyers, and State Water Contractors, composed of 27 water agencies.

The smaller deal was not consummated “in part because agencies with regulatory authority over transfers indicated they would not approve such a transfer in 2016,” said Frances Mizuno, San Luis & Delta-Mendota assistant executive director, in a declaration.

OID’s briefing says the district decided that shipping water from the smaller deal “was not necessary” and “not viable.” OID still intends to implement the fallowing program, the document says without explaining.

“If there is any confusion regarding the facts, it is due to OID’s extraordinary efforts to obfuscate them,” Meserve said in her Friday briefing.

The initial arrangement for OID’s On-Farm Conservation Program – the smaller deal – would have shipped south 9,000 acre-feet for $400 an acre-foot; participating OID farmers would get 20 percent in cash and would spend 75 percent on efficiency upgrades, with OID keeping the final 5 percent.

That payout formula remains intact, OID’s briefing indicates, although the district expects less participation: As of Tuesday, farmers with only 605 acres total had signed up. OID operations manager Eric Thorburn anticipates eventually enrolling 1,000 acres, or one third the initial expectation, he said in a court declaration.

Conflict alleged

One of those farmers is OID board member Gary Osmundson, who previously confirmed that he applied to fallow about 105 acres, representing a potential $119,000 profit and one-sixth of the enrolled acreage so far.

Those bringing the lawsuit – farmers Louis Brichetto, an OID board member from 2001-06, and Robert Frobose – contend that Osmundson has a conflict under state law and should not have voted March 15. The lawsuit accuses Osmundson of “impermissible self-dealing”; without his vote, the On-Farm program would have died in a 2-2 tie.

Osmundson has said his attorney and the district’s attorney cleared him to vote because any OID customer was free to sign up. Brichetto and Frobose contend that a small portion of OID’s customer base – less than 1 percent in terms of acreage, as of Tuesday’s count – was selected to participate. Also, the March split vote gave Knell broad freedom to “make the necessary amendments to the agreement to conform to the landowner’s individual necessities.”

OID’s court papers ignored the Osmundson question.

Meserve, representing Brichetto and Frobose, called OID’s environmental document for the On-Farm program “grossly deficient” and asked that a judge order the district to conduct an expansive environmental impact report. It should thoroughly analyze how shipping water elsewhere could harm the groundwater table here, Meserve said in a briefing.

“Once that water is transferred, it is lost,” the document says.

Volume called insignificant

In a reply, OID attorneys said the water to be transferred under the initial plan would deprive local aquifers of only about one-tenth of 1 percent the amount that typically seeps down in the local basin.

“The impact is negligible and does not have a significant effect on the environment,” says the document, signed by Sacramento attorney Valerie Kincaid.

OID asked board members in April – five weeks after signing off on the initial environmental document – to hire an environmental consultant to screen applications to put farmland in the On-Farm program. That proves OID knew its initial document was deficient, opponents charge.

“Mitigation must occur before, not after, adoption of an environmental document,” Meserve said.

Efficiency upgrades funded by water-sale profit would help OID demonstrate that it is making improvements required by state water officials, Knell said in a court declaration. Without that track record, the district could find itself ineligible for state funding, such as a $3 million grant for which OID recently applied, he said.

Knell noted that Brichetto, an OID water customer, also farms about 3,600 acres outside OID’s boundary. In February, Brichetto asked whether he might fallow land under the On-Farm program, and instead of getting money, he would transfer that freed-up water to the outlying farm. OID said “no.”

“The plaintiffs’ request (to halt the On-Farm deal) is an extension of their campaign to improperly manipulate and control OID operations,” Kincaid concluded.

Brichetto, who serves on the Stanislaus Water Advisory Committee, which works on groundwater issues, says he has been consistent with efforts to keep water in this area to benefit locals.

A lawsuit hearing is scheduled for 8 a.m. Wednesday in Department 22 of the City Towers building, 801 10th St., Modesto.

# # #

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Is Silicon Valley Key to Delta Tunnels Plan?

Santa Clara County depends heavily on water imported through the Delta, which is why the county's wholesale water provider may participate in an expensive plan to build new water conveyance tunnels under the Delta.

Water Deeply | April 25, 2016 | Tara Lohan

SAN JOSE, California – The realities of water distribution in California have caused regional strife over the years. Most of the state's precipitation falls in the northern part of California, but the greatest demand for water is in the Central Valley and further south. So California engineered the country's most complex plumbing system to send water hundreds of miles south, much to the chagrin of many of the state's northern residents.

