SPECIAL NOTICE REGARDING CORONAVIRUS DISEASE 2019 (COVID-19) AND PARTICIPATION IN PUBLIC MEETINGS

On March 4, 2020, Governor Newsom declared a State of Emergency resulting from the threat of COVID-19. On September 16, 2021, Governor Newsom signed Assembly Bill No. 361 into law. Assembly Bill No. 361 amends Government Code section 54953(e) by adding provisions for remote teleconferencing participation in meetings by members of a legislative body, without the requirements of Government Code section 54953(b)(3), subject to the existence of certain conditions. The San Bernardino Valley Municipal Water District adopted a resolution determining, by majority vote, that, as a result of the declared State of Emergency, a meeting in person would present imminent risks to the health or safety of attendees. Accordingly, it has been determined that all Board and Workshop meetings of the San Bernardino Valley Municipal Water District will be held pursuant to the Brown Act and will be conducted via teleconference. There will be no public access to the meeting venue.

BOARD OF DIRECTORS WORKSHOP - RESOURCES
THURSDAY, MAY 19, 2022 – 2:00 P.M.

PUBLIC PARTICIPATION

Public participation is welcome and encouraged. You may participate in the May 19, 2022, meeting of the San Bernardino Valley Municipal Water District online and by telephone as follows:

Dial-in Info: (877) 853 5247 US Toll-free
Meeting ID: 979 215 700
PASSCODE: 3802020
https://sbvmwd.zoom.us/j/979215700

If you are unable to participate online or by telephone, you may also submit your comments and questions in writing for the District's consideration by sending them to comments@sbvmwd.com with the subject line "Public Comment Item #" (insert the agenda item number relevant to your comment) or "Public Comment Non-Agenda Item". Submit your written comments by 6:00 p.m. on Wednesday, May 18, 2022. All public comments will be provided to the Chair and may be read into the record or compiled as part of the record.

IMPORTANT PRIVACY NOTE: Participation in the meeting via the Zoom app is strongly encouraged. Online participants MUST log in with a Zoom account. The Zoom app is a free download.
Please keep in mind: (1) This is a public meeting; as such, the virtual meeting information is published on the World Wide Web and available to everyone. (2) Should you participate remotely via telephone, your telephone number will be your "identifier" during the meeting and available to all meeting participants; there is no way to protect your privacy if you elect to call in to the meeting.

SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
380 E. Vanderbilt Way, San Bernardino, CA 92408

BOARD OF DIRECTORS WORKSHOP - RESOURCES

AGENDA

2:00 PM Thursday, May 19, 2022

CALL TO ORDER
Chairperson: Director Hayes
Vice-Chair: Director Harrison

1) INTRODUCTIONS

2) PUBLIC COMMENT
Any person may address the Board on matters within its jurisdiction.

3) SUMMARY OF PREVIOUS MEETING

3.1 Board of Directors' Workshop - Resources - April 7, 2022 (Page 3)
Summary Notes BOD Workshop - Resources 040722

4) DISCUSSION ITEMS

4.1 Staff Review of "Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture" by the Pacific Institute (Page 12)
Staff Memo - Staff Review of "Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture" by the Pacific Institute
Executive Summary - The Untapped Potential of California's Urban Water Supply

4.2 Consider Purchasing Up to 5,000 Acre-Feet of Water Through a Demand Management/Water Conservation Program in Fiscal Year 2022-23 (Page 20)
Staff Memo - Consider Purchasing Up to 5,000 Acre-Feet of Water Through a Demand Management/Water Conservation Program in Fiscal Year 2022-23

5) FUTURE BUSINESS

6) ADJOURNMENT

PLEASE NOTE:
Materials related to an item on this Agenda submitted to the Board after distribution of the agenda packet are available for public inspection in the District's office located at 380 E. Vanderbilt Way, San Bernardino, during normal business hours. Also, such documents are available on the District's website at www.sbvmwd.com subject to staff's ability to post the documents before the meeting. The District recognizes its obligation to provide equal access to those individuals with disabilities. Please contact Melissa Zoba at (909) 387-9228 two working days prior to the meeting with any special requests for reasonable accommodation.

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

DATE: May 19, 2022

TO: Board of Directors Workshop – Resources

FROM: Staff

SUBJECT: Summary of April 7, 2022, Board of Directors Workshop – Resources

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The Resources Workshop convened on April 7, 2022. Director Hayes chaired the meeting via video conference.

Directors Present: President Kielhold, Vice President Hayes, Director Botello, Director Harrison and Director Longville.

