

**BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING**

September 21, 2017

Correspondence and media coverage of interest between July 25, 2017 and September 11, 2017

Correspondence

Date: September 15, 2017
From: Tom Francis, BAWSCA Water Resources Manager
To: BAWSCA Board of Directors
Subject: Bay Area Regional Reliability (BARR) Update

Date: September 12, 2017
From: Nicole Sandkulla, BAWSCA CEO/General Manager
To: Ms. Heather Shannon, DWR, Division of Integrated Regional Water Management
Subject: Proposition 1 Sustainable Groundwater Planning Grant for the East Bay Plain Groundwater Subbasin

Date: August 2, 2017
From: Harlan Kelly, Jr., SFPUC General Manager
To: All SFPUC Staff
Subject: Resignation of Local & Regional Water Operations Manager, David Briggs

Date: August 9, 2017
From: Nicole Sandkulla, BAWSCA CEO/General Manager
To: Bureau of Reclamation Financial Assistance Support Section
Subject: Support for the City of Hayward's WaterSMART Title XVI Water Recycling Grant Application

Date: August 9, 2017
From: Nicole Sandkulla, BAWSCA CEO/General Manager
To: Mr. Phill Scott, District Manager West Bay Sanitary District
Subject: Support for the West Bay Sanitary District's WaterSMART Title XVI Water Recycling Grant Application

Media Coverage

Post Drought:

Date: August 17, 2017
Source: Total Landscape Care
Article: A look at post-drought California and water conservation

Water Supply:

Date: September 11, 2017
Source: The Union Democrat
Article: Tuolumne River Film Festival stands up for a watershed

Date: September 11, 2017
Source: Mercury News
Article: 'Winter is coming': What do climate scientists predict for California?

Water Supply, cont'd.:

Date: September 11, 2017
Source: Water Deeply
Article: California Must Prepare Now for a Drier Future

Date: September 6, 2017
Source: Water World
Article: Reclamation announces \$1.5 million in Water Use Efficiency grants

Date: September 6, 2017
Source: Capitol Weekly
Article: Water: Setting the sights on Sites

Date: August 23, 2017
Source: Daily Democrat
Article: New water storage projects compete for bond funds

Date: August 23, 2017
Source: Modesto Bee
Article: Groundwater recharge – a solution for both farmers and fish

Date: August 21, 2017
Source: Water Deeply
Article: Study: Heavy Storms May Be Enough to Recharge California Groundwater

Date: August 15, 2017
Source: Mercury News
Article: New dams coming to California? A dozen projects seek \$2.7 billion in state funding

Date: August 14, 2017
Source: Mercury News
Article: East Bay reservoir expansion plan wins support of environmental groups

Date: August 11, 2017
Source: Water Deeply
Article: Why Markets Aren't Easy Solution for California's Groundwater Problems

Water Policy:

Date: August 27, 2017
Source: California Water Blog
Article: We hold our convenient truths to be self-evident – Dangerous ideas in California water

Date: August 8, 2017
Source: Maven's Notebook
Article: State Water Board Announces New Executive Director

Date: July 25, 2017
Source: Healdsburg Tribune
Article: Water Agency's Davis appointed new state water resources chief

Water Infrastructure:

- Date: September 8, 2017
Source: The Press Democrat
Article: Audit: US misuses taxpayer cash for California water project
- Date: September 8, 2017
Source: Mercury News
Article: Opinion: Delta twin tunnel 'WaterFix' bad for Santa Clara County, won't fix anything
- Date: August 31, 2017
Source: Sacramento Bee
Article: Democrats seek \$4 billion bond for water, flood control, parks
- Date: August 25, 3017
Source: CBS
Article: California Flood Plan Shifting To Giving Rivers More Room
- Date: August 21, 2017
Source: Sacramento Bee
Article: Dozens are suing to block Delta tunnels. Will it matter?
- Date: August 18, 2017
Source: Sacramento Bee
Article: Sacramento County sues to block Delta tunnels – and it's not alone
- Date: August 17, 2017
Source: Sacramento Bee
Article: Delta tunnels project needs water agencies to pay for it. Why some are hesitating
- Date: August 17, 2017
Source: Courthouse News Service
Article: Sacramento County Starts Avalanche of Lawsuits Against Delta Tunnels Plan
- Date: August 10, 2017
Source: Sacramento Bee
Article: Southern Californians, here's how much your water bills could rise to pay for Delta tunnels

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TO: BAWSCA Board of Directors
FROM: Tom Francis, Water Resources Manager
DATE: September 15, 2017
SUBJECT: Bay Area Regional Reliability (BARR) Update

This memorandum provides an update regarding the efforts associated with the Bay Area Regional Reliability (BARR) effort. Materials referenced in the memorandum are provided as attachments.

On September 28, 2015, eight utilities in the San Francisco Bay Area signed a Memorandum of Agreement (MOA) officially launching the Bay Area Regional Reliability (BARR) partnership. The partnership aims to bolster water supply reliability in the region. Along with BAWSCA, the other utilities involved in this collaborative effort are the Alameda County Flood Control and Water Conservation District - Zone 7 (Zone 7), Alameda County Water District (ACWD), Contra Costa Water District (CCWD), East Bay Municipal Utility District (EBMUD), Marin Municipal Water District (MMWD), the San Francisco Public Utilities Commission (SFPUC), and Santa Clara Valley Water District (SCVWD).

Since entering into the MOA, the BARR partner agencies have been working together to identify regional solutions for improving water supply reliability for the more than 6 million residents and thousands of businesses and industries in the Bay Area. The most recent work was documented in a Drought Contingency Plan (DCP), an effort partially funded under a grant from the U.S. Bureau of Reclamation (Bureau). BARR was recently highlighted in the Water Research Foundation's *Advances in Water Research*¹ magazine. A copy of the article "Strength in Numbers, How the Bay Area is Building Resiliency" is attached. In addition, BARR has just been notified that the Bureau anticipates awarding a \$400,000 grant for the BARR partner agencies to develop a "Bay Area Regional Water Market (Exchange/Transfer) Program".

BARR DCP

The BARR partner agencies contracted with consulting firm Brown and Caldwell to develop a DCP with the goal of presenting options for responding to drought and other emergencies, along with more permanent mitigation actions, in order to advance a joint approach to regional reliability. Through this effort, BARR partners are exploring actions that can be implemented relatively quickly, as well as longer-term actions that require more time to plan and complete. The DCP process began with the development of two technical memos, drafted in August 2016 and March 2017. The technical memos were used as the basis for the DCP, a draft of which was released in mid-June 2017 for public review. The DCP provides both background information and recommendations for the future. The Bureau provided comments to the DCP in August of 2017. Those comments are now being addressed and the DCP will be finalized shortly.

Background information provided in the DCP includes details on the BARR partner agencies' service areas and existing facilities; previous drought actions and lessons learned; a vulnerability assessment addressing drought, climate change, and other factors that could impact water supplies; and a brief overview of potential methods for reducing vulnerability in the region. The DCP outlines various

¹ Greenberg, Alyse, "Strength in Numbers: How the Bay Area is Building Regional Resiliency", *Advances in Water Research*, Pgs. 9 through 15, July-September, 2017.

regional drought mitigation and response actions for the BARR partner agencies to consider in order to enhance water supply reliability. Potential projects include interties, such as one connecting ACWD's Newark Brackish Groundwater Desalination Facility with SFPUC's Bay Division Pipeline; and storage projects, such as a second expansion of the Los Vaqueros Reservoir. Other areas of collaboration could include water supply diversification, such as potable reuse feasibility studies and the development of a regional desalination plant; and operations projects, such as establishing a Bay Area Regional Water Market for water exchanges and transfers. The DCP also includes an operational and administrative framework to aid in the implementation of these measures, which identifies roles, responsibilities, and procedures necessary to conduct drought monitoring, initiate response actions, initiate mitigation actions, and update the DCP.

Keeping the Public Informed / News Articles and Journal Stories

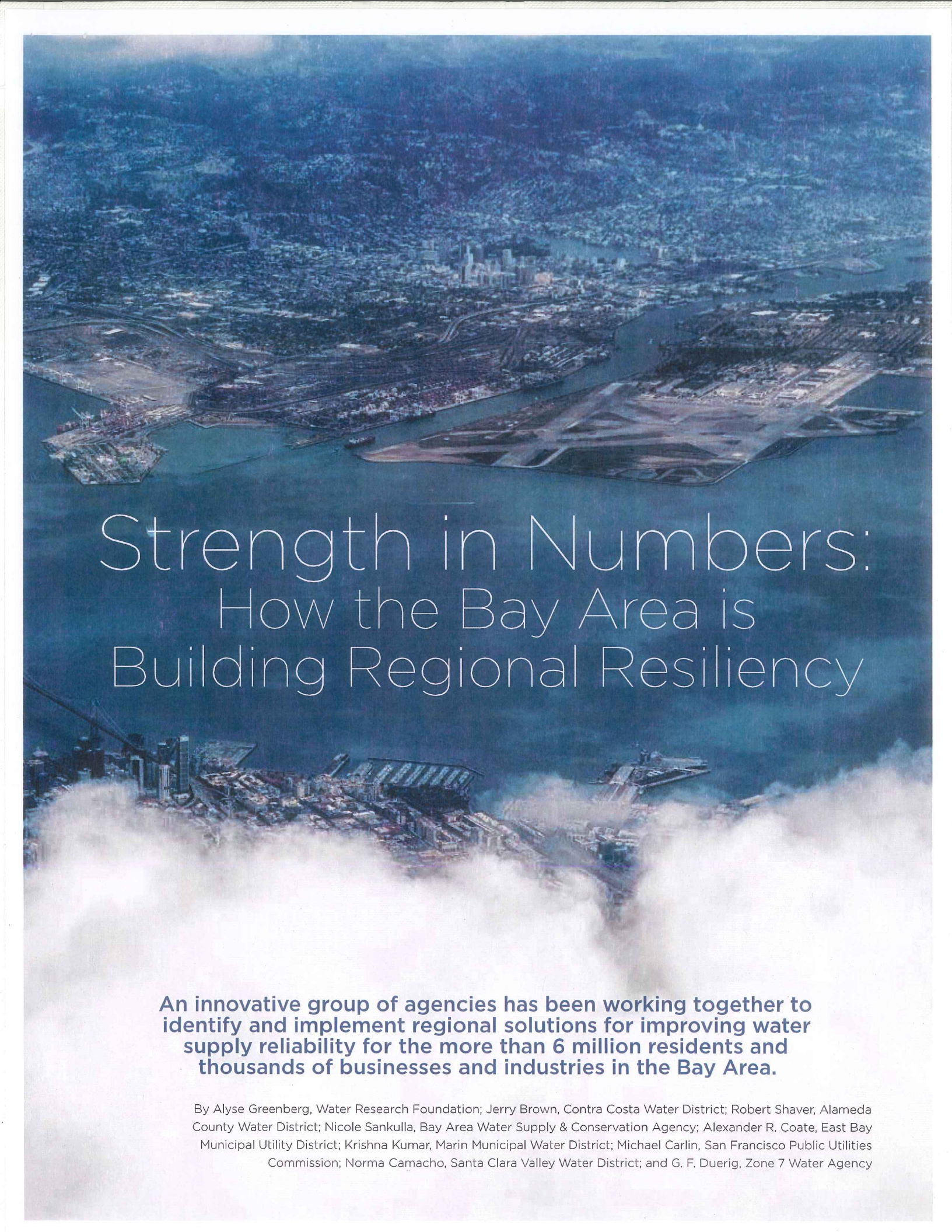
The BARR partners are keeping the public informed about the BARR efforts by holding workshops and public meetings throughout the region. Those meetings took place in Summer 2017, and were held in the East Bay (at EBMUD and CCWD offices), as well as in the South Bay (at SCVWD offices). In addition, technical stories on the BARR effort have been placed in journals. BARR was recently highlighted in the Water Research Foundation's Advances in Water Research magazine.

Recent BARR Grant Funding Success

In the Spring of 2017, the BARR partner agencies, through EBMUD as the applicant on behalf of the partners, submitted a WaterSMART Water Marketing Strategy Grant application to the Bureau, requesting \$400,000 in funding to complete a "Bay Area Regional Water Market (Exchange/Transfer) Program". In early September, the Bureau notified the BARR partner agencies that the application was among those receiving the highest ratings. The Bureau anticipates awarding Federal funds in the amount of the requested \$400,000 following the successful completion of the required funding agreement. Attachment B is the letter received from the Bureau providing additional details of their review of the application and the proposed funding award.

Attachments:

1. Attachment A - "Strength in Numbers: How the Bay Area is Building Resiliency"
2. Attachment B - Correspondence from the U.S. Dept. of Interior, Bureau of Reclamation, Sept. 5, 2017

An aerial photograph of the San Francisco Bay Area, showing the city skyline, the Golden Gate Bridge, and the surrounding water. The image is used as a background for the text.

Strength in Numbers: How the Bay Area is Building Regional Resiliency

An innovative group of agencies has been working together to identify and implement regional solutions for improving water supply reliability for the more than 6 million residents and thousands of businesses and industries in the Bay Area.

By Alyse Greenberg, Water Research Foundation; Jerry Brown, Contra Costa Water District; Robert Shaver, Alameda County Water District; Nicole Sankulla, Bay Area Water Supply & Conservation Agency; Alexander R. Coate, East Bay Municipal Utility District; Krishna Kumar, Marin Municipal Water District; Michael Carlin, San Francisco Public Utilities Commission; Norma Camacho, Santa Clara Valley Water District; and G. F. Duerig, Zone 7 Water Agency

On September 28, 2015, eight utilities in the San Francisco Bay Area of Northern California signed a Memorandum of Agreement (MOA) officially launching the Bay Area Regional Reliability (BARR) partnership.

The partnership aims to bolster water supply reliability in the region. The utilities involved in this collaborative effort are the Alameda County Flood Control and Water Conservation District - Zone 7 (Zone 7), Alameda County Water District (ACWD), the Bay Area Water Supply and Conservation Agency (BAWSCA), Contra Costa Water District (CCWD), East Bay Municipal Utility District (EBMUD), Marin Municipal Water District (MMWD), the San Francisco Public Utilities Commission (SFPUC), and Santa Clara Valley Water District (SCVWD).

How BARR Began

SINCE THE EARLY 2000S, LONG before the BARR partnership was formalized, the senior managers overseeing operations and maintenance at CCWD, EBMUD, SFPUC, and SCVWD regularly met for breakfast and discussed concerns of common interest. At one of these so-called “Breakfast Bunch” gatherings, one manager mentioned an upcoming emergency response exercise being planned. The exercise would simulate a large earthquake on a Bay Area fault, and the four agencies decided to participate in this exercise together.

Seeing the benefits of the breakfast meetings, which still continue today, and of partnering on that emergency response exercise, the utilities decided to explore more official collaboration options to ensure their partnership would be sustainable into the future. In 2007, they began working with the Water Research Foundation (WRF) and consulting firm Malcolm Pirnie on the Tailored Collaboration project, *Bay Area Collaborative: Model for Regional Utility Cooperation* (Means et al. 2010). The research looked at case studies of regional collaboration efforts, held workshops to identify key areas for collaboration, and developed a model for collaboration between CCWD, EBMUD, SFPUC, and SCVWD. Goals, opportunities and approaches for collaboration, and action plans were developed for asset management, emergency preparedness, water quality, and workforce development.

Using the 2010 research project as a foundation, the four initial partners reached out to other Bay Area utilities, inviting them to participate in a regional effort. ACWD, BAWSCA, MMWD, and Zone 7 chose to get involved, allowing the utilities to focus on a broader coverage area and larger population. With the addition of these

utilities, the development of guiding principles, and the signing of the MOA in 2015, the Bay Area Regional Reliability partnership was formed.

