BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING

September 20, 2023

Correspondence and media coverage of interest between July 19, 2023 and September 17, 2023

Correspondence

From: Paul J. Yoder, Legislative Advocate, SYASL Partners
To: The Hon. Ben Allen, California State Senate
Date: September 12, 2023
Subject: SB 389 (Allen) State Water Resources Control Board: investigation of water right – Removal of Opposition

From: Molly Culton, Chapter Organizing Manager, Sierra Club California
Peter Drekmeier, Policy Director, Tuolumne River Trust
Scott Artis, Executive Director, Golden State Salmon Association
Chris Shutes, Executive Director, California Sportfishing Protection Alliance
Chris Cutrano, Chapter Chair, Sierra Club, SF Bay Chapter
Kristina Pappas, President, San Francisco League of Conservation Voters
To: President Newsha Ajami and Commissioners, SFPUC
Date: August 31, 2023
Subject: Comments on SFPUC's Draft Alternative Water Supply Plan

Press Release

From: ACWA News
Date: July 24, 2023
Press Release: Two Bills Targeting Water Rights Fail to Advance; ACWA Removes Opposition to Amended Third Bill

Water Supply Conditions:

Date: September 15, 2023
Source: San Francisco Chronicle
Article: El Niño typically means wet California winters. These charts show what might be in store

Date: September 14, 2023
Source: San Francisco Chronicle
Article: El Niño just ramped up. What does it mean for California weather?

Date: September 7, 2023
Source: Fox 40
Article: California's reservoirs above historic averages as fall approaches

Water Policy:

Date: September 17, 2023
Source: Maven's Notebook
Article: Water rights reformers scored only a minor victory in the Legislature

Water Policy, cont'd.:

Date:	September 15, 2023
Source:	SJV Water
Article:	Will a pending water rights bill on Gov. Newsom's desk be a game changer in California water? It depends
Date:	September 13, 2023
Source:	CalMatters
Article:	California lawmakers move to ban irrigation of some decorative lawns
Date:	September 13, 2023
Source:	LA Times
Article:	California is moving to outlaw watering some grass that's purely decorative
Date:	September 12, 2023
Source:	Maven's Notebook
Article:	BAY DELTA PLAN: State Water Board adopts initial biological goals for the Lower San Joaquin River
Date:	September 9, 2023
Source:	LA Times
Article:	Lawmakers approve plan to strengthen oversight of California water rights
Date:	September 7, 2023
Source:	Western Water
Article:	New California Law Bolsters Groundwater Recharge as Strategic Defense Against Climate Change
Date:	August 31, 2023
Source:	Mercury News
Article:	New permanent water conservation rules are coming to California — see how your city will be affected
Date:	August 31, 2023
Source:	Marin Independent Journal
Article:	California regulators propose new water conservation rules
Date:	August 9, 2023
Source:	Modesto Bee
Article:	MID will sell excess river water to farmers who rely on wells. Price is more than Expected
Date:	August 8, 2023
Source:	Modesto Bee
Article:	MID did well to raise water sales price. But that's about all they got right
Date:	July 25, 2023
Source:	The Valley Citizen
Article:	Modesto Irrigation District Sales Proposal Roils the Waters
Date:	July 19, 2023
Source:	New York Times
Opinion:	My City Has Run Out of Fresh Water. Will Your City Be Next?

Water Infrastructure:

Date: September 14, 2023
Source: SF Gate
Article: Officials Hold Ribbon-Cutting For New Advanced Groundwater Treatment Facility

Date: September 7, 2023
Source: California Department of Water Resources
Article: Why Modernizing Infrastructure Will Benefit Our Future Water Supply

Date: September 5, 2023
Source: Water Finance and Management
Article: California water purification facility marks major milestone

Date: August 22, 2023
Source: KQED
Article: Is Water Recycling the Answer to the Bay Area's Drought Woes, Algae Blooms?