The lynchpin to this system is the Sacramento-San Joaquin Delta, a water source for 25 million people and 3 million acres (1.2 million hectares) of agricultural land. Pumps at the south end of the Delta divert water via aqueducts to farms and cities further south and west.

The Delta has more than 1,000 miles (1,600km) of waterways snaking between numerous islands, many of which support farms and small communities. The area also provides vital habitat for migratory birds and many fish species.

But the Delta is threatened. Many of its islands are below sea level (and sinking), relying on levees that are one strong seismic shake away from disaster. And the ecosystem itself faces serious challenges. The Delta needs enough fresh water to sweep away pollutants, limit saltwater intrusion and protect fish.

For decades, various interests have battled over how much water should be pumped out of the system for south-of-the-Delta water users. At the same time, federal regulators have stepped in to protect fish and place limits on pumping at certain times of the year.

Gov. Jerry Brown is championing a plan, California Water Fix, he says will protect the Delta's ecosystem and deliver water more reliably to those south of the Delta. But first he needs buy-in from some of the state's biggest water users. For the most part, support for the project has fallen along familiar regional lines, with the biggest proponents in the Central Valley and Southern California, and the biggest opponents in the north.

Silicon Valley residents may think of themselves as Northern Californians, but when it comes to water supply, they actually have more in common with Southern Californians. As of right now, Santa Clara Valley Water District – the water wholesaler for Santa Clara County that provides water for nearly 2 million people – is weighing whether or not to participate in California Water Fix, which has a hefty price tag. The district's decision could affect more than just Silicon Valley.

When Barbara Keegan travels to Southern California she hears a lot about how crucial California Water Fix is to the future of the state. But when Keegan returns home to Santa Clara County, where she is the board chair of the Santa Clara Valley Water District, she hears her constituents talking about how Southern California is "trying to steal our water."

“A lot of people like to characterize this as a battle of north versus south,” said Keegan. “What a lot of people don’t realize is that anyone who is south of the Delta, even if you’re in Northern California, you are dependent on that water.”

Santa Clara County imports more than half of its water and 40 percent of that comes through Delta conveyance.

“So we have a stake in finding a solution,” said Keegan. “Because if 40 percent of our water were to disappear, that would be a big problem.”

Few people disagree that the Delta is in trouble, but there is no easily agreed upon solution. Keegan said her water district has faced declining allocations over the years because of regulatory requirements, which has meant less water. If the district says no to the project, it doesn’t mean things stay the same, said Keegan. “Maintaining the status quo isn’t really maintaining the status quo because it means constantly diminishing water. It could also potentially mean further degradation of the Delta.”

The water district will likely be expected to take a position on the project by late fall. “We haven’t made up our minds yet,” she said. “We are still considering things and there are a lot of complex issues involved.”

For starters, the project is controversial. While Brown and his supporters say it will increase water reliability and protect the ecosystem, others are concerned that siphoning water at the north end of the Delta will mean worsening water conditions and less water flowing through the Delta farmers and wildlife.

But we’ve been here before with this deadlock. California Water Fix is actually a new name given to a pretty old idea. For decades water managers and politicians have been scheming over ways to bypass the Delta with a water conveyance system that would more directly deliver water to southern users. Back in the 1980s, Gov. Brown proposed the idea of a peripheral canal that would skirt the Delta. Voters soundly defeated the proposition in 1982.

Fast forward to 2006 when work first began on the Bay Delta Conservation Plan, conceived as an attempt to fund new water conveyance along with a massive restoration of the Delta’s ecosystem. When the 40,000-page draft of the plan was finally released in 2013, it didn’t get rave reviews. So last year, the Brown administration divided the plan, creating California Water Fix to address water conveyance issues and California Eco Restore, which pared down the habitat restoration efforts.

The heart of the California Water Fix is now twin tunnels that go under the Delta. The tunnels would be a massive 40ft (12m) in diameter and sunk up to 150ft (46m) underground. They’d siphon water from the Sacramento River and deliver it to export facilities in the South Delta. It would eliminate the need to pump all the exported water out of the South Delta, as is done now, which has caused river flows to be reversed and proved a danger to fish species that are caught in the pumps or pulled off their migration course.

The plan comes with a hefty price tag, calculated right now at $15 billion for capital design and construction, and closer to $17 billion with mitigation, operations and maintenance costs figured in. Keegan said her agency would be on the hook for about 5 to 6 percent of the project, which puts the minimal cost for Santa Clara County around $1 billion. But it's not the initial price tag that has her worried.

"I'm a civil engineer by trade and I know the history of large infrastructure public works projects," she said. "There are very few of them that come within budget. A successful project could be one that only goes over by 50 percent or doubles."