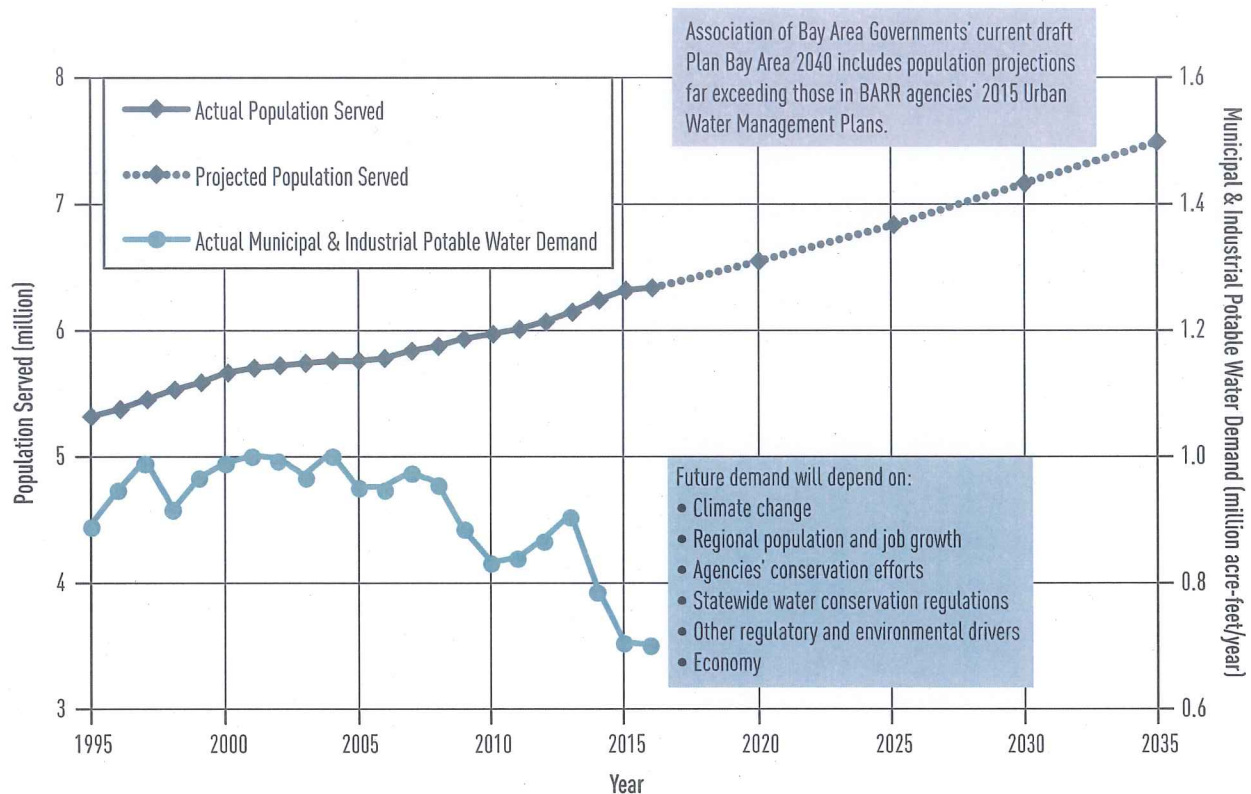
“Historically, we’ve all operated pretty much independently,” stated Jerry Brown, General Manager of the Contra Costa Water District. “We think that in order to continue to provide the service to our customers that they expect, we’re going to have to operate more collaboratively.”

Benefits of Collaboration

THE BARR AGENCIES CHOSE TO work together because they recognized the many potential advantages of taking a regional approach to water supply concerns. The benefits expected from the BARR partnership include:

- Enhancing water supply reliability
- Bolstering emergency preparedness
- Addressing climate resiliency needs
- Leveraging existing infrastructure investments
- Facilitating the transfer of water supplies during critical periods of drought or following natural disasters (Brown and Caldwell 2017a)





Source: Brown and Caldwell 2017b. Used with permission.

Figure 1. BARR agencies' collective water demand and population growth

In addition, a cooperative approach can help address specific risks to water supplies (Figure 1), such as drought, climate change impacts (e.g., reduced snowpack, changes in the timing of snow melt), infrastructure vulnerability (e.g., aging assets, earthquake damage), potential changes in water rights and other regulations, and increasing water demand. By entering into regional partnerships, utilities can also leverage resources, including human and financial capital; reduce duplication of effort; increase their knowledge base; and enhance relationships and trust.

Moving Forward

THE BARR AGENCIES CONTRACTED with consulting firm Brown and Caldwell to develop a drought contingency plan (DCP) with the goal of presenting options for responding

to drought and other emergencies, along with more permanent mitigation actions, in order to advance a joint approach to regional reliability. Through this effort, BARR partners are

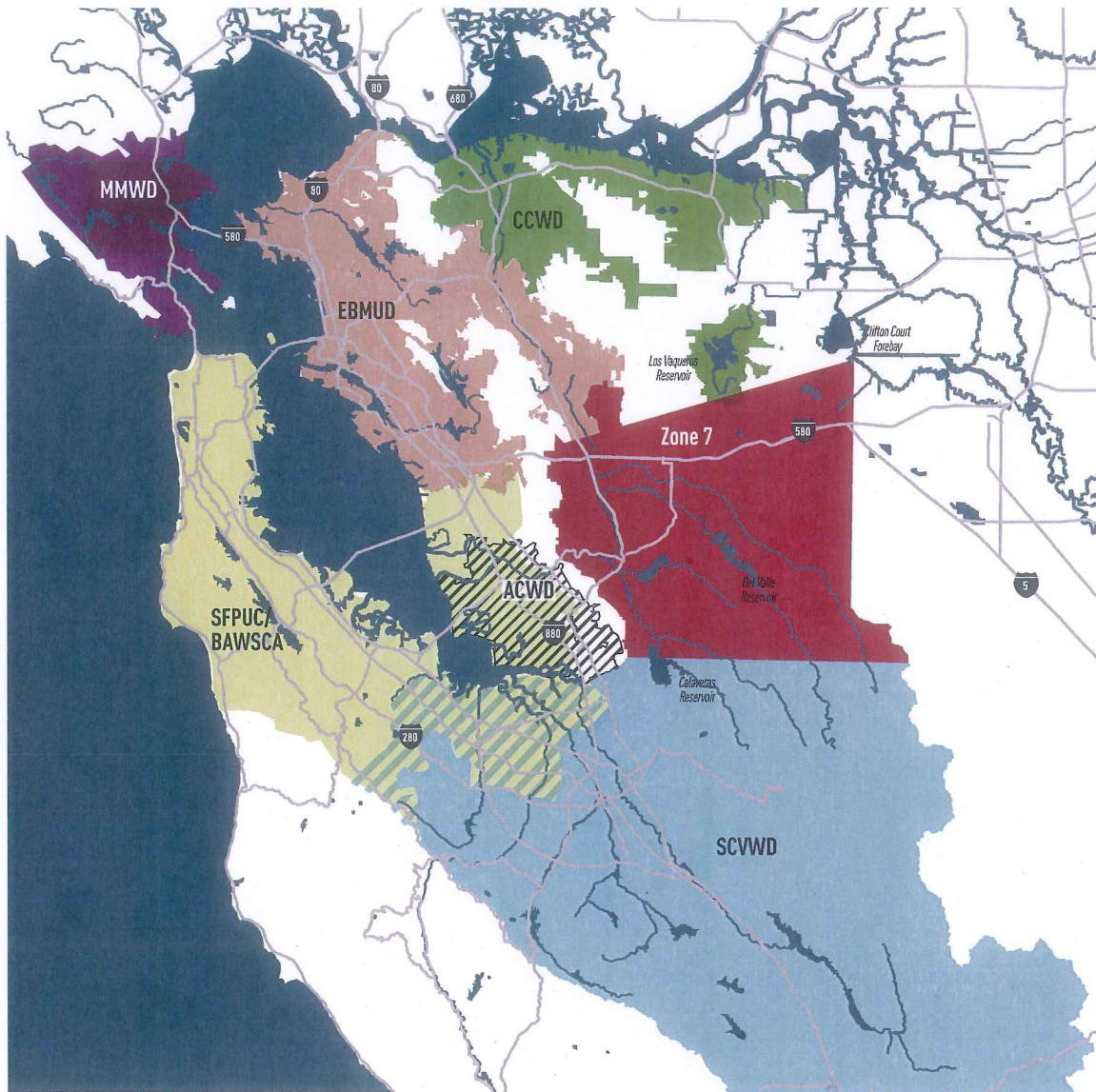
August 2016 (Guillen et al. 2016) and March 2017 (Mackey et al. 2017). The technical memos were then used as the basis for the DCP, a draft of which was released in mid-June 2017

Characteristics of successful collaborations include leaders who act as champions and a willingness to dedicate resources to the partnership.

exploring actions that can be implemented relatively quickly, as well as longer-term actions that require more time to plan and complete. The DCP process began with the development of two technical memos, drafted in

for public review (Brown and Caldwell 2017b). The DCP provides both background information and recommendations for the future.

The background information includes details on the utilities' service



Source: Brown and Caldwell 2017b

Figure 2. BARR service areas

areas (Figure 2) and existing facilities; previous drought actions and lessons learned; a vulnerability assessment addressing drought, climate change, and other factors that could impact water supplies; and a brief overview of potential methods for reducing vulnerability in the region. The DCP then goes on to outline various regional drought mitigation and response actions for the BARR agencies to consider in order to enhance water supply reliability. Potential projects

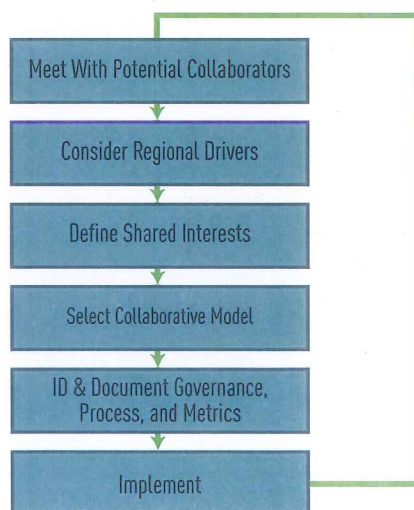
include interties, such as one connecting ACWD’s Newark Brackish Groundwater Desalination Facility with SFPUC’s Bay Division Pipeline; and storage projects, such as a second expansion of the Los Vaqueros Reservoir. Other areas of collaboration could include water supply diversification, such as potable reuse feasibility studies and the development of a regional desalination plant; and operations projects, such as establishing a Bay Area Regional Water Market for

water exchanges and transfers. The DCP also includes an operational and administrative framework to aid in the implementation of these measures, which identifies roles, responsibilities, and procedures necessary to conduct drought monitoring, initiate response actions, initiate mitigation actions, and update the DCP. The BARR partners are keeping stakeholders informed about the DCP by holding a public workshop and public meetings and issuing press releases.

The DCP also identifies potential federal and state funding sources for the BARR partners to pursue, such as California's Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1). Proposition 1 authorizes \$7.545 billion in general obligation bonds to fund ecosystem and watershed protection and restoration work, water supply infrastructure projects, and drinking water protection efforts. The State Water Resources Control Board administers the funds in five programs: drinking water, groundwater sustainability, small community wastewater, stormwater, and water recycling.

Collaborating in Your Region

FOR UTILITIES CONSIDERING regional cooperative efforts, there are many things to keep in mind. The success of the BARR partnership thus far shows that the guidance in WRF's 2010 Tailored Collaboration project is still applicable. Means et al. 2010 outlined a general process for developing collaborative efforts (shown in Figure 3) and key elements to consider.



Source: Means et al. 2010

Figure 3. Generalized process of collaboration

Responsibilities of the BARR Parties

1. Work cooperatively to develop the BARR Plan.
2. Commit staff time to work with staff from other Parties and the selected consultant in conducting the BARR Plan.
3. Share relevant engineering, permitting, regulatory and operational information regarding its own facilities and permits with other Parties for the benefit of the BARR Plan preparation.
4. Provide access to facilities and operational data that may be needed for developing BARR Plan (such as intakes, aqueducts and pumping plants, treatment plants, interties, etc.). If needed, commit staff time to conduct necessary analysis of its own facilities, permits, operational data, procedures or requirements, or any other data needed for BARR Plan consideration and share the information with other Parties. Access to facilities will be consistent with, and will follow, the facility owner's standard safety and notification requirements.
5. Provide engineering oversight and review of BARR Plan work products.
6. Conduct general work that is needed to advance the BARR Plan development. These efforts may include State and Federal grant application and grant administration support, website update, and outreach.
7. Accept that, if one or more of the Parties choose to move forward individual projects and concepts also being evaluated as part of the BARR Plan, those individual projects and concepts are not subject to the terms of this Agreement.

Source: BARR 2015.

The first step in any collaboration is recognizing the opportunities for, and potential benefits of, partnerships. Once you have decided that collaborating would be worthwhile, potential partners must be identified and contacted to determine their interest in working together. A core team of collaborators would then be formed to consider the regional drivers and individual utility issues that have collaboration potential.

The next step is selecting a collaborative model. The three primary elements of a model are focus, formality, and finance (Means et al. 2010). Focus addresses the desired breadth of the collaboration and includes defining expectations, purpose, and measures of success. Establishing a common understanding of the purpose and expected outcomes of the collaboration helps ensure that the effort is sustainable and productive. Toward this end, the BARR agencies developed a set of guiding principles that outline the purpose and expectations of the cooperative effort. For example, the first principle outlines the scope of the partnership as

“the evaluation of near- and long-term joint water supply reliability projects including, but not limited to, use of capacity of existing facilities, changes to infrastructure including new interconnections, recycled water, water conservation, regional desalination, water transfers and exchanges, and other projects or institutional arrangements that encourage a regional approach to achieving water supply reliability in the Bay Area” (BARR 2014).

In order to succeed, partners must also agree on the level of formality of

the effort. Collaborations can range from informal idea-sharing meetings (such as the original “Breakfast Bunch” meetings), to formal agreements that outline goals, roles, and financial investments. The BARR MOA outlines the roles and responsibilities of each partner, as shown in the sidebar on the previous page, and establishes financial management guidelines. All of the BARR agencies agreed to commit staff time and financial resources

Regional utility partnerships can enhance water supply reliability and address specific risks to water supplies.

to the BARR efforts, share relevant engineering information with the group, provide access to facilities and data, and provide oversight of the BARR work. In addition, EBMUD was designated as the contracting entity, making it responsible for entering into contracts, and CCWD was designated as the lead on fundraising activities (BARR 2015).

The finance element of a collaboration defines the resources needed, such as staff time, supplies, and funding. By defining the level of financial investment early on in the effort, partners can avoid misunderstandings, better plan their budgets and staff time, and ensure they have the resources needed to carry out the effort. The BARR agencies each committed to have a representative participate in consultant selection, dedicate

staff time to the overall BARR effort, and contribute \$50,000 towards the full costs of the work.

Once the levels of focus, formality, and finance are defined, the process can be outlined and metrics generated to measure progress. Collaboration activities themselves would then be planned and implemented, with evaluation activities built in to ensure that goals, objectives, and expectations are being met.

Means et al. 2010 also outlined key characteristics of successful collaborations, including:

- Sensitivity to territory: water utilities each have their individual political, geographic, service area, and other contexts, and collaborations must respect those contexts.
- Trust
- Leaders who act as champions to ensure staff engages in the effort.
- Willingness to dedicate the necessary resources to ensure follow-through on commitments.
- A shared vision for the collaboration.
- Establishment of a decision-making/governance process and management of participant expectations.
- Cultivation of successors to the collaboration leaders and participants.
- Creation of a process to ensure the goals and objectives of the collaborative are met.
- Existence of formal or informal reporting to a “parent body.”

Lasting Change

LOOKING BACK ON THE formation of the BARR partnership and other cooperative activities, Jerry Brown said of the original WRF Tailored Collaboration project, “A lot of times,

these [projects] happen and then they get put on a shelf and nobody ever thinks about them. But in this situation, there's not only this BARR effort, but there's also a quarterly meeting among the operations managers of all the agencies, and emergency preparedness exercises that are now conducted on an annual basis with all the agencies. The work that [project] provided to us went a long way and continues to produce even today ... I think it demonstrates the value of the Tailored Collaboration process and what member agencies can actually get out of it—lasting change.”