Staff Present:

Heather Dyer, MS, MBA -- Chief Executive Officer/General Manager
Jose Macedo, ML, CPT (USA Retired) – Chief of Staff/Clerk of the Board
Cindy Saks, CPA – Deputy General Manager / Chief Financial Officer
Bob Tincher, PE, MS – Deputy General Manager / Chief Water Resources Officer
Melissa Zoba, MBA, MPA – Chief Information Officer

Anthony Flordelis – Business Systems Analyst
Matthew E. Howard – Water Resources Senior Planner
Adekunle Ojo, MPA – Manager of Water Resources
Karen Resendez, MA -- Human Resources / Risk Manager
Shavonne Turner, MPA – Water Conservation Program Manager

Members of the Public Present:

Melody McDonald, San Bernardino Valley Water Conservation District
Lonni Granlund, Yucaipa Valley Water District
Mark Norton, SAWPA
Jeff Mosher, SAWPA
Kelly Rowe, SAWPA Commissioner

1. Introductions

The following attendees introduced themselves:

- Kelly Rowe, SAWPA Commissioner

2. Public Comment

Chair Hayes invited public comment. There was none.

3. Summary of Previous Meeting

The meeting notes from the March 3, 2022, Board of Directors Workshop - Resources were accepted with no corrections.

4.1 Staff Update on Cloud Seeding

Deputy General Manager / Chief Water Resources Officer Bob Tincher reminded the Board about prior discussion and the request for this update.

Mr. Tincher reviewed previous information including the prior feasibility study and briefed the Board on considerations for development of a pilot-scale cloud seeding program.

Mr. Tincher noted the only difference in this estimate from last time is that most benefits would accrue in Valley District's service area. The cost for cloud seeding is about $44 per acre-foot (af) but grant funding would reduce that to $22 per af for the pilot-scale program.

As presented last time, Mr. Tincher continued, staff recognizes that cloud seeding works; the challenge is knowing precisely what is received for the investment. It is not equivalent to the strategies that the region is planning to use as shown in the Integrated Regional Water Management Plan (IRWM), he noted. Some investments in supply have been made, and some are proposed, but all are measurable to establish what the Board is receiving for the money.

Mr. Tincher credited the Santa Ana Watershed Project Authority (SAWPA) with sharing information, noting that staff are not experts in cloud seeding. However, Valley District did do cloud seeding in the past, he added.

Cloud seeding has been implemented in other states and parts of California. The study that is the best researched most detailed is the Idaho study – the Seeded and Natural Orographic Wintertime clouds: the Idaho Experiment (SNOWIE) presented to the Board last time, Mr. Tincher stated. He introduced the new material provided by SAWPA: a scientific paper and article on the SNOWIE project, and the Valley District previous cloud seeding project.

Challenges and opportunities to be addressed in a pilot scale project include:

- Trying to increase the precision in quantifying the amount of water received.
- It is difficult to track dispersion as the procedure is introducing material into a natural system with variability
- Measurement of the benefits is difficult as areas are not uniform with three-dimensional dispersion in real time
- The procedure is not 100 percent effective
- Variability in nature makes it difficult to determine if any increase in precipitation is from the silver iodide, or whether it is just a storm cell in the area

Mr. Tincher presented diagrams and explained the target control methods to measure effectiveness and further explained challenges.

Cloud seeding in the Valley District region took place between 1976 and 1978, Mr. Tincher continued. He pointed to the report by Louis Fletcher, the late Valley District general manager. The cloud seeding strategy was never proposed to be a part of any planning documents or as a method to be explored, he noted. It is unknown why the project did not continue. Mr. Tincher reminded the Board of the region's "feast or famine" hydrology, noting that the results of the project study indicate that 1976-77 was one of the driest years on record, followed by 1977-78 being the third wettest years on record. The report was inconclusive on the effects of cloud seeding. Some influence did occur during one storm, but there was no quantification, Mr. Tincher explained.

Dry periods tend to be longer than wet periods, and this makes cloud seeding challenging because when there is not much rain or many storms coming through, there is not much to harvest, Mr. Tincher continued. But when storms are coming through, there is need to be concerned about water loss to the ocean, and about the potential for liability if the seeding activity causes flooding downstream, he said.

About two million af of stormwater has flowed into the ocean uncaptured since 1990, Mr. Tincher advised. He posited that there is potential for tracking the effects of cloud seeding based on that flow to the ocean but pointed out there is tremendous potential in the watershed in focusing on cutting off the flow to the ocean. Stormwater projects identified will capture much of that when implemented, but not all of it, he reminded.

The pilot-scale project proposed by SAWPA is consistent with Valley District's Strategic Plan, Mr. Tincher noted. Staff will try to answer questions and increase the level of certainty in this type of methodology, he said.