It is not yet clear to the water district's board if the plan would be cost-effective for Santa Clara County, she said. There are still a lot of unknowns. "What if costs increase? What if some of the other partners drop out?" she questioned. "Could our county end up having to pay a disproportionate share of the project?"

And how to pay for the project is another issue. The district receives Delta water through the State Water Project, which is paid for through property taxes. But raising property taxes to pay for the tunnels project might not be possible. The Howard Jarvis Taxpayers Association has cautioned the water district that raising property taxes without a public vote to fund the project would be illegal since it was not part of the original State Water Project infrastructure.

Keegan said she has heard positions contrary on that issue, but whether it is legal is only one matter; whether it's the right thing to do is another. "If we participate in this then the people who live here are going to be paying for it," she said.

Brian Schmidt, a former district director and vice chair of the Santa Clara Valley Water District, said he believes that cost overruns are a serious concern. "I don't see a way in advance to reduce that risk to a level we can ignore," he said.

A tour guide at the Silicon Valley Advanced Water Purification Center in San Jose, California, shows off a container of treated water. Santa Clara Valley Water District hopes to expand its water reuse program. (Tara Lohan)

A tour guide at the Silicon Valley Advanced Water Purification Center in San Jose, California, shows off a container of treated water. Santa Clara Valley Water District hopes to expand its water reuse program. (Tara Lohan)

Rita Norton, a member of the water district's environmental advisory committee, called the "slice and dice" separation of the project into two initiatives a politically astute move by its proponents, but worries about whether the environmental portion will ever be funded, even if the infrastructure project does get approval.

And she sees other implications if Santa Clara Valley Water District does participate. "How much indirectly by supporting this project is the water district continuing unsustainable water use in the Central Valley?" she asked. "It's being sold as a water reliability project, but what else is good for water reliability? How else could these dollars be spent?"

Right now, Delta water is a vital supply for Santa Clara County, but could that change in the future? Keegan said that the district is invested in the idea of recycled water. It recently completed an Advanced Water Purification Center that can treat wastewater to drinking water quality standards, although so far it's only used for non-potable uses.

"We plan to aggressively expand that," she said. "A lot of times with projects your limitations are financial or just the time that it takes to do certain things. In this case one of the limiting factors is really getting public acceptance."

Faced with paying more money to import water, will Santa Clara County residents embrace drinking recycled water ?

Schmidt hopes so.

"I think the tunnels would reduce the incentive to greater self-sufficiency through increased direct and indirect potable reuse," said Schmidt. "I see potable reuse as the real future for Silicon Valley with imported water serving primarily as backup sources."

A decision is likely coming this fall from the water district on whether or not it will participate. Keegan said the district will hold more workshops and public meetings, and welcomes input from residents. But, she said this fall's decision may not be a definitive yes or no. It's possible that they will move forward with helping to fund more studies to determine the preliminary engineering and whether cost estimates are in fact realistic. Already, the district has contributed $9 million to studies on the project.

There is likely to be a lot of pressure from project proponents to get Bay Area water districts like Santa Clara Valley on board so that the project has enough critical mass and money to move forward.

"My own opinion is that we are sort of like a swing vote on this," said Norton. "We are quite influential."

How key Santa Clara County will be to the project remains to be seen, but minimally its involvement would be symbolic. "We are a Northern California water agency, the fact that if we choose to buy into this and partner with it, that sends a message," said Keegan.

But ultimately, she said, "We want to see a cost-effective comprehensive and reliable long-term solution for the Delta that also includes something that meets the environmental needs. So, maybe that is an impossible challenge, but that's what we are looking for."

Water Deeply thanks the Silicon Valley Community Foundation for their support in making this reporting series possible.

# # #

Five Things to Know About Desalination

Water Deeply | April 21, 2016 | Alvar Escriva-Bou

Since California has so much oceanfront, desalination may seem like a no-brainer to increase water supply. But there are a few things that are important to understand about why it's not always the best solution.

Could desalination provide a reliable supply of water for California? A number of policy makers have been raising this question in response to water-supply challenges brought on by the drought. The Pacific Ocean provides the "reservoir," and the technology has continued to improve. Around the globe, some similarly dry places are getting a significant share of their water through desalination. So is it a viable, practical water supply for California?