References

- BARR (Bay Area Regional Reliability Partnership). 2014. *Guiding Principles for Bay Area Regional Reliability Partnership Development*. Accessed May 2017. www.bayareareliability.com/resources/guiding-principles/.
- BARR (Bay Area Regional Reliability Partnership). 2015. *Memorandum of Agreement*. Accessed May 2017. www.bayareareliability.com/barr-memorandum-of-agreement/.
- BROWN and Caldwell. 2017a. “Bay Area Regional Reliability.” Accessed May 2017. www.bayareareliability.com/.
- BROWN and Caldwell. 2017b. *Bay Area Regional Reliability Drought Contingency Plan (Draft)*. Walnut Creek, Calif.: Brown and Caldwell.
- GUILLEN, R., J. Gain, and S. Knott. 2016. *Draft Technical Memorandum 1: Bay Area Regional Water System, Drought Monitoring, and Vulnerability Assessment*. Walnut Creek, Calif.: Brown and Caldwell.
- MACKAY, E., R. Guillen, J. Gain, and J. Johns. 2017. *Draft Technical Memorandum 2: Drought Mitigation Action Plan*. Walnut Creek, Calif.: Brown and Caldwell.
- MEANS, E., S. Sriboonlue, and T. Anderson. 2010. *Bay Area Collaborative: Model for Regional Utility Cooperation*. Project #4157. Denver, Colo.: Water Research Foundation.

Managing Infrastructure Risk: The Consequence of Failure for Buried Assets (project #4451)

This report helps water supply agencies understand and manage the risks associated with their buried infrastructure. The approach casts buried asset management (BAM) within a risk management context to help utilities make better-informed decisions for justifying, prioritizing, and maximizing the value of their investments in buried infrastructure. BAM poses many challenges for water utilities, especially regarding obtaining adequate funding and developing risk-based priorities for expensive water main renewal programs. Challenges include developing a strong business case for large-scale pipe investments

within a utility's capital improvement program. It is also challenging to develop a strong business case for investing in costly BAM-related diagnostic efforts, such as condition assessment, or for justifying operations and maintenance programs, such as valve exercising and pressure management activities that are valuable approaches for managing buried assets and the risks they pose. Applying a risk management approach will help communities better recognize the full value of making sound investments in managing and renewing water utility buried infrastructure.

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United States Department of the Interior

BUREAU OF RECLAMATION

P.O. Box 25007

Denver, CO 80225-0007

IN REPLY REFER TO:

84-27814

1.3.11

SEP 05 2017

VIA ELECTRONIC MAIL

East Bay Municipal Utility District
Michael Tognolini
P.O. Box 24055, MS 407
Oakland, CA 94623-1055

Subject: Funding Opportunity Announcement (FOA) No. BOR-DO-17-F014 – WaterSMART: Water Marketing Strategy Grants for Fiscal Year (FY) 2017 – Application Review Status Your Application Titled, “Bay Area Regional Water Market (Exchange/Transfer) Program”

Dear Mr. Tognolini:

Thank you for submitting a WaterSMART Water Marketing Strategy Grant application. The Bureau of Reclamation is pleased to inform you that your application was among those receiving the highest ratings and is now being considered for award of a financial assistance agreement. Your application included a request for \$400,000 to complete your proposal titled, “Bay Area Regional Water Market (Exchange/Transfer) Program.” Reclamation anticipates awarding Federal funds in the amount of \$400,000 for your proposed project. At this time, we anticipate that your agreement will be completed in the first quarter of FY 2018 (i.e., October – December 2017).

Please note that this letter is not a final commitment of funding. A financial assistance agreement will not be executed and funds will not be awarded until further information about your project is developed and all statutory and regulatory requirements have been met as described in Section E.2.5 of the FOA. In addition, Reclamation must have sufficient evidence prior to award that non-Federal cost share will be available by the start of the project. The final funding amount may be adjusted if necessary.

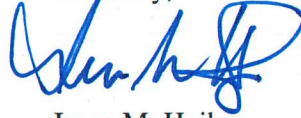
Please be advised that your application has been ranked, in part, based on your description of the benefits you expect to result from your project. Selection criteria placed an emphasis on the proposed water market’s benefits, stakeholder support for the project, your assumed ability to meet program requirements and the market’s nexus to Reclamation. Revisions to the scope of the project described in your application can be made only after Reclamation determines that revisions would be consistent with the selection process and that the expected benefits of the project would not be reduced.

Also, please be advised as stated in Section F.4 of the FOA, we intend to post copies of successful Water Marketing Strategy Grant applications as examples on Reclamation’s website. While this generally does not raise any issues, we find it prudent to provide successful grant applicants with an opportunity to redact any sensitive information from their proposals prior to posting them on our website. As a rule, we remove the SF-424s; however, if there are any other items you would like to request be redacted, please let me know by Friday, September 29, 2017. Should we not hear from you by this date we will assume that there are no objections to posting the full application.

Thank you for your interest and participation in the Water Marketing Strategy Grant program. If you have any questions about the program, please contact Ms. Avra Morgan, Water Marketing Strategy Grant Coordinator, at 303-445-2906 or aomorgan@usbr.gov.

The Grants Specialist that will be responsible for awarding and administering your agreement will contact you to finalize your award. If you have questions concerning the next steps in awarding this agreement, please contact me at 303-445-2025.

Sincerely,



Irene M. Hoiby
Grants Officer



September 12, 2017

Ms. Heather Shannon
Division of Integrated Regional Water Management
California Department of Water Resources
PO Box 942836
Sacramento, CA 94326-0001

Subject: Proposition 1 Sustainable Groundwater Planning Grant for the East Bay Plain Groundwater Subbasin

Dear Ms. Shannon:

This letter is to express support for the East Bay Municipal Utility District's (EBMUD) submittal of a funding assistance application under the Proposition 1 Sustainable Groundwater Planning Grant Program for development of a Groundwater Sustainability Plan (GSP) for the East Bay Plain Groundwater Subbasin (Basin No. 2-009.04). EBMUD will be working collaboratively with the City of Hayward to ensure sustainable management of this entire Subbasin.

The Bay Area Water Supply and Conservation Agency (BAWSCA) is a special district that provides regional water supply planning, water resource development, and water conservation program services to enhance the reliability of the 16 cities (including Hayward), 8 water districts, and 2 private water providers that serve water to over 1.78 million people and 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties. BAWSCA's creation was enabled by the California Legislature to protect the health, safety and economic well-being of the people, businesses and community organizations within its service area.

Recent drought conditions have highlighted the importance of protecting local groundwater resources. BAWSCA is pleased to see the City of Hayward, a BAWSCA member agency, and EBMUD, step up and agree to become Groundwater Sustainability Agencies, with responsibilities for ensuring long-term sustainable management of the groundwater resources in the East Bay Plain Subbasin. It is BAWSCA's understanding that EBMUD and the City of Hayward have agreed to partner on preparing a single GSP for the entire East Bay Plain Subbasin. BAWSCA has a key interest in groundwater management throughout the region and intends to support its member agencies serving as Groundwater Sustainability Agencies.

A grant award would significantly augment local funding for development of the GSP and help further the understanding of the region's groundwater resources. BAWSCA urges the Department of Water Resources to award funding for this effort in consideration of its importance to the City of Hayward, EBMUD, the Bay Area and the State.

Sincerely,

A handwritten signature in blue ink that reads "Nicole Sandkulla". The signature is fluid and cursive.

Nicole Sandkulla
CEO and General Manager

cc: Alex Ameri, City of Hayward
Michael Tognolini, EBMUD

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August 9, 2017

Bureau of Reclamation
Financial Assistance Support Section
Attn: Irene Hoiby
P.O. Box 25007
Denver, CO 80225

RE: Support for the City of Hayward's WaterSMART Title XVI Water Recycling Grant Application

Dear Ms. Hoiby:

This letter is to express support for the City of Hayward's submittal of an application for funding assistance under the Bureau of Reclamation WaterSMART Water Recycling Funding Opportunity No. BOR-DO-17-F028.

The Bay Area Water Supply and Conservation Agency (BAWSCA) is a special district that provides regional water supply planning, water resource development, and conservation program services to enhance the reliability of the 16 cities (including the City of Hayward), 8 water districts, and 2 private water providers that provide water to over 1.78 million people and 41,000 commercial, industrial and institutional accounts in Alameda, Santa Clara and San Mateo Counties. BAWSCA was created by the California Legislature to protect the health, safety, and economic well-being of the people, businesses, and community organizations within its service area.

Recent drought conditions have highlighted the importance of developing sustainable drought-proof water supplies. Construction of the Hayward Recycled Water Project (Project) will provide a locally sustainable alternative to drinking water for irrigation of parks, schools and landscaped areas around commercial and industrial properties and industrial uses such as cooling towers. This additional drought-proof water supply offsets the need for drinking water for irrigation, thus increasing the overall water supply reliability and reducing the risk of supply shortages during droughts.

BAWSCA strongly supports the City's efforts to beneficially reuse wastewater through the implementation of the Project. A grant award would significantly augment local financing. We urge the Bureau of Reclamation to fund the Project in consideration of its importance to the City of Hayward, the Bay Area, and the State as a whole.

Sincerely,

A handwritten signature in blue ink that reads "Nicole Sandkulla". The signature is fluid and cursive.

Nicole Sandkulla
CEO and General Manager

cc: Alex Ameri, City of Hayward

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August 9, 2017

Mr. Phil Scott
District Manager
West Bay Sanitary District
500 Laurel Street
Menlo Park, CA 94025

RE: Support for the West Bay Sanitary District's WaterSMART Title XVI Water Recycling Grant Application

Dear Mr. Scott:

This letter is to express support for the West Bay Sanitary District's (WBSD) submittal of an application for funding assistance under the Bureau of Reclamation WaterSMART Water Recycling Funding Opportunity No. BOR-DO-17-F028.

The Bay Area Water Supply and Conservation Agency (BAWSCA) is a special district that provides regional water supply planning, water resource development, and conservation program services to enhance the reliability of the 16 cities, 8 water districts, and 2 private water providers that provide water to over 1.78 million people and 41,000 commercial, industrial and institutional accounts in Alameda, Santa Clara and San Mateo Counties. BAWSCA was created by the California Legislature to protect the health, safety, and economic well-being of the people, businesses, and community organizations within its service area. The area of San Mateo County and Santa Clara County served by WBSD (e.g., the Cities of Menlo Park, Atherton, and Portola Valley, areas of the Cities of East Palo Alto and Woodside, and portions of unincorporated San Mateo County and Santa Clara County) is provided water service by various BAWSCA Member Agencies.

Recent drought conditions have highlighted the importance of developing sustainable drought-proof water supplies. Construction of the WBSD's Recycled Water Project – Sharon Heights (Project) would provide recycled water to the Sharon Heights Golf and Country Club and the Stanford Linear Accelerator Center. The Project would improve local water supply reliability by utilizing wastewater as a resource to provide a new, non-potable water supply to offset potable demands. A second benefit of this Project is reduced pumping and discharge of treated wastewater effluent to the San Francisco Bay.

BAWSCA strongly supports the WBSD's efforts to beneficially reuse wastewater through the implementation of the Project. A grant award would significantly augment local financing. We urge the Bureau of Reclamation to fund the Project in consideration of its importance to the region.

Sincerely,

A handwritten signature in blue ink that reads "Nicole Sandkulla".

Nicole Sandkulla
CEO / General Manager

cc: Michael Hurley, California Water Co.
Kamal Fallaha, East Palo Alto
Pam Lowe, Menlo Park
Julia Nussbaum, Stanford University

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A look at post-drought California and water conservation

Total Landscape Care | August 17, 2017 | Jill Odom

Earlier this year Gov. Jerry Brown declared that the years-long California drought was official over, but he said that “conservation must remain a way of life.”

Many cities and counties are taking that advice to heart. In Sacramento, the city council has voted to continue drought-time restrictions, including limiting sprinkler watering to two days a week and increasing fines for second violations to \$50.

“We want to develop a culture of long-term efficient water use in the city of Sacramento,” Bill Busath, Sacramento Department of Utilities Director, told CBS Sacramento.

There were several exemptions to the new ordinance including hand watering, smart controllers and drip irrigation systems, which all allow homeowners to water more often.

Meanwhile in other places in the state, agencies like Orange County Coastkeeper, the Chino Basin Water Conservation District in San Bernardino County and the Metropolitan Water District in Los Angeles County are all offering workshops and classes for homeowners on how to remove lawns despite there no longer being any rebates.

“We need to take responsibility for our water use,” Ray Hiemstra, associate director of programs for Orange County Coastkeeper, told the Los Angeles Daily News. “Like any other resource, we should be using it preciously. What we need to do is get into that new balance of dealing with the situation, and our easiest way to do that is through landscape.”

Orange County Coastkeeper offers a manual on how to create one of its SmartScapes, which is designed to conserve water, prevent runoff and create a habitat for urban wildlife.

The ironic thing is that the California drought may be the best thing that has happened to landscapes, which were previously over-watered.

A study conducted by the University of Utah researchers before the drought found that in Los Angeles the city uses 100 billion gallons of water in a year, and about 70 percent of that is dedicated to lawns.

“We very rarely found trees or lawns that were water-stressed,” Diane Pataki, coauthor of the study and professor of biology and urban planning at the University of Utah, told News Deeply. “Most landscapes in L.A. are over-watered. Plants were transpiring kind of the maximum amount that they physically could.”

The scientists conducted their research by spending years measuring the transpiration of trees and evapotranspiration of lawns in L.A.

Once they analyzed the data, they found that wealthier districts had twice the evapotranspiration of the poorer neighborhoods. This is due to a variety of factors, including larger sized lawns and more tree coverage.

One thing that the researchers did not expect to discover was the trees' ability to use much less water than grass thanks to their lower leaf surface area.

"I have been surprised that we can maintain the tree canopy of L.A. with relatively little water," Pataki told the University of Utah. "There's this assumption that we need abundant irrigation to support trees. We can drastically reduce water use and still maintain the tree canopy."

While Pataki sees many opportunities for water conservation, she warns that people shouldn't be so careless when removing lawns or shutting off their irrigation that they kill off the trees as well.

"The other thing our study showed is that if you add trees to lawns you actually save water," she told News Deeply. "Which is a little counterintuitive. But because trees reduce solar radiation to lawns so much, the lawn can receive 50 percent less water."

Pataki and her colleagues are currently studying what changes have occurred as a result of the turfgrass removal programs. They are in the early stages of determining what people have replaced their lawns with, before they can calculate any actual water savings.

She is uncertain if people will revert back to their over-watering ways and is curious if the drought has changed their sense of aesthetics.

"L.A. was not a gravelscape city, unlike some other Southwest cities like Phoenix," Pataki told News Deeply. "And now that these other types of landscapes are more common, is that changing people's visual preferences? I think that's going to be a big question going forward. And it turns out that doesn't cool things down very much. It really is shading that cools things down."

#

Tuolumne River Film Festival stands up for a watershed

The Union Democrat | September 11, 2017 | Guy McCarthy

Scott Schoettgen works at Dodge Ridge and Pinecrest to help pay the bills for pursuing his passions, which include whitewater expeditions in the Tuolumne River watershed and river conservation.

The Twain Harte resident is a former professional river guide and an avid defender of the Tuolumne watershed and its tributaries. To help, he put together a short film that will premier this weekend at the third annual Tuolumne River Film Festival in the Bay Area, which will benefit the nonprofit Tuolumne River Trust.

Footage in the film Schoettgen worked on includes whitewater rafting in the Cherry Creek watershed below Cherry Lake in the Tuolumne River watershed.

“We’re trying to tell the story of how losing the Stanislaus River years ago helped lead the river community to fight even harder to protect other rivers, including the Tuolumne,” Schoettgen said in a phone interview Monday.

“They wanted to build another dam right below Clavey Falls, which would have flooded part of the Clavey and upper Tuolumne,” Schoettgen said. “But people fought for the Tuolumne, and it got wild and scenic designation in 1984. The Stanislaus was such a monumental loss it helped lead to protections on other rivers around the world, including the Zambezi in Africa.”

Schoettgen said some of the footage in the film he worked on was made on the old Camp Nine stretch of the Stanislaus River during the summer of 2015, when low waters exposed relics as New Melones levels receded. It also exposed the Camp Nine rapids, where former river defenders Mark Dubois, Marty McDonnell and Jennifer Jennings took part in film work with Schoettgen.