Considerations link back to three main issues, Mr. Tincher explained:

1. Quantifying the actual benefit

    a. independent measurement, analysis, and peer review of results

    b. Look for ways to improve target -control measurement method

    c. Provide list of assumptions used to test the benefits

    d. Look for a method to use to determine the probability that increased precipitation is from cloud seeding and not due to variability in the weather

    e. Provide error bands on the results

    f. Include SAWPA member agency staff in the process

2. Cloud seeding benefits possibly flowing into the ocean

    a. Consider using the watershed calibrated flow models to track the water from cloud seeding

    b. Tracking flow to the ocean on a daily basis

3. Liability for potential floods

    a. Show how SAWPA will avoid potential, liability for any flood events

Vice President Hayes requested explanation of how staff is planning to deal with potential flooding, discussion of the concept of stealing of water from the dry side of the mountains, and discussion of the validation studies. Mr. Jeff Mosher, General Manager of SAWPA, responded, and acknowledged the list of considerations.

There would be specific suspension criteria to avoid seeding storms that could possibly result in flooding, Mr. Mosher explained. The program operator has liability insurance, he noted. Vice President Hayes reminded that the December rainstorm wasn't supposed to be bad. Mr. Mosher assured that the way the program is operated, there is a look at weather data to determine hour by hour when to seed or when to cut it short depending on conditions.

Mr. Mosher acknowledged that the "stealing" is a common question. He explained that a storm typically gets, at most, 30 percent of the moisture out of the clouds as rain or snow in an event. Seeding, in terms of moisture from the cloud, adds one percent, a small fraction of the moisture within the cloud. A significant component of the moisture continues with the cloud on to the next community. Clouds are dynamic, he continued. There is not a

significant ability to impact the amount of rain to the down-weather communities, Mr. Mosher assured.

Mr. Mosher addressed validation. He explained the seeding process involves the silver oxide material burned off the ground-based system, with the air currents then pulling the material up into the clouds. In the validation in this region, one potential control area is the San Gabriel Mountains. He explained control areas and target areas and noted that the control and target is based on 20 years or more of precipitation data. Based on that relationship, it is possible to compare moisture received to what would have been. He explained the aggregation of data over four years to improve confidence.

At the end of the day, Mr. Mosher said, information from the pilot study must inform the decision by the SAWPA commissioners as to whether or not this is viable, cost effective, and a good policy decision. Actual data is needed to show the benefits of that, and the validation component must be designed to achieve that.

Director Harrison said he appreciated the point that in a major storm event there would not be any cloud seeding. In a meeting yesterday with Marty Ralph with the Center for Western Weather and Water Extremes (CW3E), he said he asked about his opinion of cloud seeding. Mr. Ralph indicated there is interest and there is a division now focused on a cloud seeding study. He noted that the Yuba Water District is very interested and is looking forward to the results of the CW3E study. Mr. Ralph told Harrison that the key to successful cloud seeding is having someone on the team who knows how to read the right kinds of clouds, as it is more effective in particular clouds. They are moving ahead with studies, Director Harrison said, and indicated he is interested in moving forward with the pilot project.

In response to Vice President Hayes, Mark Norton, Water Resources and Planning Manager at SAWPA, discussed project costs. The original, conservative numbers including a small contingency showed a cost of about $25 per af, but with the validation process and running this over four years, the cost increased to $44 per af. If the Integrated Regional Water Program Grant is obtained, it will cover 50 percent of the cost, Norton explained. This is still an attractive price for water compared to other sources of supply. The cost to Valley District would be $75,000 per year if no grant funding is received, he stated.

Director Longville said she appreciated the per acre-foot cost but emphasized that $75,000 would be from just one member agency. Mr. Norton clarified that the total project costs without the grant would be $1.4 million. Director Longville said she attended Mr. Mosher's presentation at the Special Districts Association where it was encouraged to reach out to other stakeholders in the region. If the grant is not awarded, SAWPA will have to decide

whether to proceed, she noted. She said she is not opposed to the pilot study, as the scientific knowledge is beneficial and is related to the strategic plan.

Director Longville offered the larger context of climate change. It seems foreseeable that effects of climate change will continue to exceed earlier estimates. With more extreme weather events, something may be learned, but it is a moving target. She pointed out that what was previously “normal” is no longer normal, and said she was comfortable with moving forward.

Vice President Hayes pointed out that it seems consensus is to go ahead with a pilot program, but it will begin in November before it will be known if the grant has been received. A decision will need to be made based on the low probability that the grant will not be obtained. Mr. Norton concurred and reminded that the State has encouraged SAWPA to apply via the IRWM as a precipitation enhancement program. This is a regional project, not just for research; it will provide approximately 31,000 af of water supply.