Officials in some cities, especially in Southern California, certainly think so and are taking steps to develop desalination plants. The state's water bond, approved by voters in 2014, allocates $725 million to help local water agencies build water recycling and desalination plants. Other recent proposals also prioritize desalination, including Sen. Dianne Feinstein's proposed water bill, which would reauthorize the Desalination Act of 1996 by providing $100 million in federal funds for research, design and construction of desalination projects; Assembly Bill 1925 by assemblywoman Ling Ling Chang, which would establish annual goals for the production of potable water through desalination; and the Obama administration's proposed budget for 2017, which would launch an Energy-Water Desalination Hub and provide funding for other desalination initiatives.

California has more than 60 years of experience with desalination, and yet the process remains a minimal part of the state's water system, for a number of reasons. Here are some key facts about desalination in California today.

1. It's not just about the ocean: Although desalination often uses seawater, in California and other western states, it has mostly been used to remove salt from brackish waters – which are saltier than freshwater but fresher than seawater. Some waters are naturally brackish; others become brackish because of human activity, such as irrigation or indoor urban uses.

In 2013, the Department of Water Resources reported that the state's capacity for desalination in existing plants was almost 140,000 acre-feet (172.6 million cubic meters) from brackish sources, but only 562 acre-feet (700,000 cubic meters) from seawater. (This latter number jumped to almost 57,000 acre-feet (70 million cubic meters) with the 2016 opening of the Carlsbad desalination plant near San Diego.) Some inland Southern California cities already rely on desalted brackish groundwater as a major component of their supplies. Brackish water from Mallard Slough in Contra Costa County would diversify the supply portfolio of five major San Francisco Bay Area water utilities if the Bay Area Regional Desalination Project were built.

2. Seawater desalination will remain an expensive source of water: The processes, costs, energy usage, environmental impacts and greenhouse gas emissions of removing salts from water depend on the quantity of salt in the water. Current costs of large seawater desalination plants such as the one in Carlsbad are over $2,000 per acre-foot of water, compared to as little as $600 per acre-foot for desalinating brackish water.

According to a recent report by the White House, current seawater desalination technologies will need to undergo a fourfold reduction in cost, a threefold decrease in electricity usage and a twofold cut in carbon-dioxide emissions to effectively compete with traditional water sources.

Even with such ambitious improvements, the estimated cost will be more than $600 per acre-foot – still a high price relative to most other sources available in California. Ocean desalination will hardly ever be affordable for most agricultural uses, and reductions in costs are still needed to make desalination of brackish water work for most farms.

3. California's water supply varies from year to year, while desalination is a fixed, long-term investment: Desalination can provide a reliable water source that is unaffected by climatic variability. But customers will also have to pay the higher costs for investments in desalted water in wet years when cheaper sources are available. At this point, seawater desalination makes the most sense for those utilities that cannot meet long-term local demands or those unable to obtain reliable water from cheaper sources during droughts. This is the case for some cities in Southern California and the Central Coast.

4. California has not invested in desalination as much as some other places because we have relatively abundant supplies from other sources. Even in times of drought, California has many water sources that can carry it through long, dry periods. We also have an extensive infrastructure network that enables us to share water both within and across regions. This gives us a lot of flexibility to get through droughts compared to places like Israel, which is naturally very dry, and Australia, where some coastal cities are not well connected to statewide infrastructure.

5. Environmental impacts are a concern. The most significant impacts are associated with the effects of the water intake and brine disposal on marine life. Brine disposal is also an environmental and economic challenge in inland plants. The high energy-intensity of desalination processes compared with other sources of water brings climate change concerns.

A drought is a bad time to rush into investments in desalination to solve water supply problems that can be solved more effectively in other ways. We would do well to learn from the successes and mistakes in other places that have turned to desalination in dry times.

Many desalination plants that were prompted by droughts – including plants in Australia, Spain and here at home in Santa Barbara – either never were used or closed within a few years of operation because their high-cost water could not be justified once the rains returned. Desalination is clearly not a silver bullet for California, but it is one tool to consider for communities facing long-term water insecurity.

The views expressed in this article belong to the author and do not necessarily reflect the editorial policy of Water Deeply.

# # #

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MID raises farm water prices 20 percent
Modesto Bee | April 19, 2016 | Garth Stapley

Modesto-area farmers will pay higher water rates this year, irrigation leaders decided Tuesday after a hearing dominated by a dispute over electricity customers being forced to subsidize farm water prices.

The issue last week leaped from the boardroom to the courtroom with a class-action lawsuit asking a judge to reverse the 90-year-old subsidy.

Some in the audience spoke about the legal challenge and asked for more aggressive action to eliminate the policy. Power customers will shoulder 82 percent, or more than $17 million, of the cost for delivering water this year, even after Tuesday's rate increase.