The idea behind the Tuolumne River Film Festival is to benefit the Tuolumne River Trust, a separate entity, said festival founder and director Leah Rogers, of Menlo Park. The event this year includes film, live music, art and an ice cream social.

“What we are trying to encourage down here in the Bay Area is more awareness that our precious water is coming all the way from the Sierra, specifically northern Yosemite National Park,” said Rogers, who studied hydrogeology and earned a PhD in groundwater hydrology at Stanford University.

The Hetch Hetchy Regional Water System that impounds Tuolumne River waters in Yosemite serves about 3,500 Groveland Community Services District customers and 2.6 million people in the Bay Area, according to the San Francisco Public Utilities Commission.

“I’m a hydrologist. I’m a scientist who’s worried about water resources my whole career,” Rogers said.

In the 1970s, 1980s and 1990s, she spent time camping in Yosemite near Tuolumne Meadows, where the headwaters of the Tuolumne River come together, and she rafted the Tuolumne River below Hetch Hetchy.

“The Tuolumne River sustains us,” Rogers said. “When we are conserving our water, it helps us to love and honor that Tuolumne watershed. I want Bay Area people to respect that.”

The event this year will include work from the Wild and Scenic Film Festival. Work that focuses on the Tuolumne River itself includes Schoettgen’s work with Shifted Cinema, a 10-minute short, “Riveropolis” by Lessa Bouchard and the documentary “Martha Miller from Yosemite.” The longest film to be aired this year is 11 minutes.

A theme for this year’s festival is “experiencing wild water and nature directly,” and Schoettgen’s work is billed as one of the highlights, Rogers said.

Artist Linda Gass will display artwork. Her work includes a multicolor quilted tapestry called “Gold Rush Black.”

Musicians scheduled to perform include the Tuolumne River Ukulele Orchestra, the Raging Grannies, Chinese Melodrama and Bill and Rick Walker.

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'Winter is coming': What do climate scientists predict for California?

Mercury News | September 11, 2017 | Steve Scauzillo

After suffering more than a week under searing, desert-like heat, winter might be the furthest thing from the minds of most Californians.

However, to borrow a phrase from TV's "Game of Thrones," winter is coming.

The only question is whether the gods will allow a rerun of last winter which unexpectedly dumped record amounts of rain and snow throughout the state that filled reservoirs and kept skiers on the slopes through August.

Several climate experts, flummoxed by the failure of a widely predicted El Niño to make a dent in California's drought during the winter of 2015-16, are saying they are unsure what this winter will bring.

The National Oceanic and Atmospheric Administration says December-January-February in California will be a winter with equal chances of normal, below normal and above normal rain.

"That means they do not know. There is no strong signal," said Bill Patzert, the expert climatologist from NASA's Jet Propulsion Laboratory in La Cañada Flintridge, who incorrectly predicted tons of rain from the "Godzilla El Niño" for the 2015-2016 winter.

For this coming winter, however, with no El Niño in sight, he's making a not-so-bold prediction: It's going to be either wet or dry.

To be fair, Patzert's prediction was true for Northern California and Texas. If it weren't for a stubborn ridge of high pressure pushing the Jet Stream storms north and south of Los Angeles, he would have been accurate.

The fact that Los Angeles received 131 percent of average rainfall the following winter — Oct. 1, 2016 through April 30 — and the Sierra Nevada received record levels of snowpack is inexplicable, he said.

"Either we slip back into drought or we have a repeat of last winter," Patzert said.

Ken Clark, expert meteorologist with AccuWeather.com, who has been studying the state's weather patterns since 1996, took a stab at predicting upcoming winter weather.

"We are looking at more of a moderate winter with a decent amount of storms, perhaps better if you go farther north than south (in California). But a decent amount of precipitation," he said.

The region will not slip back into drought, Clark said.

When pushed, he leaned more toward wet, atmospheric river storms being the star of a Southern California winter.

Why the wetter guesstimate?

He's talked to the fisherman in Orange County and San Diego, who say warmer ocean temperatures have conjured up species of fish seen only in warmer, southern waters. Some have caught blue marlin off the Southern California coast, he said.

Warm Pacific waters adds vapor to a storm. And like gasoline added to a fire, this broadens the storm's size and intensity.

Andreas Prein, atmospheric scientist at the National Center for Atmospheric Research in Boulder, Colorado, released a study in 2015 that said the Southwest, and especially California, are seeing fewer storms and higher temperatures. Fewer storms point to a drier climate, i.e. more droughts, he said.

But even with fewer storms slashing the state, warmer ocean and air temperatures could make each storm stronger, packing stronger winds and rain, Prein's report said. Last winter, narrow bands of water extending from the Pacific Ocean drenched Southern California. These storms are what meteorologists call atmospheric river events.

Overall, his study is not good news for a state that needs rainfall and snowpack to quench the thirst of nearly 40 million people, not to mention irrigation for the farms which feed millions of people and support a \$47 billion industry.

But the state could get lucky.

"Instead of five atmospheric river events, you get only three, but those three are significant," Prein supposed during an interview. "As you saw last winter, the atmospheric rivers can have devastating effects on our infrastructure," he said, referring to estimates of \$1 billion in damage to levees, bridges, dams and roads.

"Only a few can take you from a dry year to a wet year," Prein said.

Of course, frequent rain storms and deep snowpack don't solve California's water storage problems. About 85 percent of the storm water in the Los Angeles River drains to the ocean. The San Gabriel and Santa Ana rivers have much greater water-capturing abilities, using rubber dams to pool water and let it sink into underground aquifers through soft, permeable river bottoms.

About the only thing meteorologists interviewed agree on was that the state is getting warmer. Climate change, involving the trapping of heat from the burning of fossil fuels, has raised the average winter temperature in the state 2.5 degrees Fahrenheit over the last 100 years, Patzert said.

"Heat waves are more intense. They last longer. That has been measured. We know that California winters are warmer and the snowpack comes later and leaves earlier. That is a trend, not a forecast," Patzert said.

Patzert and Prein agree that the warming of the oceans, the melting ice caps, the changes to the Jet Stream and the size of high pressure systems — all related to climate change — tell

more about California winters than El Niño or the opposite, La Niña, or the current neutral system that Patzert calls “La Nada.”

“All this has as big of an impact as to whether we have a La Niña or El Niño,” Patzert said. Prein said climate change adds another layer of complexity to long-range weather forecasting.

“We are disturbing the natural system. It is an additional variable,” he said.

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California Must Prepare Now for a Drier Future

Water Deeply | September 11, 2017 | Kirsten James

For most of California's history, water supply problems were solved simply by building new dams or ditches to move water from one place to another. Over time, the limitations of that approach have become increasingly clear. Now, after a five-year drought of historic proportions, our rivers and groundwater are overtapped, and a warmer climate demands that we fundamentally rethink our relationship to this resource. Fortunately, we can meet our water needs if we use it wisely.

Californians know how to craft policies and practices to work within nature's limits, and understand that sustainable communities are more livable and prosperous. For example, the important steps that state legislators have taken to curb climate change have helped clean up our air and have spurred innovation and job growth and saved money. This integrated approach to climate action is precisely what's required to protect our water supply.

In California, we have changed our energy use to mitigate the harms associated with climate change by ramping up production of clean and renewable electricity sources while pursuing smart efficiency upgrades. In other words, we are working on both supply and demand: creating alternatives to fossil fuels with solar and wind projects, putting a price on carbon and incentivizing efficiency from home appliances all the way up to the massive systems that heat and cool hotels, universities and warehouses.

We need the same integrated approach to water. California should lead the nation on responsible and resilient water use, just as it is leading on climate and clean energy. After all, water and climate are just two sides of the same coin. As the planet heats up, we can expect more extreme weather that includes longer and hotter droughts, and more precipitation falling as rain rather than snow. To avoid future shortages, we have to stretch our supplies further.

The legislature is currently considering a package of bills that would reduce water waste, increase efficiency and improve drought planning for vulnerable communities. These bills, which include Assembly Bill 1668 and Senate Bill 606, would help us prepare for the future we know is on the horizon.

Having just emerged from a record drought, we know how devastating a few dry years can be in a state that is unprepared to make the best use of limited water supplies. During the drought, residents across the state doubled down on conservation, slashing their water use by a quarter.

But we don't want a repeat of the emergency drought mandate. What California needs is to adopt the same two-pronged approach to water it has taken on energy: reduce demand and develop more sustainable supplies. That means embracing smart local solutions like stormwater capture and recycled water, while making sure all water, regardless of the source, is used efficiently.

Water efficiency is the fastest and most cost-effective way to ensure a reliable and affordable supply into the future. That is good news for businesses, since it creates more certainty and a level playing field.

That is why Ceres is joining so many water advocates in urging the state legislature to adopt policies that will make conservation and efficiency a way of life in California.

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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Reclamation announces \$1.5 million in Water Use Efficiency grants

Water World | September 6, 2017

SACRAMENTO, CA, SEPT 6, 2017 -- The Bureau of Reclamation announced it has selected two California projects to receive \$1.5 million total in CALFED Water Use Efficiency grants for fiscal year 2017. Combined with local cost-share contributions, these projects are expected to implement about \$6.9 million in water management improvements during the next 24 months.

The projects will conserve an estimated 733 acre-feet per year of water, contributing to the CALFED Bay-Delta Program objectives of improving ecosystem health, water supply reliability and water quality. California and federal agencies are partners in the 30-year program (2000-2030).

Reclamation made the selection through a competitive process, giving priority consideration to projects that address CALFED goals on a statewide basis. Here's a closer look at the two selected applicants and projects:

Santa Margarita Water District, \$750,000 The district will expand the existing 3A Water Reclamation Plant to provide up to 3,000 acre-feet per year of recycled water and energy savings. The project includes construction for expanding the existing facility. Annual water savings will be 390 acre-feet per year; lifetime water savings will be 19,500 acre-feet. Total project cost is \$5,080,000 with a federal cost-share of \$750,000.

The Lake Mission Viejo Association needed a sustainable alternative to fill its recreational lake. In partnership with the Santa Margarita Water District and Wigen Water Technologies, an Advanced Treated Water Facility was fast tracked.

Semitropic Water Storage District, \$750,000 The district will install a 1.5-mile long, 30 cubic feet per second, 36-inch diameter, bi-directional, intertie pipeline. The intertie pipeline will allow for the efficient conveyance of surface water supplies to spreading ground facilities located in Semitropic and the adjacent Shafter-Wasco Irrigation District. Annual water savings will be 343 acre-feet per year; lifetime water savings will be 17,000 acre-feet. Total project cost is \$1,850,000 with a federal cost-share of \$750,000.

About Reclamation

Reclamation is the largest wholesale water supplier in the United States, and the nation's second largest producer of hydroelectric power. Its facilities also provide substantial flood control, recreation, and fish and wildlife benefits. Visit our website at <https://www.usbr.gov> and follow us on Twitter @USBR.

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Water: Setting the sights on Sites

Capitol Weekly | September 6, 2017 | Daniel Maraccini

Sites Reservoir has been talked about for decades, but now that project officials — and backed by 70 major allies — have formally submitted an application for state bond money, the question arises: Will this \$5 billion project actually come to pass?

The proposed surface reservoir would be located in Colusa County, but is competing with 11 other applicants for part of a \$2.7 billion coffer of state money devoted to water storage projects. Sites wants \$1.6 billion in state money, the largest amount of any applicant, then will cover the rest through revenue from water agencies that benefit from the reservoir and even federal sources.

The state bond money originates from Proposition 1, a \$7.5 billion water-measure passed by voters in 2014 amidst California's historic drought.

Even if the state funds don't get approved, Sites can still be built, although on a reduced scale.

The 32 local water agencies that have already signed on for the project could provide enough money for a smaller reservoir, said Project General Manager Jim Watson.

"We don't need (the state) to give us money to fund the project, because we could build this project all on our own today, but that would come at the extent of providing water for the environment," Watson said. He said that if the reservoir is not granted any of the state funds, the authority board would then seek investments from other water groups.

The state bond money originates from Proposition 1, a \$7.5 billion water-measure passed by voters in 2014 amidst California's historic drought.

Sites, which would divert water from the Sacramento River and store as much as 1.8 million acre feet, is one of three applicants proposing a completely new surface reservoir. The added storage space could produce an average annual yield of 500,000 acre feet of water — enough to serve the needs of roughly 13 million Californians for one year.

To receive Proposition 1 funds, the 12 projects must show they provide environmental benefits to the Sacramento-San Joaquin River Delta or its accompanying tributaries.

According to the Sites Project Authority website, the facility is environmentally friendly, at least in part because it would be an "off-stream reservoir," meaning the project would not dam an existing river.

Instead, the project would take water from the nearby Sacramento River via a constructed pipe and, in the process, spare the migration flow of the area's salmon population.

But environmentalists suggest the benefits to the state would be marginal in comparison with the huge outlay in costs, and note the potential for environmental damage.

To receive Proposition 1 funds, the 12 projects must show they provide environmental benefits to the Sacramento-San Joaquin River Delta or its accompanying tributaries. The delta is the

heart of the state's water system, and these benefits may include ecosystem improvements, water quality improvements, flood control benefits, emergency response, or recreational purposes.

Watson said Sites would help the environment in part because it would aid the state's declining smelt population by moving water into the Yolo Bypass area. The additional water would give the area more nutrients, and as a result, provide the smelt with a more reliable food supply. According to the Sites Project Authority website, the project would also improve Pacific Flyway habitat for migratory birds.

"You're basically trying to use Sites as a regulating reservoir to bring water into the system to meet downstream demands." — Thad Bettner

Thad Bettner, the General Manager of the Glenn-Colusa Irrigation District, said the reservoir would also protect the Sacramento River salmon by providing them better access to cold water pools.

He said that during dry periods California could use Sites' water for downstream irrigation needs instead of completely relying on Lake Shasta's supply. Shasta could then better maintain the cold water temperatures that its salmon population needs during spawning and rearing season.

"You're basically trying to use Sites as a regulating reservoir to bring water into the system to meet downstream demands" he said. "Then you'd save a like amount water up in Shasta that would then be available for winter and spring (salmon) runs."

"Surface water reservoirs are not a panacea, but they are valuable for capturing water when it's available in the peak flows." — Dave Bolland

Environmental groups argue that Sites does not provide enough public benefits to justify use of taxpayer dollars or the potential harm the facility may do toward the environment.

Ron Stork, policy advocate for the Friends of the River Foundation, said that even if all the projects vying for Proposition 1 funding were completed, they still would not provide anywhere near enough water to meet California's growing demands.

"If these (water storage) projects, that essentially dam rivers or divert from rivers that have already been diverted and heavily tapped, are going to make a difference, then they will only make a difference in the one percent level," Stork said.

But, Dave Bolland, the director of State Regulatory Relations for the Association of California Water Agencies, said building surface reservoirs can be part of a broader approach to revamping California's water system.

Bolland said if these storage projects are accompanied by other changes to state water use, such as the construction of new conveyance systems or the passage of more efficient environmental laws, California will be better prepared for the potential effects of climate change, such as a smaller Sierra snowpack.

“Surface water reservoirs are not a panacea, but they are valuable for capturing water when it’s available in the peak flows” he said.

The California Water Commission, the group that determines which projects receive funding, is currently reviewing the 12 applicants.

The Commission will be measuring the cost of each project against the public benefits they would supposedly provide.

“It’s not a beauty pageant. It’s an investment program,” California Water Commission spokesman Chris Orrock told Water Deeply, a news site that covers water issues.

The California Water Commission will announce which of the 12 projects receive Proposition 1 funding between May and June next year.

Temperance Flat Dam, another proposed surface-level facility, would provide an estimated 1.26 million acre feet of additional water storage, applied for \$1.3 billion. The project would be located on the San Joaquin River about seven miles upstream from Fresno County’s Friant Dam. The area is in the heart of California’s agricultural empire, and the farming community has long pushed for the reservoir.

Other applicants, like the Los Vaqueros Reservoir Expansion Project, aim to adjust existing facilities.