CEO / General Manager Heather Dyer clarified the per acre-foot cost was estimated based on the estimated amount of water gained during the pilot study divided by $1.4 million. She noted that Valley District has historically invested in high quality defensible science. If moving forward, she stressed, then SAWPA should take Mr. Tincher’s suggestions and incorporate high caliber, independent scientists to help, such as the CW3E or the US Geological Survey.

In response to Vice President Hayes regarding validation, Mr. Norton advised that he had reached out to firms that have done research and independent evaluation. Informal proposals and costs have been requested. The best so far is from the Desert Research Institute for a study at a cost of approximately $150,000 to conduct the four-year study. He noted concern with moving into expanded research due to cost increases. Many of the studies mentioned such as SNOWIE cost multi millions just for the research, he cautioned. The challenge will be to attain balance to assure the best minds are evaluating and conducting independent evaluation without overriding the operation costs of the pilot.

In response to President Kielhold, Mr. Norton confirmed the grant is part of the One Water One Watershed (OWOW) program and listed other organizations that have committed support for the project.

President Kielhold asked if this is an attempt to wring a one percent increase out of the atmosphere. Mr. Mosher confirmed it is one percent of all the moisture in the huge cloud. He estimated that it translates into 8,000 af per year. President Kielhold asked about detection of a one percent variation in rainfall within any given storm event, and Mr. Mosher advised

that there are instruments that will be able to assess that type of information. If not cloud seeded, a storm will rain a certain amount. When cloud seeded, the indication is that an additional one percent is able to be pulled out, Mr. Mosher explained.

President Kielhold asked about the identification of the one percent increase as due to the seeding or related to another variable. Mr. Mosher responded that is the purpose of the target and control validation program. The cloud is not measured; the measurement is of the snowfall in the control area, and in the target area.

President Kielhold said he appreciated the comment about the prescription for when the cloud seeding treatment is applied but cautioned that is not usually the determining factor in filing of litigation.

Director Botello requested addition of Consideration #4 - Community benefit and outreach, as had been mentioned by Mr. Mosher in his presentation in Chino. He said he was concerned about costs to ratepayers, contingencies, and the unknown grant funding. Valley District could be into this for four years as a major contributor. He noted that the term “loose science” had been used in SAWPA presentations.

Director Botello asked about the nexus of the pilot program and how it came to the attention of SAWPA. Mr. Mosher explained that SAWPA Commissioner Kelly Rowe brought forward the topic and has looked into it extensively. SAWPA staff brought back the idea of a feasibility study, which was conducted and made findings that cloud seeding was financially and technically viable for the region. The pilot project is now under consideration, and it will then be determined whether this will be a long-term project.

Regarding the equipment for dispersing the silver oxide material, Mr. Norton provided detail in response to Director Botello and assured it is CEQA compliant and all fire danger will be mitigated. He posited that the project will add precipitation and snowpack to the forests and downstream habitat, but Director Botello pointed out that the science is inconclusive.

Director Botello pointed to precipitation in the San Gabriel Mountains. The control includes looking at precipitation over 20 years, Director Botello said, and Mr. Mosher assured that the years in which cloud seeding was done by Los Angeles County would not be included. The relationship would be developed as part of the calibration process, he said, and assured that Orange County is not the focus. All resulting water would stay in the upper watershed. An analysis will be done to attempt to answer the question of who benefits the most.

Director Botello asked about apportionment of costs based on benefit. Mr. Mosher opined that upon analysis of benefit, an agency expecting to receive more of the water may be

more inclined to absorb more of the program costs. He assured Director Botello that he did not think there would be a situation where the program costs could get out of hand: equipment, personnel, and materials are fixed costs.

Mr. Mosher acknowledged cloud seeding may be controversial, but it garners a lot of interest and questions. Outreach is critical, he said. There must be talk about the project and questions answered so people are comfortable and accepting of moving forward with a pilot project. SAWPA has been doing as many presentations as possible to raise awareness and obtain feedback, he said. The outreach program will continue over the four years of the pilot study. Director Botello suggested inclusion of information on water recharge, as that is the purpose of Valley District.

Director Harrison acknowledged Director Botello's points. He emphasized that independent scientists must be brought in to be part of the review.

Vice President Hayes invited public comment. There was none.

Mr. Kelly Rowe offered his background including as a hydrogeologist with ten years of work in the Santa Ana Watershed. He described the equipment to be used in the cloud seeding procedure and explained the dispersion. He noted that studies show about ten percent of the volume of water from the cloud in rain, and seeding adds another one percent of that. A more realistic figure is 15 percent of the volume, he stated.

Although the project is an ideal opportunity that would benefit the whole watershed, Mr. Rowe continued, Valley District would be the primary beneficiary and has the better chance of getting more rainfall out of the system. Presentation of the SNOWIE project of 2016-19 was the first time there was a massive research program including State and federal organizations to analyze the potential for cloud seeding, he noted. The increase in the density of rainfall on radar could be seen, he pointed out. These things would be helpful to do as validation providing evidence of extra rainfall from the cloud seeding program.