"I object to this subsidy," said Lee Delano, a retired MID assistant manager.

Steve Mohasci, a retired utility economist, said 115,000 MID electricity customers, many of them poor, are overpaying to keep water prices low for about 600 farms, with the average subsidy about $157,000.

"That's not exactly equitable social policy," he said.

John Duarte, who owns a Hughson nursery, calculated that farmers will pay $16.75 per acre-foot of water with Tuesday's increase and concluded, "I think the water's too cheap." Farmers would need to pay about $92 to cover MID's delivery costs, but charging that much would lead to growers pumping more groundwater, lowering water tables and perhaps resulting in "astronomical environmental problems," he said.

"I encourage getting to a more realistic water rate," said Duarte, figuring that about doubling the new price might strike a balance.

Board member John Mensinger, who represents an urban district, said, "I happen to agree (Tuesday's increase) is not enough." But a majority of the five-member MID board are themselves farmers, and even if they wanted sharply higher prices, state law governing rate hikes would prevent that without going through another three-month approval process, Mensinger said.

Others came to farmers' defense.

"I want to compliment this board for staying fast and not wavering," said dairyman Pete Verburg.

Attorney Stacy Henderson, who represents some growers, said MID's irrigation division deserves, but doesn't get, "proper credit" for some things that benefit its power division; farm advocates have noted that MID canals accept power poles and carry rainwater away from the

city, for instance. Henderson predicted that “misrepresentations will be clarified,” and “the result will be that what MID is doing is fair, legal and proper.”

Tuesday’s action will bring 20 percent more water revenue to MID. A drought surcharge imposed in each of the past two years will not be levied this year; MID expects to deliver 36 inches of water, double last year’s historic low 18-inch allocation.

Board members Nick Blom and Larry Byrd, both irrigation customers, said small farms struggle to make ends meet and all farmers pay electric bills like everyone else. Byrd said agricultural pumps brought MID $13.8 million in 2015.

“Three or four people have been beating the drum about the subsidy – I can hardly say the word, it makes me so sick to think about it,” Byrd said. “Now the snowball has gotten bigger and they’re all tickled pink because they’ve gotten what they want with all this media attention, but it’s pitting the farmer against the city.

“I’m not going to let anybody put pressure on me,” Byrd continued. “Hell yes, I’m ready to take on the fight.”

Duarte, a 2011 MID candidate who had not previously addressed the issue, said he “didn’t hear any disrespect” from Tuesday’s audience. “We’re just giving you ideas on how we see things and what you might want to weigh,” he said.

The class-action lawsuit mentions the farm subsidy while focusing on the larger issue of MID simply charging more than it costs to deliver electricity. Bonding documents last summer suggested that MID’s net electricity profit came to $466 million from 2010 to 2014, or an average $93 million a year; the extra money pays down debt and builds reserves.

In other action, MID showed no sign of backing down on a plan to drastically lower subsidies for new solar customers despite strong opposition from representatives of the solar industry. The board is scheduled to vote on that issue at next week’s meeting starting at 9 a.m. Tuesday in the chamber at 1231 11th St., Modesto.

# # #

New Bay Area dam project reaches major milestone
San Jose Mercury News | April 19, 2016 | Paul Rogers

Work continues on a new water intake tower under construction as workmen strive to complete the new Calaveras Dam on the Santa Clara-Alameda County border near Fremont, Calif., Friday, April, 8, 2016. In a major milestone toward the largest reservoir project in the Bay Area in nearly 20 years, workers have completed the spillway at the new Calaveras Dam on the Santa Clara-Alameda County border. The spillway is as wide as eight lanes of freeway, and allows crews on the $810 million project to move forward building a new 220-foot tall dam. The project to replace the old Calaveras Dam, built in 1925, with a more earthquake-proof one by 2019, is a key element as part of a 15-year, nearly $5 billion upgrade of the Hetch Hetchy water system. (Patrick Tehan/Bay Area News Group) (Patrick Tehan)

In a significant step for the largest reservoir project in the Bay Area in 20 years, workers have finished building the spillway -- a massive concrete channel as wide as eight lanes of freeway and a quarter mile long -- at Calaveras Dam near the Alameda-Santa Clara county line.

The $810 million project to replace the old dam with a new, more earthquake-proof version has been beset by delays and cost overruns, due to the discovery of ancient landslides and other difficulties in the years since work began in 2011 that have made the project more complicated.

Tucked away in the remote hillsides east of Interstate 680, Calaveras Reservoir is the largest reservoir for the Hetch Hetchy system in the Bay Area, a key part of providing water to 2.6 million customers in Alameda, Santa Clara, San Mateo and San Francisco counties.