Los Vaqueros, a nearly 20-year-old reservoir located in northern Contra Costa County, would have its earthen dam raised by 55 feet. The project would ultimately increase the facility’s storage capacity from 160,000 acre feet to 175,000 acre feet and provide enough annual water for 1.4 million people. The Contra Costa Water District, which oversaw the application, is seeking \$434 million.

Six different environmental groups have come out in support of the Los Vaqueros expansion, in part because the project would provide habitats for wildlife as well as storage water for local residents and farmers, according to The East Bay Times,

The California Water Commission will announce which of the 12 projects receive Proposition 1 funding between May and June next year.

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New water storage projects compete for bond funds

Daily Democrat | August 23, 2017 | Christine Souza

Now that a dozen applications have been submitted, the California Water Commission begins the process of evaluating water projects that could share in storage money California voters approved as part of the Proposition 1 water bond.

The bond, which passed in 2014, contains \$2.7 billion to pay for public benefits associated with water-storage projects. The 12 applications requested a total of \$5.8 billion from the bond, with total cost to build all the projects adding to more than \$13.1 billion.

Water Commission spokesman Chris Orrock said bond regulations require that “we have to fund multiple projects, be that two, three, 10. We cannot only fund one project. The goal is to get the best bang for taxpayers’ dollars in public benefits.”

With the applications now received, he said, “We’re going to be looking at all 12 of these and eventually, the commission will rank them one through however many are left.”

During a commission meeting last week, program manager Hoa Ly noted that about half of the applications are for surface storage, and half are groundwater projects.

Funding applications through what is known officially as the Water Storage Investment Program, or WSIP, included three large-scale surface projects identified by the Cal-Fed Bay-Delta Program Record of Decision:

- The Sites Project Authority sought \$1.66 billion to build Sites Reservoir, a large, off-stream storage project that would be constructed west of Maxwell in Colusa and Glenn counties;
- The San Joaquin Valley Water Infrastructure Authority requested \$1.33 billion for construction of Temperance Flat Dam and Reservoir in Fresno and Madera counties;
- The Contra Costa Water District sought \$434 million to expand the existing Los Vaqueros Reservoir, situated southwest of the Sacramento-San Joaquin Delta in Contra Costa County.

Sites Project Authority general manager Jim Watson said the authority has also released draft environmental documents for public and agency review, with public meetings expected in late September.

“Most of our members have contracts with the State Water Project and the Central Valley Project, so they all recognize that if we’re able to improve environmental conditions, that will also improve the ability for them to use their contract supplies,” Watson said. “Sites can produce additional water to improve reliability to those water

agencies, but it's that environmental component that can help improve the reliability of their current contract supplies."

In support of the Temperance Flat project, Mario Santoyo, executive director of the San Joaquin Valley Water Infrastructure Authority, said the authority intends to demonstrate that the project "has the greatest ecosystem benefits and has the greatest longevity in terms of value to the state."

"We are finding out that, not only is it a good investment right now, it's an even better investment as we move forward in time," Santoyo said. "It is the biggest project south of the delta with interconnections with the California Aqueduct, which can provide emergency service water to Southern California."

Jennifer Allen, director of public affairs for Contra Costa Water District, said CCWD and potential partners will continue additional analysis of the Los Vaqueros project, refine potential partner benefits and begin discussions about governance. Allen added that CCWD will also work with the U.S. Bureau of Reclamation to complete a draft federal feasibility study that will be released for public review in early 2018. A public comment period on a draft environmental impact study for the project ends Sept. 1.

"We see our application making a strong case for providing public benefits in ecosystem improvement and emergency response," Allen said. "We will continue working closely with partners to build a regional facility that provides significant benefits in any type of water year."

California Farm Bureau Federation Director of Water Resources Danny Merkley said the water bond has provided California with "a rare opportunity" to invest in large water-storage projects.

"We want to have the biggest impact on the water system that we can, and the bigger projects are going to do that," Merkley said.

Along with the requests for Sites, Temperance Flat and Los Vaqueros, three other applications would support either local or regional surface-water projects planned for San Benito, Placer and San Diego counties.

WSIP applications were also submitted for five conjunctive-use projects in various parts of the state — in which surface water could be stored underground in wet years for use in dry years — and one groundwater-storage project in Kern County.

The process of reviewing the applications will continue until February, when the commission will list the public-benefit ratios of the projects, Orrock said.

"If we change any of those (public-benefit ratios), the projects will have the ability to appeal that to the commission," he said. "Then, everything is put together in an ultimate

score that will go before the commission in May and June. That will be when the commission will rank them and make what we call a 'conditional maximum eligibility determination,' which is basically saying, 'This is the maximum amount of money that you are eligible to get.'"

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Groundwater recharge – a solution for both farmers and fish

Modesto Bee | August 23, 2017 | Peter Drekmeier and Zarine Kakalia

If every year were an average water year, the Tuolumne River could provide enough water to sustain a vibrant agricultural economy as well as a healthy river ecosystem. The problem is there are good years and bad years, and when a number of dry years line up we experience water shortages, often pitting economic interests against the environment.

This year we experienced the opposite, as torrential storms dumped near-record precipitation on the Tuolumne River watershed. The reservoirs filled quickly and, beginning in January, maximum allowable releases from Don Pedro Dam were required to prevent future flooding downstream.

More water in excess of flow requirements was released into the Tuolumne River than what the three water agencies operating on the Tuolumne – the Modesto and Turlock irrigation districts and the San Francisco Public Utilities Commission (SFPUC) – use in about two years.

While it's likely there will always be a debate over how much water should flow down the river to protect fish and wildlife and maintain water quality, few would argue that there wasn't a considerable excess of water this year.

So, what could be done to capture and store some of the excess water in wet years for future use during dry years?

The answer lies right under our feet.

Stanislaus County is blessed with excellent soils for groundwater recharge, and sits upon two large groundwater sub-basins – Modesto and Turlock, on either side of the river – with many times the storage capacity of Don Pedro Reservoir. While neither sub-basin is classified as over-drafted, there are concerns that pumping could increase as a result of higher in-stream flows required by the State Water Resources Control Board to help revive the San Francisco Bay-Delta and rivers that feed it. Over-pumping of the aquifer could reduce its reliability and possibly lead to land subsidence, threatening important infrastructure.

It would be prudent to explore potential new recharge opportunities to ensure the continued viability of groundwater pumping without causing harm to the aquifer. Such a program would help meet the Sustainable Groundwater Management Act (passed in 2014) requirement that levels of pumping and recharge be in balance.

The Stanislaus and Tuolumne Rivers Groundwater Basin Association and Turlock Groundwater Basin Association have done a good job establishing Groundwater Sustainability Agencies, as required by SGMA. The next step is to create Groundwater

Sustainability Plans. We are hopeful these plans will include active recharge programs during wet years, and look forward to engaging in the process.

The viability of recharge programs has already been demonstrated. For example, a 20-acre recharge basin managed by the Merced Irrigation District replenishes 25 acre-feet of groundwater per day. The State is eager to support similar projects, as funding for earthwork and infrastructure is available through the California Water Bond, which allocated \$2.7 billion for water storage projects.

Another option is for the Irrigation Districts to partner with the SFPUC, which might be interested in establishing a groundwater bank similar to its water bank in Don Pedro Reservoir.

With further study and implementation of groundwater recharge, we could capture more water during wet years, improve in-stream river flows every year, and continue to support a prosperous agricultural economy during dry years.

Peter Dreke is Policy Director and Zarine Kakalia a Summer Fellow with the Tuolumne River Trust.

#

Study: Heavy Storms May Be Enough to Recharge California Groundwater

A handful of storms each year could provide enough water to offset annual groundwater overdraft in California's Central Valley. But Tiffany Kocis of U.C. Davis explains that work is needed to capture and distribute that water.

Water Deeply | August 21, 2017 | Matt Weiser

Stormwater floods the 5-acre almond orchard of Modesto farmer Nick Blom in an experiment in 2016 to restore the drought-depleted aquifer in Modesto, Calif. If the water was not diverted to the Blom farm, the stormwater would flow into the Tuolumne River. Paul Kitagaki, The Sacramento Bee

California's Sustainable Groundwater Management Act, passed in 2014, requires some 250 groundwater basins throughout the state to halt the overdraft in their aquifers. The big question for everyone is: Where will the water come from to do that?

It could come from "high-magnitude flows" – flooding events, essentially, that occur from just a handful of storms every winter. Tiffany Kocis, a PhD student in hydrologic sciences at University of California, Davis, is the lead author of a new study that attempts to quantify these high flows. It's one of the first efforts to measure how much water might be available for groundwater recharge from these storm events, and the results are surprising.

Kocis and her coauthor, Helen Dahlke, an assistant professor of hydrology at U.C. Davis, estimate that 2.6 million acre-feet of water is available in an average year from these high-magnitude flows. They analyzed historical streamflow data to arrive at that number. So the estimate is based on real flows that have occurred. They also estimate this water is surplus to both existing water rights and to environmental flow requirements in the Sacramento-San Joaquin Delta.

Coincidentally, this amount of water also nearly equals the average annual groundwater overdraft in the state's Central Valley. This suggests these high-magnitude flows could be an important tool to recharge stressed aquifers. That is, if the water can be captured by groundwater banking projects, the flooding of farm fields and other means.

Within a few weeks, the results will be presented online in an interactive format at recharge.ucdavis.edu.

Water Deeply recently interviewed Kocis to learn more about her findings.

Water Deeply: What's the most important result of your study?

Tiffany Kocis: California has tons of water, but it's all allocated and appropriated. We were looking for a potential source of unmanaged water that we could utilize for groundwater banking. What we came across were these really high-magnitude flows that often aren't captured because it's during the winter. These flows are often really high and so they're hard to utilize. And they occur early enough that the reservoirs need

to be emptied for flood storage. So a lot of this water, we hypothesize, is flowing out to the ocean.

Some people say a lot of this is “wasted” to the ocean. We wanted to look at whether or not we could actually utilize this water. Was it actually available? And how much is there?

We found there was quite a bit of water. We report that in an average year, there are high-magnitude flows of approximately 3.2 cubic kilometers of flow (2.6 million acre-feet). That’s enough to sort of offset our average annual groundwater overdraft.

Part of our findings that are also important is how quickly these flows occur. These are storms that last a few days. We don’t get really high flows every single year. But when we do get them, we get a lot.

I think it becomes a management question from here.

Water Deeply: That’s a lot of water. Did this result surprise you?

Kocis: Yes and no. I suppose I was surprised by the results in that it’s fairly close to what we see in groundwater overdraft. But having lived here for a few years now and kind of experienced the winters and checking out the Yolo Bypass when it floods, it’s not wholly unexpected anymore for me. It’s incredible to me the volume of water that you see with these high flows.

I think it is a potential part of the solution. I wouldn’t say it’s outright going to solve everything about it. But I think it’s something that really needs to be explored and considered in the future of California water. It’s one thing to look at it from a research perspective, and another thing to get people to agree that it’s available and actually want to use it. That’s why I really stress that I feel like it’s a management issue.

Water Deeply: A report this year from the state Department of Water Resources found there was very little water available for recharge. Why are your results so different?

Kocis: The biggest thing is that the estimates from the DWR report are made from a computer model. You can only rely so much on the accuracy of model data: It doesn’t really capture data at a scale that we’re looking at. Their model looks at monthly data. Our underlying data set is daily. And our results are not based on modeling. It’s all based on historical streamflow data. Nothing has been altered.

Also, DWR is required to respect water rights data. But we feel there’s a lot less water actually diverted than the face value of water rights allow. Particularly during the winter, I would say people are underutilizing their water rights.

Water Deeply: What are these high-magnitude flows, exactly? And are they truly surplus to the needs of the environment?

Kocis: Basically these are times when the Delta is considered in true excess, where basically it's meeting all the environmental requirements and all the needs of the Central Valley Project and State Water Project. So it's kind of considering both water rights and environmental concerns in the Delta. I was surprised when I compared the data. It wasn't just, "Oh, it's a little bit over this amount." It's a lot of water passing into the Delta during these times.

But even if you cut it in half – even if you cut out 1.5 million acre-feet of water for the environment, you're still left with 1 million acre-feet for recharge. And this may be only part of the solution to groundwater overdraft, so you might not need to utilize the whole thing.

It has been shown these really high flows are critically important for ecosystem function. But a couple of studies have shown it's really only the first one or two storm events that really drive these processes of sediment transport and habitat formation and channel scouring. So a potential management solution for this is to say, let's just skip the first two storm events, and after that you can start diverting onto your farms for groundwater banking. But you have to let the first two storms go by.

We're trying to say, hey, this is available. You could potentially use this. But obviously we need to consider a whole host of other factors. But we don't also have to pretend like this water doesn't exist.

Water Deeply: How much do atmospheric rivers drive these high-magnitude flows?

Kocis: The vast majority of these flood events we get in winter are from atmospheric river events. California winter storms tend to be that way. They are these really intense, short-duration storms. You get these intense rain storms in relatively localized areas where you end up with tons of flooding.

A good way to set this up as a management question is to ask where we expect these storms to strike. We need to have plans in place to say this is who's going to be diverting water where. If there could be some collaborative decision making on this front, these flows could be utilized.

California has a relatively predictable, intense storm pattern. You get a little bit of warning that it's going to happen. We know that it's about to come. So I think that having a plan in place could really go a long way to making this work as a groundwater banking solution.

Water Deeply: Do we have the ability to capture and distribute these flows? Are there canals and floodways in place to handle it?

Kocis: As the system exists currently, it could not handle moving all of these flows. It currently is lacking in capacity to do these things. We could do a part of them, but it definitely could not take all the flows all at once.

A potential solution is reoperating reservoirs. These things operate under regulations and there's very little space in the current system for saying "could we maybe work this differently for the next month." There's no flexibility in the system right now to work with these high-magnitude flows we get early in the season to push groundwater banking efforts.

I don't think there is a future in which California doesn't invest money improving that. I think it's an inevitability that California infrastructure will be changed to deal with things like this, because we need the water.

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New dams coming to California? A dozen projects seek \$2.7 billion in state funding

Mercury News | August 15, 2017 | Paul Rogers

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During the drought, Californians often asked why the state wasn't building more reservoirs. On Tuesday, the state finally began taking a major step toward that goal, unveiling a list of 12 huge new water projects — from massive new dams in the north to expanded groundwater banks in the south — that will compete for \$2.7 billion in state bond funding for new water storage projects.

The money comes from Proposition 1, a \$7.5 billion water bond overwhelmingly passed by voters in November 2014 during the depths of the state's historic 2011-2016 drought.

Monday was the deadline for water agencies to submit applications for storage projects to the California Water Commission, an agency in Sacramento run by a nine-member board appointed by Gov. Jerry Brown.

The commission will decide by June 2018 which projects receive bond funding, as well as how much, if any, each will receive, after rating them on their public benefits.

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"We're excited about the projects that have applied," said Chris Orrock, a spokesman for the commission. "They are providing benefits to the people of California, and that's what this program is aimed at funding."

As expected, there is more demand than money. All 12 projects would cost roughly \$13.1 billion to construct — five times as much money as is available under the bond. That means some won't get built, and others will need to find the bulk of their funding from federal or local sources — which could include raising water rates or taxes, which local voters may or may not approve.

The list of applicants includes many ideas that have been around for years. Among them:

Sites Reservoir: A proposed \$5 billion reservoir in Colusa County, roughly 100 miles north of Napa, the reservoir would be built "off stream" in a valley and would divert water from the Sacramento River, holding 1.8 million acre feet. That's enough water for the needs of 9 million people a year. It would rank Sites as the seventh largest reservoir in the state, roughly the size of San Luis between Gilroy and Los Banos.

Los Vaqueros: The Contra Costa Water District is proposing to raise the earthen dam at Los Vaqueros reservoir by 55 feet, increasing the reservoir's storage capacity from 160,000 acre feet to 275,000-acre feet, enough water to meet the annual needs of 1.4

million people. The \$914 million project has a dozen Bay Area partners that would put up some of the money and receive some of the water as drought insurance. Among them are the Santa Clara Valley Water District, East Bay Municipal Utility District and the San Francisco Public Utilities Commission. The project was endorsed Monday by a coalition of six prominent environmental groups — including the Nature Conservancy, Audubon Society and Planning and Conservation League — because some of the water would go to Central Valley wetland refuges for ducks, geese and other wildlife, in addition to people and farms.