Vice President Hayes requested feedback to assist her in determining her vote in June.

Mr. Rowe added that water loss to the ocean may be not relevant; most of that is from atmospheric rivers that cannot be seeded. He is working with staff to better manage water capture and get water into recharge basins.

Director Botello expressed support and reminded that legal counsel should discuss where there is ability to opt out.

Director Harrison and Director Longville also indicated support.

President Kielhold advised that he needs more answers.

Vice President Hayes acknowledged Director Botello's question about the attorney's opinion. She requested that staff ask him to give a presentation at an upcoming Board meeting or workshop.

5.1 Future Business.

Action Item(s): The Board voted to add a presentation by District legal counsel on cloud seeding to a future agenda by the following roll-call vote:

MOVED: Hayes	SECOND: Harrison	APPROVED: 4-1
AYES:	Botello, Harrison, Hayes, Longville	
NOES:	Kielhold	
ABSTAIN:		
ABSENT:	None	

6. Adjournment.

Chair Hayes adjourned the meeting at 3:41 p.m.

Staff Recommendation

Receive and file.

DATE: May 19, 2022

TO: Board of Directors Workshop - Resources

FROM: Bob Tincher, Chief Water Resources Officer/Deputy General Manager
Adekunle Ojo, Manager of Water Resources

SUBJECT: Staff Review of "Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture" by the Pacific Institute

Staff Recommendation

Receive and File

Summary

At this workshop, staff will provide a review of the latest report, "The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture", which was released by the Pacific Institute on April 12, 2022. The report addresses the persistent challenges and vulnerabilities of California's water systems to severe drought and offers a perspective on how California might rethink its water supplies and strategies for the 21st century and beyond.

The report generally recommends that California further reduce urban water use, increase water reuse and increase stormwater capture, strategies that are currently being implemented in our region and are included in the *Upper Santa Ana River Watershed Integrated Regional Urban Water Management Plan*. The general findings are intended to be evaluated on a regional basis. Staff will provide comments on how the findings may be applied in our region.

Background

Founded in 1987, the Pacific Institute is a global, nonpartisan water think tank that combines science-based thought leadership with active outreach to influence local, national, and international efforts to develop sustainable water policies. The Oakland-based organization is known for its work in advancing solutions to the world's most pressing water challenges.