Completing the spillway, which is essentially an overflow channel so that when the reservoir fills, the water doesn't flow uncontrolled over the top of the dam, means work can begin now on the final part of the project, the construction of the 220-foot-high earth-and rockfill dam itself.

"It's a major milestone," said Dan Wade, director of the San Francisco Public Utility Commission's Water System Improvement Program.

When it was built in 1925, Calaveras was the tallest earth-fill dam in the world, an engineering marvel that created a lake three miles long. But in 2001, the state Division of Safety of Dams declared it unsafe for a major earthquake.

"They knew the fault was there" in 1925, Wade said, "but they knew less about it than we know now."

If the dam collapsed during a big quake on the Calaveras Fault, it would send a 30-foot-high wall of water rushing into Fremont and toward Interstate 880, studies showed, potentially killing thousands of people.

Because of the threat, the state ordered the reservoir drained to no more than 40 percent of capacity, losing enough water storage for 300,000 people a year.

The original Calaveras Dam was built by crews with horses and wagons, under the direction of California's most famous water engineer, William Mulholland. In 1913, Mulholland supervised construction of the Los Angeles Aqueduct, which brought water from Owens Valley that enabled Los Angeles to grow into the nation's second-largest metropolis, a story on which the movie "Chinatown" is loosely based.

The new dam will be the same size as the old one, built 400 yards downstream on Calaveras Creek. It is the largest such construction project in the Bay Area since Los Vaqueros Reservoir was built in Contra Costa County in 1998.

When finished, the base of the dam will be a quarter-mile thick, compacted with modern equipment much tighter than was possible for the old dam. It will contain enough dirt and rock to fill 330,000 dump trucks, and be built to withstand a 7.25 magnitude quake. The dam's clay core will allow it to be built higher one day so that the current reservoir, at 96,000 acre feet, could hold four times as much water.

The current dam is considered safe now with its lower level of water.

The project's finish line has moved several times. In 2009, the project was expected to cost $409 million and be completed in 2015. Now the cost is $810 million, with a completion date of 2019.

The reason? Once they started digging, the 150 workers found two ancient landslides in the 20 million-year-old geologic layer cake nearby, forcing them to carve away millions of tons of rock and sediment to better anchor the new dam on more solid footing. Recently, they learned of the need to shore up hillsides more than had been expected.

"We did extensive investigations with a world-class team that has built dams around the world," said Wade. "But this is an extremely complex site geologically. So there have been some challenges."

The people whose rate increases are paying for the project say they understand.

"We do not believe it could have been avoided," said Nicole Sandkulla, a civil engineer and CEO of the Bay Area Water Supply and Conservation Agency, an organization of 26 cities and water districts from Daly City to Hayward that purchase Hetch Hetchy Water from San Francisco.

"They are moving essentially an entire mountain that is in a fault zone, and they have found things that they just couldn't see on top of the earth," she said.

The work also has so far revealed 844 fossils, including 12 whale skulls and the tooth of a 50-foot long megalodon shark.

The project is the last big part of a 15-year, $4.8 billion effort to bring the Hetch Hetchy System in the Bay Area up to modern seismic standards. The work included building a massive water tunnel under the bay and upgrading water treatment plants and pipes.

Environmentalists hated the old Calaveras Dam because it released no water for rainbow trout, occasional steelhead and other fish in Calaveras Creek and Alameda Creek downstream. The new reservoir will regularly release water, and the project also will build a fish ladder on a smaller diversion dam nearby, opening up about 8 miles of creek.

"As you go upstream, it gets pretty remote. It looks like a stream in the foothills of the Sierras," said Jeff Miller, executive director of the Alameda Creek Alliance, a non-profit group. "It's pretty unique. It's the last chance we've got to get these fish back in the East Bay."

Workers demolish remnants of the old dam as they strive to complete the new Calaveras Dam on the Santa Clara-Alameda County border near Fremont, Calif.,
Workers demolish remnants of the old dam as they strive to complete the new Calaveras Dam on the Santa Clara-Alameda County border near Fremont, Calif., Friday, April, 8, 2016. In a major milestone toward the largest reservoir project in the Bay Area in nearly 20 years, workers have completed the spillway at the new Calaveras Dam on the Santa Clara-Alameda County border. The spillway is as wide as eight lanes of freeway, and allows crews on the $810 million project to move forward building a new 220-foot tall dam. The project to replace the old Calaveras Dam, built in 1925, with a more earthquake-proof one by 2019, is a key element as part of a 15-year, nearly $5 billion upgrade of the Hetch Hetchy water system. (Patrick Tehan/Bay Area News Group) (Patrick Tehan)

# # #

Drought Hits Coastal Fish and Farms Hard

The small towns of coastal San Mateo county have weathered the drought very differently from most of the rest of Silicon Valley. Without large water projects, reservoirs or utilities to rely on, the fish, farms and people share limited water resources from creeks and aquifers.