Pacheco Pass: The Santa Clara Valley Water District is hoping to build a new reservoir in southern Santa Clara County near Pacheco Pass, along with a dam up to 300 feet high. The reservoir, which would cost roughly \$900 million, would hold 130,000 acre-feet of water — enough to meet the water needs of 650,000 people for a year. The project would replace an existing small reservoir of 6,000 acre-feet that is used to recharge farmers' groundwater.

Temperance Flat: The U.S. Bureau of Reclamation has proposed building a 665-foot-high dam on the San Joaquin River in the Sierra foothills in Fresno County. The \$3 billion project, which would construct the second-tallest dam in California, behind Oroville Dam, would create a reservoir of 1.3 million acre-feet, enough water for 6.5 million people a year.

Semitropic: The groundwater district near Bakersfield, which stores water for agencies from the Bay Area to Los Angeles, has proposed an expansion.

Kern Fan: The Irvine Ranch Water District in Irvine, which serves 380,000 residents of Orange County, is proposing to build a \$171 million groundwater storage project at the south end of the Kern River.

San Diego: The city of San Diego, which wants to produce one-third of its water by 2035 from recycled wastewater, is planning a \$1.2 billion project to purify it and deliver it to Miramar Reservoir.

Centennial Reservoir: The Nevada Irrigation District in Grass Valley is proposing building a 275-foot-tall dam and 110,000 acre-foot reservoir on the Bear River near Colfax in Placer County.

Other projects were proposed from the Sacramento Regional Water Authority, the Inland Empire Utilities Agency and other water districts.

The Los Vaqueros Reservoir dam, located in northeastern Contra Costa County between Brentwood and Livermore, in November 2016.

This week, supporters of the various projects lined up to sing their praises.

“California faces an uncertain future of new and different water challenges and needs a project like Sites that offers essential benefits,” said Colusa County Supervisor Kim Dolbow Vann.

In a letter to the commission, former U.S. Rep. George Miller, an East Bay Democrat, said: “Expanding Los Vaqueros Reservoir is an innovative project that embodies what the voters approved when they passed Proposition 1.”

Under the terms of the initiative, the state will pay up to 50 percent of each storage project it funds. The commission will evaluate the applications, some of which are hundreds of pages long and which cost millions of dollars in engineering studies, computer modeling and other work to compile. Once the money is handed out, it could take up to 10 years for agencies to find the rest of the money, complete engineering studies, acquire land and take other steps to finish the projects.

Other money in Proposition 1 was earmarked for water recycling, desalination, watershed protection, flood control, water conservation projects on farms and cities, and cleaning up contaminated groundwater. That money is being handed out by a variety of agencies — from the State Water Resources Control Board to the Department of Fish and Wildlife to the state Department of Water Resources in grant programs.

Environmentalists generally prefer underground storage to building new dams, noting that it is cheaper, does not have evaporation, and doesn’t kill fish and wildlife. They argue that the new dams proposed for rivers, in particular, are problematic and not likely to yield much water because the state already has 1,200 dams and most of the best sites were taken decades ago.

“Many of these projects never penciled out when the beneficiaries had to pay the total costs,” said Jonas Minton, water policy adviser with the Planning and Conservation League in Sacramento. “Now in many cases they are asking the public to subsidize additional water for them.”

Proposition 1 was endorsed by the state Republican and Democratic parties, along with Gov. Jerry Brown, U.S. Sen. Dianne Feinstein, the California Chamber of Commerce, Silicon Valley Leadership Group and major unions and water districts. It was opposed by some environmental groups and commercial fishing organizations worried about the impact of new dams on fisheries.

Voters approved it 67-33 percent.

Asked why it has taken so long to distribute the money for storage — which could include not only new reservoirs, but also underground storage — Orrock said that because billions of dollars of public money are at stake, the language of Proposition 1, written by the Legislature, gave the water commission until December 2016 to hold hearings and draw up detailed rules and criteria for handing out the money.

“There were certain requirements in the measure that required the commission to do outreach and develop new regulations for how the program works,” Orrock said. “We met the deadline and are on track.”

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East Bay reservoir expansion plan wins support of environmental groups

Mercury News | August 14, 2017 | Dennis Cuff

BRENTWOOD — A \$914 million plan to expand the Los Vaqueros Reservoir as drought insurance for millions of Bay Area residents picked up endorsements Monday from six conservation groups in a rare display of environmental support for new water development.

Environmental groups are pleased because the project would provide large amounts of water for Central Valley wetlands, habitat for ducks, geese and other wildlife, in addition to storing water for people and farms.

“As a coalition, we consider these wildlife refuge benefits to be critically important,” the Nature Conservancy, Audubon California, and four other groups wrote to the California Water Commission. “The problem is so significant that some refuges ... are left virtually dry in drought years.”

The environmental coalition urged the state commission to look favorably on a request for \$434 million in voter-approved state bond money to expand the reservoir southeast of Brentwood.

A coalition of 12 water agencies are cooperatively planning to raise the Los Vaqueros earthen dam by 55 feet, increasing its storage capacity from 160,000 acre feet to 275,000-acre feet, enough water to meet the annual needs of 1.4 million people.

The Contra Costa Water District, owner of Los Vaqueros, is coordinating the grant application. Other partnering agencies include the Santa Clara Valley Water District, East Bay Municipal Utility District, San Francisco Public Utilities Commission, Alameda County Zone 7 Water District, Alameda County Water District and Grassland Water District. The latter manages wildlife refuges near Los Banos in Merced County.

Meanwhile, further studies on the expansion have raised its tentative price tag to \$914 million, up from a previous estimate of some \$800 million, the Contra Costa Water District reported Monday in submitting its grant application.

An expanded Los Vaqueros Reservoir would provide 46,000 acre feet of water annually on average for Central Valley refuges, the six environmental groups said.

Only five percent of the Central Valley’s wetlands remain because most were drained, diked, developed, plowed over and built on, the groups wrote.

The letter signers also include the Planning and Conservation League, California Waterfowl Association, Defenders of Wildlife, and Point Blue Conservation Science.

The proposed reservoir expansion project calls for a new pipeline enabling Contra Costa Water District to ship Delta water to the state’s Bethany Reservoir, where it could be moved south of the Delta to wildlife refuges.

“The potential expansion of Los Vaqueros into a regional facility presents a significant opportunity for our customers, the environment and local agency partners,” said Lisa Borba, the Contra Costa Water District Board president.

The California Water Commission is scheduled in June 2018 to decide on grants from state Proposition 1, passed by voters in 2014. If funded, the Los Vaqueros expansion could begin in 2022 and finish in 2026 or 2027.

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Why Markets Aren't Easy Solution for California's Groundwater Problems

Markets may help management of a limited resource, but they can also have unintended consequences, which is why California needs to think carefully about the risks, say experts Nell Green Nysten and Michael Kiparsky.

Water Deeply | August 11, 2017 | Nell Green Nysten and Michael Kiparsky

It has become popular to lament how slowly California is embracing water markets. Proponents' rhetoric can paint markets as an unambiguously better, or even as the only, solution to California's water challenges. But faith in market efficiency needs to be tempered with a firm grasp of the greater physical and institutional context for water. Markets may be part of the solution, but only where implemented carefully.

Take groundwater. In many areas, decades of unfettered pumping have depleted aquifers, resulting in dry wells, deteriorating water quality, depleted streams and infrastructure damage. The situation was so dire during the recent drought that the legislature passed the Sustainable Groundwater Management Act (SGMA), the first statewide mandate for managing groundwater resources.

SGMA opens the door for groundwater markets. It gives local groundwater agencies responsibility for managing priority groundwater basins and an array of tools to work with, including the ability to authorize transfers of groundwater pumping allocations within their jurisdictions. Groundwater markets based on these transfers could help water users adapt to pumping restrictions needed to achieve sustainability.

But markets are not a panacea. They can be remarkable engines for efficiently enabling the reallocation of limited resources, sometimes in ways that benefit society and the environment. However, they can also generate harmful unintended consequences. For groundwater, missteps could reverberate far into the future.

Just as air pollution markets can create pollution "hotspots," groundwater markets can concentrate pumping, causing harm to communities and ecosystems that depend on groundwater. As a cautionary example, groundwater trading in Australia's North Adelaide Plains region quickly concentrated pumping, causing a precipitous drop in local groundwater levels. Special trading rules were needed to mitigate the problem, and are now commonly applied in Australian water markets.

Those with an interest in the sustainability of California's water future should think carefully about the risks, as well as the benefits, of groundwater markets. Groundwater agencies in particular must consider not only how markets might generate efficiency and create wealth but also how to ensure they further sustainability and avoid harmful side effects.

For example, groundwater agencies will need to require pumpers to report their groundwater extractions. That can be controversial, but it provides essential context for

market trades and for establishing and enforcing the overall pumping limits and individual pumping allocations that make trading possible.

In addition, every groundwater agency will need a clear picture of the likely effects of markets to convincingly demonstrate to state watchdogs that they have charted a path to sustainability. They will need unambiguous rules to prevent unacceptable trading impacts, coupled with effective oversight and enforcement to ensure the rules are followed.

Groundwater rights law could be an obstacle for markets. For example, the most common type of groundwater right is based on overlying land ownership, and it is not clear that pumping allocations associated with such rights can be legally traded. Transparency will be essential. Groundwater agencies should seek close stakeholder involvement in market design, so they can understand and address community concerns up front and potentially head off future legal challenges.

Markets are not free. Like other management options, they have transaction costs – in this case, costs that must be incurred to enable groundwater trading that furthers sustainable management. Groundwater agencies will need to develop and fund significant physical, technological and managerial infrastructure to support market design and implementation.

Markets may be one of the tools that help California blaze a path toward better groundwater management. In some contexts, markets could help achieve sustainability more efficiently than regulations alone. However, markets that lack well-defined goals, appropriate rules or effective oversight run real risks of generating unintended consequences. Market proponents should recognize that high-profile failures could damage the prospects for groundwater markets around the state. Where groundwater agencies plan to rely on markets to help reach sustainability goals, foresight and diligent preparation will be essential ingredients for success.

This story was originally published in the Bakersfield Californian.

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

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We hold our convenient truths to be self-evident – Dangerous ideas in California water

California Water Blog | August 27, 2017 | Jay Lund, UC Davis Center for Watershed Sciences

Success in water management requires broad agreement and coalitions. But people often seem to group themselves into communities of interests and ideology, which see complex water problems differently. Each group tends to hold different truths to be self-evident, as outlined below.

These beliefs, when firmly held, do not stand up to scientific scrutiny, appear to other groups as self-serving nonsense, and hinder cooperative discussions on better solutions. The counter-productive aspects of these ideas make them dangerous to policy discussions. Since accomplishment in water policy requires a pretty broad consensus, these ideas ultimately become dangerous even to their advocates:

There is a silver bullet solution. If only California [desalinated seawater, built more storage, used less water, recycled wastewater, imported water from Canada, captured more stormwater, ..., invested in my project], its water problems would be solved. The most effective water systems in California, such as those that were most successful during the drought, adopt a portfolio approach, with a variety of thoughtfully integrated water supply and demand reduction activities. Strategic water management is more like good diversified financial investing, rather than betting on a winning horse.

I win if you lose. It is often hard to know if you are winning in California's water conflicts. How much better off will the environment or farming be with more water? Some, rather than answering this complicated question, find it easier to measure success by the amount of water denied to a competing interest. Identifying villains is often convenient for politics and fund-raising, even as it distorts issues and solutions, and makes cooperation almost impossible. The stereotypical Westlands vs. delta smelt conflict is an example where each "side" views their success in terms of how much water it prevented the other from receiving. The strategy of opposing success by others only makes effective solutions more difficult to discuss and achieve.

We can "solve" or "fix" water problems. Some problems can be solved permanently. But California is a dry state with a huge, dynamic economy, massive irrigated agriculture, and a diversity of native ecosystems; it will never completely solve its water problems. California will always have water problems and conflicts, which will change with time – as they always have. Yet, California has managed to have tremendous economic prosperity and agricultural productivity while remaining a relatively good place for people to live despite its dry Mediterranean climate. Even with water problems, we largely succeed anyway. But we can do better, especially in protecting our native ecosystems. Discussions of solutions should be realistic about not solving all problems for all time.

Someone else should pay. Finance is always easier if someone else pays. We all want federal or state funds. Water bonds pass costs on to the not-yet-voting future. Alas, the water sector is one of the wealthiest parts of government. State, federal, and bond funds are supported by general taxes or reductions in programs that serve poorer-than-average folks. Reliance on state, federal, and bond funds often adds costs and skews programs away from being effective. Getting money from others becomes a substitute for effective water

management. Water development in California should be set up more on a 'pay as you go' basis, with more stable funding for public and environmental purposes.

Regulation will protect the environment. Regulations are good for preventing bad things, and environmental regulations have stopped many environmentally bad things since the 1970s. But regulations alone have been ineffective at rebuilding the environment and protecting it in the face of many poorly anticipated changes – such as invasive species, non-point pollution, climate change, and population growth. If we want good things to happen environmentally, we need to organize and fund ourselves so that good things happen. Historically, we largely overcame massive public health problems only when we organized local, state, and federal agencies to solve these problems broadly and inspect and work with each other, with steady and substantial local and state funding.

We were promised. Over the last 150 years, almost every water interest has been promised their ideal water delivery by some politician or law. At some time, we (or our revered predecessors) accepted the promise in lieu of a less convenient but more realistic statement of what could be done. We all know that such promises can rarely be met. This applies to water contractors, water right-holders, environmentalists, floodplain residents, and water users alike. We all have unrequited aspirations. Dwelling on these disappointments disrupts discussions and work towards better solutions.

We need trust. No group can manage California's water problems alone. Trust makes working with others much easier. But there is often little trust. We all buy cars and houses from people we do not trust and vote for politicians that we should not trust. If trust were a pre-requisite for business dealings, we would all be growing our own food, living in tents, and mostly dying young. "Lack of trust" as a reason not to talk or advance is self-fulfilling and ultimately self-defeating – unless you are enamored with the status quo. Earning each other's trust is good, but finding ways to work together anyway is needed, in all walks of life.

It will work as planned. California is a complex system that is always changing and has many uncertainties. Planning is essential, but the idea that everything will go as planned is absurd. Still, it is often politically convenient to represent plans as perfect. We need to prepare plans and resources so that they can accommodate imperfections. This is sometimes called adaptive management.

These dangerous ideas often have short-term benefits to particular groups – bringing public attention, raising money, establishing a firm negotiating position, and garnering and promoting internal cohesion within a community of interest. But sticking to such ideas is ultimately self-defeating, impedes actual advancement for all interests, and demonstrates a lack of long-term seriousness of purpose and thought.

Success in water management in California will never be absolute, but we can do better if we avoid cynicism and work out how to more effectively discuss and better cooperate. Doing so will require effort, creativity, trade-offs, working across diverse agencies and groups, and dispensing with some convenient but dangerous ideas that get in our way.

My own ideological affiliation? “More research is needed.” My ideological heresy? We don’t need all that much money for research if we work and communicate earnestly, and often collectively, to make research relevant and useful.

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State Water Board Announces New Executive Director

Former Federal Official Eileen Sobeck Brings 40 Years of Government Experience

Maven's Notebook | August 8, 2017 | State Water Resources Control Board

After a lengthy, competitive, and deliberative process, the State Water Resources Control Board has named

Eileen Sobeck as its next Executive Director. She replaces Tom Howard, who retired in May 2017.

After reviewing a wealth of qualified applicants, the State Water Board selected Sobeck due to her substantial managerial and environmental experience. She has nearly 40 years of government service, and more than a decade of executive and management experience leading professional staff in complex organizations.

Sobeck will be new to state government, but has spent her career in federal agencies that touch on many of the same science-based, public resource challenges the State Water Board faces.

Most recently she headed the National Oceanic and Atmospheric Administration (NOAA) Fisheries as the Assistant Administrator at the Department of Commerce (2014-2017). Prior to her work at NOAA she was the Department of Interior's Acting Assistant Secretary for Insular Affairs (2012-2014), and Deputy Assistant Secretary for Fish, Wildlife and Parks (2009-2012). Sobeck is a lawyer by training and spent 25 years at the U.S. Department of Justice, ultimately serving as Deputy Assistant Attorney General for Environment and Natural Resources (1999-2009).