District Strategic Plan Application

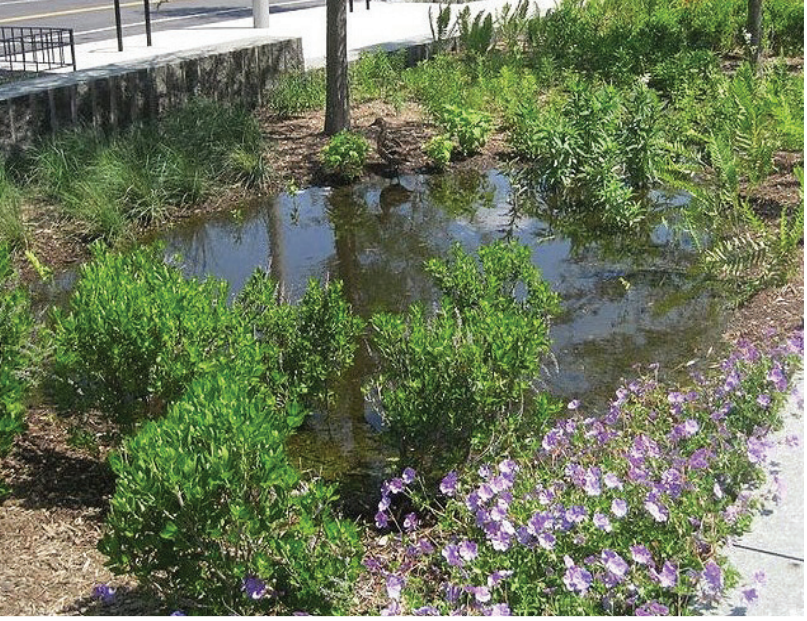
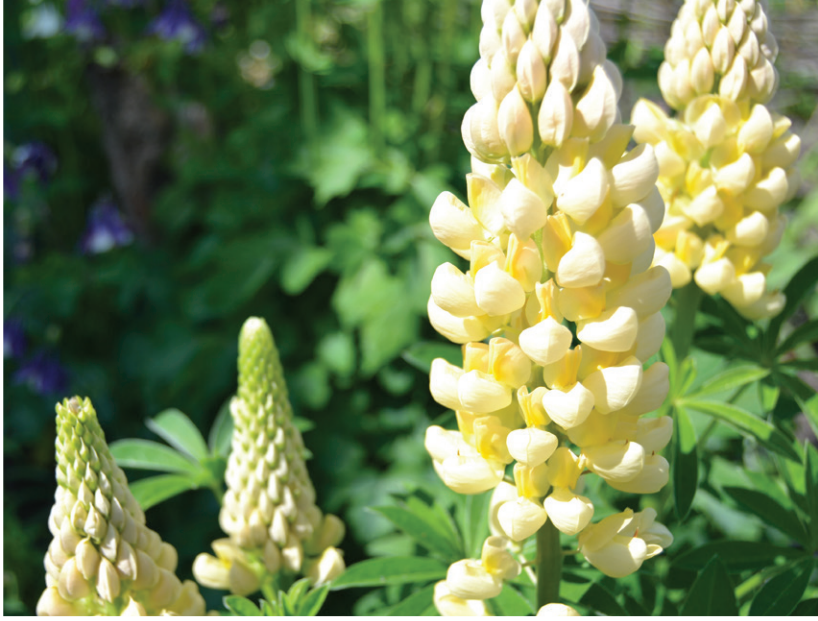
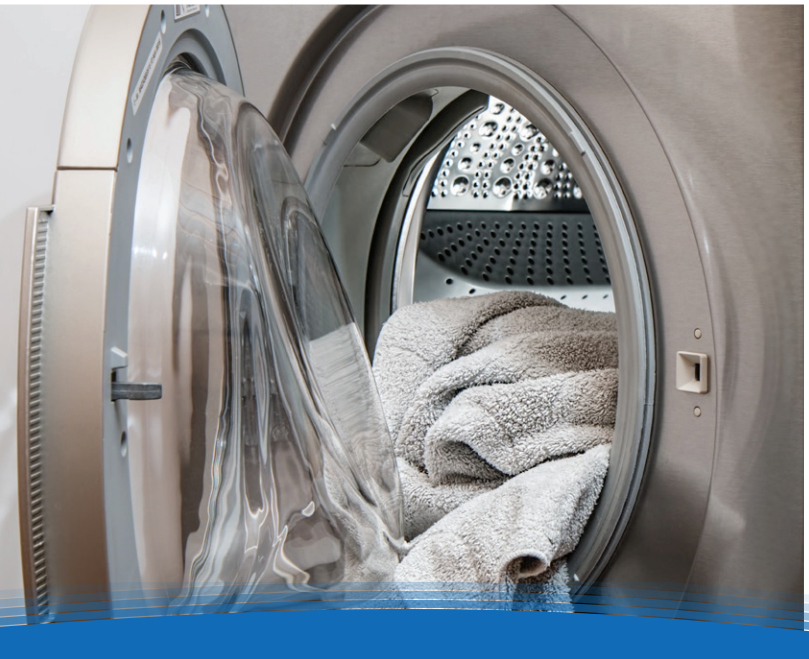
Reviewing this report is consistent with Valley District's mission and vision and the priorities of science-based decision making and delivery cost-effective and integrated solutions.

Fiscal Impact

None

Attachment

1) Executive Summary- The Untapped Potential of California's Urban Water Supply


EXECUTIVE SUMMARY

The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture

Heather Cooley, Anne Thebo, Sonali Abraham
Morgan Shimabuku, Peter Gleick, Sarah Diringer

PACIFIC INSTITUTE

April 2022

The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture

EXECUTIVE SUMMARY

April 2022

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Morgan Shimabuku
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Sarah Diringer

Suggested citation for "The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture": Cooley, Heather, Anne Thebo, Sonali Abraham, Morgan Shimabuku, Peter Gleick, and Sarah Diringer. 2022. "The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture." Oakland, Calif.: Pacific Institute.

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ISBN: 978-1-940148-18-2

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EXECUTIVE SUMMARY

Water is the lifeblood of California, providing for the household needs of nearly 40 million people and supporting one of the most productive agricultural regions in the world, the health and viability of the state's aquatic and terrestrial ecosystems, and an economy that would make it the fifth wealthiest country in the world after the United States, China, Japan, and Germany.

Persistent water challenges, the ongoing severe drought, and the intensifying effects of climate change all highlight the vulnerability of California's water systems, but they also offer a new opportunity to rethink the state's water policies and strategies. The good news is that we are already seeing communities throughout the state rethink water "supply" and "demand." There has been tremendous progress across California in reducing water use through water conservation and efficiency and augmenting local supplies through water reuse and stormwater capture. Without these efforts, our current challenges would be much worse, demands on limited water supplies would be even higher, and ecosystem destruction would be more severe.