Water Deeply | April 18, 2016 | Tara Lohan

PESCADERO, California – Jose Ramirez can't complain. "I don't worry this year for water," he said, looking out over a field of olallieberries bursting with white blossoms. "I'm happy."

Ramirez has been farming this plot of 25 acres (10 hectares) in Pescadero, California, for 11 years. He's called a "tenant farmer," an arrangement typical in this rural, coastal area of San Mateo County. The land he works is owned by the Peninsula Open Space Trust.

Thanks to winter rains this year, he has enough water, which he pumps from Pescadero Creek, to allow him to plant flowers, fava beans, sage and thyme, in addition to his berries, which will become the filling in the local tavern's signature olallieberry pie.

This year's lack of water stress is a sharp contrast to the last several years when the region was slammed by drought and Ramirez fallowed nearly half his acreage. And it's not just farmers like Ramirez who were impacted.

Up the creek is Memorial Park, one of several forested county parks that are flush in the summer with campers and hikers. But the parks, too, have felt the effects of drought.

In 2014 the San Mateo County Parks Department had to close the campground and cancel 2,500 reservations because of low water and an algae bloom in the creek – a considerable ding to revenue, said Marlene Finley, the director of San Mateo County Parks. Last year they only booked the campground at half capacity, closed the showers and brought in portable toilets to save water.

"The drought has affected us all severely," said park ranger Vern Selvy. This south coast area has no large water utilities or big reservoirs and is not connected to any of the state or federal water projects that funnel snow melt from the Sierra Nevada.

"Fish, farms and people here depend on the same limited water resources," said Kellyx Nelson, executive director of San Mateo County Resource Conservation District, which works as an independent liaison between public agencies, landowners, land managers and special interest groups to protect, conserve and restore natural resources.

This resource sharing has led to innovative partnerships and projects, but big concerns still remain that have been made more obvious in times of water shortage.

Self-Reliant Living

In many ways the area is self-reliant and fairly isolated. Most people who visit here snake along the curves of beautiful Highway 1 and stop to enjoy the beaches, wildlife and picture-perfect

Pacific sunsets. It's easy to miss the small roads penciled into the hillsides and the houses hidden in the thick tanoak and redwood forests just miles inland from the ocean.

People who live here like the isolation, said Don Horsley, the San Mateo County supervisor whose district covers the area. But it comes with its own set of challenges.

Sparsely populated areas here depend on water drawn from creeks, wells and springs. The county has eight water providers classified by the state as small water systems. Some of these have only a single connection or at most 14. Other public water systems in the coast area south of Half Moon Bay serve less than 100 connections and some just a few.

"Many of these residences were originally built as vacation homes, but now have people living in them year round," said Horsley. This can put a strain on water resources in lean years.

Those who rely on water pumped from Pescadero Creek and other streams or springs found they didn't have enough water during some of the summer months of the last few drought years. Many were forced to pay companies that hauled water into the area by truck.

"We don't want more people to live in these areas but we do want to support the people and businesses which do," said Horsley. He said his office helped by waiving fees and fast-tracking drilling permits for new wells for many of the local water providers, most of which are owned by the collection of landowners they serve. Upgraded water systems and septic systems are needed throughout the area and they are currently exploring other water sources to take the pressure off creeks.

Well drilling can be tough though, as well as expensive. "The geology is so complex here that neighboring properties often have wells with different results," said Nelson. "And it's regularly getting altered by seismic activity."

They are also hampered by a lack of information. Not only is the geology hard to understand but so are the groundwater resources. More wells are being drilled but no one is quite sure how much groundwater is actually available or its quality. "I wouldn't be surprised if there is a looming crisis," Nelson. "We just don't know."

Municipal water providers are required to take stock of water resources and plan decades out for projected water demand. But many areas of coastal San Mateo County don't have municipal water providers large enough to be tasked with this state mandate. "We don't know how much water is consumed now and we don't know how much will be needed in the future," said Nelson.

Interconnected Communities

As self-reliant as many people and communities are here, there are also many interconnections. Part of this comes from the simple laws of nature. When something changes in the environment, like the meander of a creek or the amount of rain, it has a ripple effect on everyone from fish to farmers.