While Sobeck has spent her professional career in Washington, D.C., she has many ties to California. She grew up in Davis, is a graduate of Stanford and Stanford Law School, and has strong family connections to California.

Sobeck will join the State Water Board following the Labor Day holiday weekend.

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Water Agency's Davis appointed new state water resources chief

Healdsburg Tribune | July 25, 2017 | Frank Robertson

California Governor Jerry Brown has named Sonoma County Water Agency General Manager Grant Davis as the new director of the California Department of Water Resources (DWR). The appointment, which requires state Senate confirmation, means Davis takes over Aug. 1 as head of the state agency that oversees California's water supplies.

Davis, 54, has been general manager of the Sonoma County Water Agency since 2010 when he took over after retirement of Randy Poole. The Davis era at the Water Agency has won praise for transparency and progressive policies in water conservation and environmental restoration of the Russian River watershed.

"The Water Agency is known around the world for its innovative water supply initiatives and state-of-the-art sustainability programs," said Sonoma County Water Agency Board of Directors Chairwoman and Third District Supervisor Shirlee Zane.

"The state of California is gaining a true water professional who can think outside of the box while working with everyone in the room," said Zane in a media release. "Our community benefited from his ability to work with all stakeholders to ensure our region continues to provide affordable, clean drinking water while meeting critical environmental enhancement projects."

County supervisors, who also serve as the Water Agency's board of directors, will select a successor, said Zane. In the interim, the Water Agency's chief engineer, Jay Jasperse, and assistant general managers, Pam Jeane and Mike Thompson, "will ensure that a seamless transition occurs until the board takes formal action," said Zane.

"To my colleagues at the Water Agency, I can't say thank you enough for your unparalleled professionalism and dedication to our community and the organization," Davis said in a prepared statement. "I am also appreciative of the Water Agency's Board of Directors who provide the leadership and support needed to secure our future water supply."

Davis joined the Water Agency in 2007 as assistant general manager before becoming general manager in 2010. As general manager, Davis supervised more than 280 employees responsible for the Water Agency's core functions of providing drinking water to more than 600,000 residents in most of Sonoma County and northern Marin County, wastewater management for 60,000 customers and maintaining nearly 100 miles of streams and detention basins for flood protection. The Water Agency is also restoring habitat for three Russian River fish species federally listed as threatened or endangered.

Under Davis' leadership, the Water Agency developed the North Coast and Bay Area Integrated Regional Water Management Programs in which \$19 million was secured to support installation of a new regional Bay Area weather forecasting satellite system.

Prior to joining the Water Agency, Davis was executive director of The Bay Institute, a science-based nonprofit, dedicated to protecting the San Francisco Bay-Delta watershed.

The state DWR operates and maintains the California State Water Project, which provides drinking water to residents and water to agriculture. DWR programs also work to preserve natural environment and wildlife, monitor dam safety, manage floodwaters, conserve water use, and provide technical assistance and funding for local water needs projects.

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Audit: US misuses taxpayer cash for California water project

The Press Democrat | September 8, 2017 | Ellen Knickmayer, Associated Press

SAN FRANCISCO — The U.S. Department of Interior improperly contributed tens of millions of dollars in taxpayer money to help politically powerful California water districts plan for a massive project to ship the state's water from north to south, a new federal audit said Friday.

Federal officials gave \$84 million to help finance the water districts' planning, backed by Democratic Gov. Jerry Brown, to build two giant water tunnels to re-engineer the state's water system, according to the audit by the inspector general's office of the U.S. Interior Department obtained by The Associated Press.

By California law and by an agreement by the water districts, California water districts and not federal taxpayers are supposed to bear the costs of the \$16 billion project, the audit said.

The proposed tunnels are part of Brown's decades long push for a project that would more readily carry water from green Northern California south, mainly for use by cities and farms in central and Southern California. Voters rejected an early version of the proposal in a statewide vote in the 1980s.

California water districts are making final decisions on whether to go ahead with the controversial project.

The inspector general says federal authorities did not fully disclose to Congress or others that it was covering much of the cost of the project's planning.

The actions by the Bureau of Reclamation, which is part of the Interior Department, mean that federal taxpayers paid a third of the cost of the project's planning up to 2016, the audit said.

Central Valley water districts that were supposed to pay 50 percent of the tunnels' planning costs contributed only 18 percent, the audit found.

California officials, meanwhile, have consistently said no taxpayer money was being spent on the project.

Asked if auditors wanted contractors to repay the money, Interior spokeswoman Nancy DiPaolo said, "We certainly hope so." That decision was up to California, she said.

Thomas Birmingham, general manager of the sprawling Central Valley rural water district Westlands, which received one of the largest shares from the government, said he knew of nothing about the arrangement that was "inconsistent with either state or federal law."

"The state was aware of it," Birmingham said of the federal payments. "No one indicated this was somehow a violation of the letter or spirit of the agreement" guiding the costs of the project.

Birmingham said water districts would be responsible for reimbursing the federal money if the project went forward and benefited those districts.

Spokespeople for the Bureau of Reclamation, Brown's office and the state Department of Water Resources either had no immediate comment Friday or did not respond to requests for comment.

The audit's findings were "appalling," said Doug Obegi of the Natural Resources Defense Council environmental group, which has opposed the project on the grounds that it would speed up the extinction of several endangered native species.

"The public is paying for what a private party is supposed to pay for," Obegi said. "That is taking the public's money, and that's not OK."

A former lobbyist for Westlands, David Bernhardt, has been a top official in the Interior Department under the George W. Bush administration and again under Trump. Critics long have said Westlands has benefited from its ties to the federal agency, which the water district and Interior deny.

"I wish I were surprised to learn that the Westlands Water District colluded with the Interior Department to hide millions of dollars in unauthorized payments from Congress, but this is typical of the longstanding and incestuous relationship between the largest irrigation district in the country and its federal patrons," said U.S. Rep. Jared Huffman, a California Democrat.

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Opinion: Delta twin tunnel 'WaterFix' bad for Santa Clara County, won't fix anything

Mercury News | September 8, 2017 | Helen Hutchinson

The League of Women Voters of California opposes the WaterFix—twin tunnels the Department of Water Resources proposes to bore under the Sacramento-San Joaquin Delta to move water for urban and agricultural uses in other regions.

Better options exist to address California's water needs. The Santa Clara Valley has the innovative capacity to develop those options.

The Pacific Institute and the Natural Resources Defense Council have shown that although Californians annually use at least 6 million acre feet more water than the state's rivers and aquifers can sustainably provide, water-saving practices could save up to 14 million acre feet each year.

Water conservation, wastewater reclamation and stormwater capture—long-standing solutions supported by the League—are alternatives to the twin tunnels and form the viable Plan B to create a more reliable water supply than the tunnels for Santa Clara County.

Water recycling alone could meet a large percentage of Santa Clara Valley's water needs. Santa Clara Valley imports about 170,000 acre feet per year from the Delta while discharging about 200,000 acre feet of wastewater to the Bay. The Orange County Water District already recycles over 100,000 acre feet of wastewater annually, but the Santa Clara Valley Water District looks to recycle only 30,000 by 2035.

Clearly, there is room for improvement here.

Stormwater capture is another source of water that could be developed statewide. Los Angeles, which gets about the same precipitation as San Jose, projects possible stormwater capture from 170,000 to 250,000 acre feet per year by 2099. At that rate, stormwater capture alone could cover the 170,000 acre feet that Santa Clara Valley imports from water projects through the Delta.

Unfortunately, conservation alternatives did not receive sufficient study during the environmental review phase of the WaterFix, which has, from the beginning, focused on large-scale infrastructure as the solution to California's water challenges.

Repair of existing infrastructure, such as damaged dams and sinking water transfer aqueducts, will already require billions of dollars. WaterFix tunnels will only add billions in construction and interest costs, without adding more certainty or water to our future.

Looking to the Delta for more water by any delivery system is unwise. The health of the Delta environment has been damaged by over-large amounts of water taken for years. Delta exports have been limited in the past due to regulatory restrictions; the same environmental concerns will reduce available amounts in the future.

Flows to repel salinity moving upstream from the ocean protect water quality for exports and for the health of the Bay-Delta Estuary. These flows will be harmed by WaterFix proposals to withdraw water before it even reaches the Delta.

Fortunately, an April 2017 survey by EMC Research demonstrated the willingness of a majority of Santa Clara Valley voters to pay for recycled water and stormwater capture. These same

voters were much less willing to invest in storage and conveyance improvements to maintain the level of imported water from the Delta.

Similarly, a 2015 Bay Area Council poll found 88 percent of Bay Area residents favored expanding recycled water programs.

Regional water security through projects involving local, sustainable and reliable alternatives would create local jobs. The approximately \$16 billion baseline cost of the WaterFix, plus tens of billions in interest, could instead fund a range of job-creating projects that would benefit residents, businesses, and farms.

It could fund regional investments that would help buffer against sea level rise, maintain infrastructure, and increase drought resilience.

Twentieth century engineering projects like the WaterFix cannot protect Santa Clara Valley water supplies. We need to turn instead to 21st century innovation, at which the Santa Clara Valley excels and on which California's water future depends.

Helen Hutchison of Oakland is president of the League of Women Voters of California. She wrote this for The Mercury News.

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Democrats seek \$4 billion bond for water, flood control, parks

Sacramento Bee | August 31, 2017 | Angela Hart

As torrential rains and dangerous floodwaters pummel large swaths of Texas and parts of Louisiana, California lawmakers are eyeing legislation to prevent similar damage from the state's own disasters.

Senate Bill 5 from state Senate President Pro Tem Kevin de León would ask voters this upcoming June to approve a \$4 billion bond to fund water, flood and parks projects across California.

To make it to the governor's desk, it would need to clear the Assembly, where another water and open space bond from Assemblyman Eduardo Garcia, D-Coachella, is under debate.

De León has characterized the bond as critical following the state's historic five-year drought, and the 2017 winter storms that marked the wettest water year for California in more than a century.

If passed, bond proceeds would fund flood and water infrastructure projects, and expand and improve local parks and open space. It would allocate \$550 million for water projects, \$750 million for flood control projects such as levee repair, and \$2.6 billion for local and regional parks – including \$800 million to build new parks in lower income communities. It would also fund deferred maintenance and other projects at California's State Parks system, including construction of new trails, plant and wildlife habitat restoration, and coastal climate change adaptation projects.

It comes about three years after Proposition 1, a \$7.12 billion bond approved by more than 67 percent of voters in November 2014. If Gov. Jerry Brown signs off, de León's bond would go to voters in June. Brown, de León and Assembly Speaker Anthony Rendon are also behind a \$4 billion bond for housing, which would go before voters in November 2018 if it clears the Legislature.

Lawmakers have until the legislative session ends Sept. 15 to send the measures to Brown's desk.

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California Flood Plan Shifting To Giving Rivers More Room

CBS | August 25, 2017 | Associated Press

SAN FRANCISCO (AP) – After more than a century of building levees higher to hold back its rivers, California took another step Friday toward a flood-control policy that aims to give raging rivers more room to spread out instead.

The plan, adopted by the flood-control board for the Central Valley, a 500-mile swath from Mount Shasta to Bakersfield that includes the state's two largest rivers and the United States' richest agricultural region, emphasizes flood plains, wetlands and river bypasses as well as levees.

Backers say the changing strategy will better handle the rising seas and heavier rain of climate change, which is projected to send two-thirds more water thundering down the Central Valley's San Joaquin River at times of flooding.

The idea: "Spread it out, slow it down, sink it in, give the river more room," said Kris Tjernell, special assistant for water policy at California's Natural Resources Agency.

Handled right, the effort will allow farmers and wildlife – including native species harmed by the decades of concrete-heavy flood-control projects – to make maximum use of the rivers and adjoining lands as well, supporters say.

They point to Northern California's Yolo Bypass, which this winter again protected California's capital, Sacramento, from near-record rains. Wetlands and flood plains in the area allow rice farmers, migratory birds and baby salmon all to thrive there.

For farmers, the plan offers help moving to crops more suitable to seasonally flooded lands along rivers, as well as payments for lending land to flood control and habitat support.

Farmers, environmental leaders and sporting and fishing groups joined in praising the plan Friday, a rarity in California's fierce water politics. "Savor the moment," Justin Fredrickson of the California Farm Bureau joked to the flood board.

Five years in negotiation, the flood proposal moves away from "two overarching themes in the history of our flood management. One has been build the levees bigger and get the water out" to the ocean. "Another theme has been don't talk to each other," said Rene Henery, state science director for the Trout Unlimited conservation organization.

California's Central Valley before Western settlement annually transformed into an inland sea in the rainy season. Settlers transformed the valley, building levees along the Sacramento and San Joaquin rivers to create land for farm fields and cities.

The state doesn't have the funding for the nearly \$20 billion in projects envisioned by the plan, including thousands of acres of proposed new wetlands along the San Joaquin. But the outline is meant to guide work and funding, including \$89 million the state announced for Central Valley wetlands earlier this week.

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Dozens are suing to block Delta tunnels. Will it matter?

Sacramento Bee | August 21, 2017 | Dale Kasler

They have one of the most powerful legal weapons found in any courtroom – the California Environmental Quality Act, or CEQA.

But environmental groups, local governments and others face an uphill climb in their fight against the controversial Delta tunnels project. History suggests that suing under the California environmental law likely won't be enough to kill the tunnels.

At least 58 groups opposing the tunnels had sued the state as the legal deadline approached Monday afternoon. The plaintiffs include an alliance of crab boat owners, an American Indian tribe dependent on salmon fishing, several Sacramento Valley water agencies, the cities of Folsom and Roseville, and San Joaquin, Solano and Yolo counties. Sacramento County filed one of the first suits last week, arguing that the \$17 billion tunnels project would take valuable Delta land out of production and create other problems in the south county. All of the cases say the tunnels project represents a violation of the state's strict environmental law.

Yet experts on CEQA said project opponents shouldn't count on their lawsuits forcing Gov. Jerry Brown's administration to scrap the tunnels. More typically, the courts will require developers to redo some of their environmental impact reviews – a process that could lead to delays and even some modifications, but not outright cancellation of the project.

"CEQA isn't designed to halt projects," said Tina Thomas, a prominent Sacramento land-use attorney.

Some groups have been able to use CEQA litigation to drag projects out to the point that developers give up. Steve Herum, a lawyer in Stockton, represented a citizens group in Clovis years ago that sued over a proposed Walmart in the Fresno suburb. The case languished in the courts for years, and eventually the developer walked away, Herum said.

"We opposed it for 11 years and it still hasn't been built," he said.

There are also numerous examples of CEQA lawsuits barely making a ripple in how a development moved to fruition. Opponents of Golden 1 Center failed to make a dent in the development of the year-old Sacramento Kings arena in downtown Sacramento. Other big projects that have proceeded without interruption despite CEQA lawsuits include Sacramento's McKinley Village infill housing community and the long-range redevelopment of the downtown railyard.

The city of Sacramento added its name to the list of plaintiffs challenging the tunnels shortly before the deadline, although Mayor Darrell Steinberg said the city isn't

necessarily trying to thwart the project. Rather, he called the lawsuit a “narrowly drafted” case aimed at giving the city a voice in determining how the tunnels are operated and how they would affect the city’s water supplies.

Even if CEQA litigation can’t halt the tunnels, the project isn’t exactly home free. The south-of-Delta water agencies that will have to pay for the project are expected to vote next month on whether to commit. At least one major agency – Westlands Water District, which serves farmers in Fresno and Kings counties – has indicated the project might be too expensive.

Regardless of how the water agencies vote, tunnels opponents said they think they can use CEQA to bottle up the plan in court.

“This is a different type of situation,” said Bob Wright, counsel at Friends of the River, one of five environmental groups that sued the state Monday in Sacramento Superior Court.

In particular, Wright said state officials botched the required environmental reviews by failing to consider an obvious alternative to building the tunnels – namely, a comprehensive conservation program that would force south state water agencies to pull less water out of the Delta. If the state were forced by a judge to consider such a plan, it would create a groundswell of public support for conservation, Wright said.