In this assessment, we quantify the potential for a range of water strategies in urbanized parts of California to both reduce inefficient and wasteful water uses and expand local water supplies. This assessment finds that urban water-use efficiency improvements could reduce statewide urban water use by 2.0 million to 3.1 million acre-feet per year (AFY). The reuse potential of municipal wastewater is 1.8 million to 2.1 million AFY, and the stormwater capture potential is 580,000 AFY in a dry year to as much as 3.0 million AFY in a wet year. Previous assessments have shown that these efficiency and supply options are more cost effective than traditional – and increasingly hard to implement – options to expand supply. Programs to tap this potential would tremendously help solve California's long-standing water problems.

URBAN WATER EFFICIENCY POTENTIAL

Greater urban water conservation and efficiency can reduce unnecessary and excessive demands for water, save energy, reduce water and wastewater treatment costs, and eliminate the need for costly new infrastructure. Between 2017 and 2019, California's urban water use averaged 6.6 million AFY, far below previous levels. Despite past improvements, California's water efficiency potential remains large. **We estimate that adopting proven technologies and practices could reduce urban water use in California by 2.0 million to 3.1 million AFY, or by 30% to 48%.** Water efficiency opportunities can be found across the state but are highest in the South Coast hydrologic region, followed by the San Francisco Bay and Sacramento River hydrologic regions. Water savings are greatest for the residential sector, followed by the commercial, industrial, and institutional sectors and reducing losses in the water distribution system. Additionally, savings can be found inside and outside but are slightly higher outside homes, businesses, and institutions.

WATER REUSE POTENTIAL

Water reuse is a reliable, local water supply that reduces vulnerability to droughts and other water-supply constraints. It can also provide economic and environmental benefits by reducing energy use, diversions from rivers and streams, and pollution from wastewater discharges. There is a significant opportunity to expand the reuse of municipal wastewater in California. An estimated 728,000 AF of municipal wastewater is already beneficially reused in the state each year. Onsite reuse—including the use of graywater—is also practiced across California, although data are not available to estimate its extent. **We estimate that an additional 1.8 million to 2.1 million AFY of municipal wastewater is available for reuse in California.** Nearly three-quarters of this water is currently being discharged to marine environments and is recognized as a high priority for future reuse projects. Water reuse opportunities can be found across the state but are highest in the South Coast and San Francisco Bay hydrologic regions, the two most populated regions in the state. Continued reductions in indoor per capita use can reduce the amount of water available for reuse, although population growth and increased economic activity could offset those reductions.

URBAN STORMWATER CAPTURE POTENTIAL

As water resources have become increasingly constrained, there is new interest in capturing urban stormwater runoff as a sustainable source of supply, with the added benefits of reducing flooding and protecting surface water quality. While no estimate of current stormwater capture exists, a growing number of communities, including Los Angeles and Fresno, are integrating stormwater into their water supply portfolios. In California, there are substantial opportunities to use stormwater beneficially to recharge groundwater supplies or for direct use in non-potable applications. **We estimate that the urban stormwater capture potential in California ranges from 580,000 AFY in a dry year to 3.0 million AFY in a wet year in urban areas overlying public supply aquifers.** This potential exists across scales—at the community, neighborhood, and even parcel or household scale—each of which will be essential for successfully capturing the full potential of this local water supply.

CONCLUSIONS AND RECOMMENDATIONS

California can fill the gaps between water supply and use with strategies that are technically feasible, cost effective, and compatible with healthy rivers and groundwater basins. Water efficiency options include the adoption of more comprehensive efficiency improvements that allow us to continue to provide the goods and services we want, with less water. New supply options include expanding water reuse and stormwater capture. These alternatives can provide effective drought responses in the near-term, permanent water-supply reliability in the long-term, and other co-benefits for the state. Efforts in these areas have been underway in California for decades, and laudable progress has been made, but much more can be done.

This assessment has identified the untapped potential to expand nontraditional supply options and increase urban water-use efficiency savings in California. This is the first step in tackling California's water problems, but it is also critical to adopt effective policies and programs to capture this potential. Here, we offer recommendations for helping to realize the untapped potential of water efficiency, reuse, and stormwater capture.

Expand Efforts to Improve Water Use Efficiency and Water Loss Control. There are significant opportunities to improve the efficiency of water use in California homes, businesses, and institutions and to reduce losses in water distribution systems. These improvements will make communities more resilient to climate impacts, cut water and energy costs, and provide additional co-benefits. Greater funding, combined with new and greater enforcement of regulations, expanded education and outreach, and additional technical assistance programs are needed to capture this untapped potential.

Expand the Supply and Use of Recycled Water. California has made considerable progress in expanding the reuse of high-quality treated wastewater, but large volumes of municipal wastewater continued to be discharged unused to local waterways, marine and estuarine environments, and land. A range of new actions and policies are needed to expand the supply and use of recycled water.