Take Ramirez, for example. He pumps water from Pescadero Creek, a resource he shares with steelhead trout and coho salmon. And the drought has been especially hard on the fish, with populations in critical shape as local creeks have gone dry.

Last fall the last dam on the creek, which was in Memorial Park, was removed, opening up 62 miles (100km) of needed habitat that was previously out of reach for most young fish, or smolts.

“We had three years of drought and they have a three-year life cycle,” said park ranger Vern Selvy of the salmon. “So it has been tough.”

The fish need not just enough water, but the right kind of habitat, like pools, varying water depths and shaded, cool water. Removing dams and creating habitat complexity is also an important strategy for surviving drought.

“When we give aquatic organisms the ability to be nimble, we give them the ability to survive both drought and flood,” said Nelson. “We are trying to manage water for climate change and that means managing for a lack of water, an abundance of water and water coming at different times than it used to.”

Both fish and farmers are trying to adapt to the same conditions. In order to maintain the watersheds for healthy fish and other wildlife, farmers like Ramirez are trying to use less creek water and use what they have more efficiently.

The Peninsula Open Space Trust, which owns his land, has drilled a well that will help Ramirez cut down on the amount of water he draws from Pescadero Creek and he has changed to more efficient sprinkler heads on his irrigation. Another strategy is developing water storage by building retention ponds to capture rain and runoff during the winter months that can be used as a water supply in the summer when creek flows are especially low and especially critical for fish.

Ramirez is hoping to have a pond built on the property he farms. And nearby flower grower Dave Repetto wants to upgrade an existing pond on his land. It sounds like an easy solution, but its implementation is caught in a thicket of regulations.

“Projects here are critically needed, they are dire,” said Nelson. “And they are also extraordinarily complex.” To get anything done, a potential project to improve water systems or the watershed, may involve seven or eight local, state and federal agencies.

And this is where interdependence becomes a potential detriment.

Repetto has land just north of Pescadero in the San Gregorio watershed. There is an existing retention pond on his property, but he’s hoping to line this pond so that water is not lost. But ponds like his have become a refuge for protected species such as the San Francisco garter snake and the California red-legged frog. In order to maintain the pond and upgrade it, vegetation will need to be removed and that can negatively impact the species.

“We’re being told that in order to do this project that is being identified in the federal recovery plan for endangered salmon, that we have to do mitigation for the frog, which makes the price tag and the complexity and the timeline on these things go through the roof,” said Nelson.

“Farmers created habitat for a species that was pushed out of places that were developed and now it is difficult to maintain these features on the landscape because of the presence of the very thing they helped to save – that’s a catch 22,” she said.

It is costing about a half a million dollars for each pond, said Nelson, and a huge amount of that is permitting expenses, biological surveys and biological monitors.

Doniga Markegard, of Markegard Family Grass-Fed which raises grass-fed beef and lamb, chicken and pasture-raised pork, has experienced this same problem. In trying to find ways to store water to adapt quickly to drought emergencies, they’ve been slowed by an expensive bureaucratic process, she said. They are tenant farmers on ranchland her husband has managed since 1987 and 2014 was the first time their water sources ran dry – both springs and stock ponds for their animals and the spring water that supplies their home and family of six.

“If we just had to grow grass and move cattle around it would be easy,” she said. “But the people aspect can be challenging and time consuming. We don’t always have time to sit in all-day meetings and do a bunch of emails. We make our living ranching.”

A lack of rainfall in the last few years has meant slower-growing grass and slower-growing cattle. “We really need the ability as farmers and ranchers to adapt to climate change and to be able to plan for the extremes,” she said. “Unfortunately often times it is things that we would normally plan for, like water storage, we are unable to because of policies or regulations or things are just slow.”

Despite these difficulties, Nelson said, farmers and ranchers in the area continue to innovate and try new ways to manage their land with the least impact on resources like water, because drought here hits close to home.

For people who live on the bay side of San Mateo County where large projects supply water from the mountains, the drought feels like an intellectual conversation, said Nelson. “But here, people know when the water is low and they’re watching it and they’re panicked about it.”

Water Deeply thanks the Silicon Valley Community Foundation for their support in making this reporting series possible.

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This version corrects a previous version that said well water ran dry at the ranch the Markegard’s manage, but it was pond and spring water.

Silicon Valley Community Foundation advances innovative philanthropic solutions to challenging problems such as the California drought.

About the Author

Tara Lohan - Tara Lohan is managing editor of Water Deeply. She’s been writing about the confluence of water and energy issues for more than 15 years