“The (tunnels) project will likely not proceed, as a simple matter of common sense,” he said. Environmentalists believe the tunnels would bring more environmental harm to the Delta’s fragile ecosystem.

As envisioned by state officials, the tunnels would reroute the flow of water from the Sacramento River through the Sacramento-San Joaquin Delta and into the massive pumping stations at the south end of the estuary.

The pumps are so powerful that they can cause portions of the San Joaquin River to flow backward, putting endangered fish species in harm’s way. Pumping sometimes has to be halted or severely curtailed to save the fish, allowing water to flow out to the ocean and bypass the pumps.

Brown’s aides say the tunnels would fix that. The twin underground tunnels would start at Courtland, outside of Sacramento, and carry a portion of the Sacramento River’s flow 40 miles south to the pumping stations. State officials say this arrangement would reduce the “reverse flow” phenomenon, keep more fish alive, and enable the pumps to deliver water more reliably to the agencies in Southern California, the San Joaquin Valley and parts of the Bay Area.

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Sacramento County sues to block Delta tunnels – and it's not alone

Sacramento Bee | August 18, 2017 | Dale Kasler and Ryan Sabalow

Sacramento County led a cascade of area governments suing the state in an effort to block the Delta tunnels, saying the \$17 billion project would harm local farmers, endangered fish and low-income communities at the south end of the county.

The lawsuits come as the tunnels project, championed by Gov. Jerry Brown as a means of improving south state water supplies, makes headway with environmental regulators. In July, the state announced that the massive project complies with the California Environmental Quality Act, or CEQA, and wouldn't hurt fish, wildlife or human health in the Sacramento-San Joaquin Delta.

Elected officials in the Sacramento area long have opposed the project and have formed an alliance, called the Delta Counties Coalition, dedicated to fighting the tunnels. Sacramento County filed its lawsuit Thursday, as did the Placer County Water Agency, the cities of Stockton and Antioch and a consortium of commercial fishermen's groups. Additional lawsuits were expected to be filed by Monday, the legal deadline for attacking the tunnels project with a CEQA suit.

"There are many more coming," said Matthew Emrick, attorney for the city of Antioch.

Sacramento's suit, filed in Sacramento Superior Court, say the state Department of Water Resources is ignoring the environmental harm the tunnels will create in the Delta, in violation of CEQA. The county's lawyers argued that "almost 700 acres of county farmland will be rendered unusable" during the 13-year construction period, and once the project is operational it will degrade the quality of the water flowing through the Delta by diverting portions of the Sacramento River's clean water flows through the tunnels.

Sacramento's case is aimed at "really protecting Sacramento's access to water and the Delta way of life," said Robyn Truitt Drivon, the county counsel.

The suits were hardly a surprise; state officials said last month they expected litigation to come rolling in. CEQA can be a powerful tool for slowing or even halting a big development project. Legal experts say it's likely the CEQA suits will get consolidated, but that process alone could take months.

"I think the initial effort will be to get all of the various lawsuits that are filed before one judge, so you don't have multiple judges addressing similar issues," said Barton "Buzz" Thompson, Jr., a Stanford University water law expert.

Erin Mellon, a spokeswoman for the state Department of Water Resources, declined comment on the suits.

The first round of lawsuits came in June, after the U.S. Fish and Wildlife Service and the National Marine Fisheries Service said the tunnels, known as California WaterFix, wouldn't jeopardize the continued existence of such endangered species as the smelt

and Chinook salmon. Days later, the federal agencies were sued by the Golden Gate Salmon Association, the Natural Resources Defense Council, Defenders of Wildlife and The Bay Institute. The suit says the agencies' declaration violated the U.S. Endangered Species Act.

Meanwhile, Butte County officials announced last week that they will file their own suit against the state over the tunnels.

Supervisor Bill Connelly said locals are fearful of losing their water rights to Southern California. He said Butte officials also believe Lake Oroville – the state's second-largest water-supply reservoir and a popular Butte County recreation hub – would be sucked dry each year to feed the tunnels.

“Overall, it's just the arrogance of the rest of the state in not considering the people that supply their water, and our needs,” Connelly said.

The tunnels project would divert a portion of the Sacramento River's flow into a pair of underground tunnels, delivering the water directly to the massive federal and state pumping stations in the south Delta. By doing so, Brown's administration argues, the project would overhaul the way water flows through the Delta and reduce harm to fish.

In particular, the tunnels largely would remedy the damaging “reverse flow” phenomenon that occurs when the pumps are operating. Often the pumps have to be shut off to keep fish from peril. That would enable the state and federal governments to keep the pumps running more reliably.

Environmentalists and others reject the argument that the tunnels will protect salmon and other fish. “The project sacrifices rather than saves the Delta's fish and wildlife,” according to a lawsuit filed Thursday by a group of commercial fishermen's associations.

The pumps supply water to Southern California, parts of the Bay Area and farms in the San Joaquin Valley.

The suits are gushing in as the south-of-Delta water agencies deliberate on whether they want to pay for the project.

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Delta tunnels project needs water agencies to pay for it. Why some are hesitating

Sacramento Bee | August 17, 2017 | Dale Kasler and Ryan Sabalow

If you live in Los Angeles, the cost of building the Delta tunnels might raise your water bill by as little as \$2 a month or less – no more than a latte, to quote one of the project's main cheerleaders in Southern California.

But if you're a farmer on the west side of the San Joaquin Valley, the increase could be hundreds of dollars per acre-foot of water. And you could be looking at hundreds of thousands of dollars in additional expenses every year, for decades, for a resource that's as indispensable to farming as soil itself.

As California water agencies prepare to vote next month on paying for the tunnels, which are supposed to improve water deliveries to the southern half of the state, the stark difference between urban and rural water users' expected costs illustrates one of the project's main stumbling blocks.

While the controversial project is moving through the permit process, it can't break ground unless a solid bloc of south-of-Delta water agencies, urban and rural alike, commits to paying the \$17 billion tab.

It's far from certain that all the major water agencies will sign on.

The Westlands Water District, an influential agency serving farmers in western Fresno and Kings counties, is among the agricultural districts expressing serious concerns about cost. Westlands farmers' water bills, which currently run to around \$200 an acre-foot, could jump by as much as \$495 an acre-foot to pay for the tunnels, according to estimates provided to the district last month by Goldman Sachs & Co.

"The number's just too high," said farmer Sarah Clark Woolf, who serves on Westlands' board of directors. "It doesn't work for farming." The Westlands board is tentatively scheduled to vote on the project Sept. 19.

If a significant player such as Westlands were to withhold financial support, the entire project could falter. Gov. Jerry Brown's administration, which has been pushing the tunnels for years, would have to persuade other south-of-Delta agencies to pay more.

State officials acknowledge the importance of winning over all the big contractors. "If at the end of the water contractors' processes it becomes clear there is not a critical mass of local agencies participating, then we would have to assess whether there is a project that can move ahead," said Erin Mellon, spokeswoman for DWR." She added that "inaction would be irresponsible."

The federal Bureau of Reclamation's pumping station near Tracy delivers water to the San Joaquin Valley. Contractors of the federal Central Valley Project and State Water Project will decide in September whether to pay for the twin tunnels, a controversial project designed to improve water flows through the Delta.

California WaterFix, as the project is formally known, is Brown's audacious plan for remaking the plumbing of the Sacramento-San Joaquin Delta by building two tunnels beneath the estuary.

Decades of pumping water from the Delta has degraded its ecosystem and left some fish species at the brink of extinction. Located near Tracy in the south Delta, the pumps are so powerful they can literally reverse the flow of segments of the San Joaquin River, pulling fish into harm's way. The pumps sometimes have to be shut off to protect the fish, leaving water to flow out to sea.

Environmentalists and Delta landowners say the tunnels would make things worse. Brown disagrees.

The tunnels would divert a portion of the Sacramento River's flow, from a point near Courtland, to the existing Tracy pumps about 40 miles south. Brown's aides say this would eliminate much of the "reverse flow" problem. The pumps could operate with fewer interruptions, firming up water deliveries to valley farmers and 19 million Southern Californians.

Outside of the governor's office, WaterFix's biggest fan is probably the Metropolitan Water District of Southern California, which relies heavily on Delta water. Metropolitan appears ready to formally commit to WaterFix at a Sept. 26 board of directors meeting.

How much each of the several dozen agencies would pay for the tunnels depends on how much water they currently take out of the Delta. With the ability to spread its estimated \$4 billion share of the cost among 6 million households, Metropolitan staff said last week that average monthly bills for its customers likely will increase \$1.90 to \$3.10 a month.

"About a tall latte. 1x a month," general manager Jeff Kightlinger wrote in a Twitter post.

The math is more forbidding for an agricultural agency like Westlands. It can spread its costs among just 600 customers, not millions. Although the price hikes would vary widely, depending on which borrowing structure is employed, the numbers released by Goldman Sachs have left some growers reeling. A farmer such as Woolf could see his or her annual water bill increase by as much as \$700,000.

"It's definitely more affordable for an urban district compared to a farmer," said Jeff Michael, a University of the Pacific economist who has consulted for anti-tunnels advocates. "The capacity to pay, and the willingness to pay, are on a different level."

Without the tunnels, Brown's aides say environmental conditions in the Delta will continue to deteriorate and pumping operations will become less reliable. That's a compelling argument, even for some agricultural districts.

"I won't lie to you, it's going to be expensive," said Ted Page, president of the Kern County Water Agency, a major agricultural district at the south end of the valley. "What's the alternative? It takes water to run your business." He added that the Kern County agency is still formulating its cost estimates; its board is expected to vote in late September or early October.

A big sticking point for many water users, particularly farmers, is that considerable uncertainty remains over how much water would get delivered from the Delta if the tunnels are built. Project opponents say the tunnels' leading advocates are basing their financial projections on overly optimistic expectations about water deliveries.

Metropolitan's analysis "is significantly flawed and understates the costs and risks," attorney Doug Obegi, of the environmental advocacy group the Natural Resources Defense Council, told the Southern California agency's board of directors this week.

In addition, Wall Street analysts said this week that Metropolitan's prices might rise even more if some of the other water agencies won't commit their dollars to the project. "The cost to (Metropolitan) and its ratepayers could be higher if some contractors decline to participate," Fitch Ratings said in a report analyzing the project's finances.

The water agencies' deliberations have been complicated by the way California's delivery system is structured. The federal and state governments operate two different water systems in California, side by side. They both pump water out of the south Delta, but when it comes to paying for WaterFix, they're playing by different rules.

The State Water Project's south-of-Delta agencies have informally decided they will all participate in the funding, in amounts that correspond to how much water they currently pull out of the Delta. If an agency bails out, it is expected to find a substitute. The more an individual agency pays, the more water it can expect to receive out of the tunnels.

With everyone expected to participate, the costs become more palatable, even for agricultural users like those in Kern County.

It's different for customers of the federal government's Central Valley Project. The CVP's contractors take about 45 percent of the water pumped from the Delta.

In a memo in late July, the U.S. Bureau of Reclamation said two significant CVP customers don't have to contribute to WaterFix's costs. Those customers are a group of state and federal wildlife refuges, which are guaranteed water by federal law, and the Exchange Contractors, a large cluster of farmers along the San Joaquin River who have

special historical water rights. Those two groups combined take about 20 percent of all the water that's pumped out of the Delta.

The bureau's memo said it doesn't believe it needs the tunnels to continue meeting its legal obligations to supply water to those two groups. As a result, the bureau said, they don't have to pay for the tunnels.

As for every other CVP customer, the bureau has said spending money on tunnels construction project is purely voluntary.

"We're having our CVP contractors make their business decision on whether they will choose to participate and therefore pay capital costs for California WaterFix," said Brooke White, the bureau's program manager for the tunnels project, in an interview this week.

The bureau's decision has many of the other CVP contractors squirming. Those that don't sign up risk losing some water; they wouldn't be eligible for water that's routed through the tunnels. On the other hand, if they do participate, their costs will be higher because of the two groups that have been let off the hook financially.

"The capital costs ... will be spread only among those who participate," said Tom Birmingham, the general manager at Westlands, one of the largest CVP contractors.

If the costs were allocated among every CVP contractor, Birmingham said, it would be easier for Westlands to commit to the project.

"It becomes affordable," he said.

Another major CVP contractor, the Friant Water Authority, which serves farmers on the east side of the valley, considers itself undecided on the tunnels issue. Jason Phillips, the authority's chief executive, said Friant's board hasn't yet scheduled a vote on the tunnels but is weighing the potential costs and benefits.

"How do you make a multibillion-dollar decision? Is it a risk worth taking? That's what we're looking at," Phillips said. "It depends on how much skin you're going to have to put into the game."

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Sacramento County Starts Avalanche of Lawsuits Against Delta Tunnels Plan

Courthouse News Service | August 17, 2017 | Nick Cahill

SACRAMENTO, Calif. (CN) – Seeking to freeze a contentious \$16 billion waterworks plan supported by Gov. Jerry Brown, Sacramento County sued the California Department of Water Resources on Thursday over its certification of the project’s “dizzying” and “shifting” environmental review.

In a 69-page lawsuit filed in Sacramento County Superior Court, the county says the plan known as the “California WaterFix” will harm residents and the environment in myriad ways. According to the petition, a judge should throw out the environmental certification and halt one of the largest public works projects in state history.

“Department of Water Resources chose to bury the public in paper, producing a series of disjointed and confusing documents based on a vague and shifting project description, incomplete and inaccurate data and flawed analytical methods,” the petition states.

The county alleges that the plan, which would divert freshwater around the Sacramento-San Joaquin River Delta in a pair of 35-mile tunnels, will harm endangered fish species, delta farmers and disproportionately impact low-income communities.

In June, federal fisheries officials signed off on the project, finding it could be completed without devastating impacts to native salmon and other endangered fish species.

The county is represented by Kelley Taber of Somach Simmons & Dunn of Sacramento.

Another delta city, Antioch, and a host of environmental and fishing groups filed similar lawsuits Thursday to halt the delta tunnels, claiming violations of the California Environmental Quality Act.

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Southern Californians, here's how much your water bills could rise to pay for Delta tunnels

Sacramento Bee | August 10, 2017 | Ryan Sabalow

More than 6 million Southern Californian households could pay \$3 more a month to help cover the costs of Gov. Jerry Brown's controversial plan to bore two huge tunnels under the Sacramento-San Joaquin Delta.

But that's cheaper than the \$5 a month that households in the Metropolitan Water District of Southern California's service area were expected to pay under projections released four years ago, Jeffrey Kightlinger, the water district's general manager, said Thursday.

"Given the importance of this project to maintain water supply reliability for the region, these are encouraging numbers," Kightlinger said in an announcement posted on a blog on Metropolitan's website. "It also goes to show the ability of the Southland region to fund major infrastructure projects by pooling our resources."

The announcement comes at a critical time for the tunnel project.

After a decade of preliminary planning, urban and agricultural agencies that would receive water from the tunnels have been weighing whether they're going to pay for the \$17.1 billion project.

Some influential San Joaquin Valley farmers who rely on Delta water are balking at preliminary cost estimates. But urban districts such as Metropolitan can more easily spread the costs over millions of ratepayers, making the project seem relatively affordable.

Kightlinger said Metropolitan is expected to pay 26 percent of the tunnels' costs. Metropolitan typically uses Delta water for a third of its supply. Metropolitan sells water to 26 member agencies serving 19 million people in a six-county service area.

Kightlinger said a more detailed financial analysis is going to be presented at a joint committee meeting of the district's board of directors Monday.

The project, which Brown's administration calls California WaterFix, would burrow a pair of 40-foot-wide tunnels along the Sacramento River, just south of Sacramento, and divert a portion of the river's flow directly to the giant pumping stations at the south end of the Delta.

Brown's administration says the tunnels would reduce the harm the pumps do to Delta smelt and other endangered species, allowing the pumps to deliver water more reliably to Southern California, Silicon Valley and San Joaquin Valley farms.

Many Delta landowners, environmentalists and fishing groups are fiercely opposed to the project, saying the tunnels would harm local water supplies and further degrade the Delta's fragile habitat. Lawsuits challenging the project are underway.

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