Increase Efforts to Capture and Use Stormwater. The variability of precipitation in California produces, at times, large volumes of stormwater that could be captured, used, or stored, expanding total water supply. This will require changes in local infrastructure and updated state and local policies and programs.

Improve State and Local Planning to Support Integration of Water and Non-Water Benefits into Water Management and Investment Decisions. Capturing the untapped potential for water efficiency, water reuse, and stormwater capture would benefit from broader improvements in state and local planning. In particular, efforts to incorporate multiple benefits—both water and non-water—into water management and investment decisions can improve a project's financial viability and public acceptance while helping to minimize adverse and unintended consequences.

Support State-Level Data Collection Efforts and Integration Across and Within State Agencies. Data from two large-scale data collection efforts (Electronic Annual Reports and Volumetric Annual Reporting) were key to our analysis of the potential for efficiency and reuse in California. Consistently reported data collected at regular time intervals is an essential component of making informed projections about water use, water availability, and investment needs.

Investigate Research Gaps to Improve Effectiveness of Water Efficiency, Water Reuse, and Stormwater Capture. There remain outstanding scientific questions that must be addressed for effective implementation of these supply options. State agencies, academics, water agencies, and community organizations all have a role to play in filling research gaps.

For the full report, "The Untapped Potential of California's Urban Water Supply: Water Efficiency, Water Reuse, and Stormwater Capture," please visit: https://pacinst.org/publication/california-urban-water-supply-potential-2022

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ISBN: 978-1-940148-18-2

DATE: May 19, 2022

TO: Board of Directors Workshop - Resources

FROM: Bob Tincher, Deputy General Manager/Chief Water Resources Officer
Adekunle Ojo, Water Resources Manager
Shavonne Turner, Water Conservation Program Manager

SUBJECT: Consider Purchasing Up to 5,000 Acre-Feet of Water Through a Demand Management/Water Conservation Program in Fiscal Year 2022-23

Staff Recommendation

Authorize staff to budget $895,000 in the Fiscal Year 2022-23 General Fund Budget to purchase up to 5,000 acre-feet through a Valley District Demand Management/Water Conservation Program.

Summary

As a wholesale water agency with no retail water customers, Valley District is not responsible for achieving water conservation directly but is responsible for helping the retail agencies within its boundary achieve their water conservation goals. With this in mind, Staff has developed a Demand Management (i.e. water conservation) program for fiscal year 2022-23 that uses a similar approach to Valley District's Local Resources Investment Program (LRIP) by paying retail water agencies in our service area $179 for every acre-foot of water they conserve. The resulting program is a forward-thinking approach that will provide a financial incentive and technical resources to help the retail agencies administer effective water conservation programs that save water. This approach provides retail agencies the flexibility and choice to implement a wide range of water efficiency incentives, behavior-based solutions, and technology solutions that leads to sustainable water demand. Staff will provide additional details at the Board meeting on how this purchase will be implemented.

Background

Demand management through conservation is a core strategy in the Upper Santa Ana River Integrated Regional Urban Water Management Plan. The region's water demand has been declining since 2009 due, in part, to the investment in water conservation programs. All the retail agencies reduced their water demand and per capita water use by more than 20% in compliance

with the 20x2020 mandate of the Water Conservation Act of 2009. Demand further reduced during the last statewide drought in 2015 and the region has maintained this level of conservation. Continuous conservation messaging, along with active conservation programs, passive and code-based conservation, and price-effect conservation have all contributed to our region maintaining its water demand at sustainable levels.

Staff is asking the Board to consider providing a financial incentive to the retail agencies for reducing their demand by up to 5,000 acre-feet of water through this proposed water conservation program. This amount of water, if left in the basin, equals the amount of our State Water Project allocation this year. This amount is believed to be attainable by reducing outdoor water use in the region by about 5%, compared to 2020 water use. This proposed program has been reviewed and approved by the BTAC Water Conservation Subcommittee.

During the workshop, Staff will provide an overview of how this new approach to water conservation would work and how it aligns with the LRIP incentives we have provided to other water supply projects. We will also discuss how the new program will benefit our retail agencies while also supporting the District's strategic priority to be cost effective and maximize benefits for our ratepayers.

District Strategic Plan Application

This investment aligns with Valley District's mission, vision, and priorities to be resilient and integrated. It also aligns with the strategies to proactively manage a diverse, adaptable water supply portfolio and build trust by being a collaborative and resourceful partner.

Fiscal Impact

The total implementation cost for saving up to 5,000 acre-feet under this water conservation program is $895,000 from the General Fund. If retail agencies exceed this goal, staff will come back to the Board to consider buying additional water savings.