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September 12, 2023

The Honorable Ben Allen
California State Seante
1021 O Street, Suite 6610
Sacramento, CA 95814

Re: SB 389 (Allen) State Water Resources Control Board: investigation of water right – Removal of Opposition

Dear Senator Allen,

I write to inform you that San Francisco Mayor London Breed has removed her opposition to SB 389, as amended on August 31, 2023.

Sincerely,

Paul J. Yoder
Legislative Advocate

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August 31, 2023

President Newsha Ajami and Commissioners
San Francisco Public Utilities Commission
525 Golden Gate Ave.
San Francisco, CA 94102
Via Email

Re: Comments on the SFPUC's Draft Alternative Water Supply Plan.

Dear President Ajami and Commissioners:

The Sierra Club, Tuolumne River Trust, Golden State Salmon Association, San Francisco League of Conservation Voters and California Sportfishing Protection Alliance appreciate the opportunity to comment on the SFPUC's draft Alternative Water Supply Plan (AWS Plan). While we appreciate that the SFPUC is undertaking this exercise, we think the Plan has a lot of room for improvement. Of utmost concern is the lack of a robust assessment of how much alternative water supply the SFPUC might reasonably need to develop.

I. The Plan Must Include a Sensitivity Analysis, and Model Alternative Scenarios

The AWS Plan states, "Identifying future demand is critical to planning for long-term supply reliability of the RWS." (p. 30) Yet it fails to include alternative scenarios that consider a more realistic drought planning horizon and reasonable demand projections.

It goes on to say:

> Successful implementation of the AWS Program requires a balance between securing future reliability and maintaining affordability, both of which are critical SFPUC goals. The AWS Program must focus on implementing water supply projects that will address long-term customer demands and obligations without over-building or overcommitting capital funding. (p. 57)

This comment emphasizes the importance of not overinvesting in AWS that will not be needed, but the Plan fails to accurately identify future water supply needs. The Plan acknowledges that changes in assumptions related to the Design Drought and projected water demand would have a profound impact on the SFPUC's water supply deficit, yet there is no modeling of how such changes would affect "Demands." It states:

> The SFPUC relies on planning assumptions and modeling to project future water availability in dry-year conditions. ***The SFPUC design drought and adopted rationing policy…are assumptions that affect the estimates of water availability during dry-year conditions. Changes to the assumptions around the design drought or rationing would change total system yield estimates***. For the purposes of this AWS Plan, these planning assumptions are being held constant as part of the SFPUC planning methodology for projecting future water supplies. This allows a direct comparison to the planning that was done for the WSIP program. (p. 39)

In BAWSCA's 2022 "Regional Water Demand and Conservation Projections Update,"[1] a sensitivity analysis was included that looked at slower population growth.[2] The SFPUC should include a similar sensitivity analysis in the AWS Plan, especially considering that the California Department of Finance (CDOF) recently reduced its population growth projections, predicting population declines in both San Francisco and San Mateo Counties.[3]

Despite raising concerns about overinvesting in expensive alternative water supplies, the AWS Plan fails to consider alternative scenarios, such as reducing the length of the Design Drought or using CDOF population growth projections, both of which would reduce "Demands" significantly. The Commission should be informed on how these changes would impact the perceived water supply deficit.

Recommendations:

1) Direct staff to model "Demands" (water supply deficit) using a 7.5-year Design Drought.
2) Direct staff to model "Demands" using CDOF population growth projections, similar to BAWSCA's sensitivity analysis (see Attachment A).
3) Direct staff to model "Demands" using a combination of a 7.5-year Design Drought and CDOF population growth projections.
4) Amend Figure 3-4 (Obligations and Demands) to include a third column titled "Lower Demands" that is based on a 7.5-year Design Drought and CDOF population growth projections. Rename the current "Demands" column "Upper Demands."

II. Why It's Important To Do This Right?

Alternative water supplies can be expensive, so investing wisely is important. According to the AWS Plan:

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[1] BAWSCA Regional Water Demand and Conservation Projects Update, December 5, 2022 – https://bawsca.org/uploads/userfiles/files/BAWSCA%202022%20Demand%20Study%20Update%20Final%20Report(1).pdf

[2] Please see Attachment A.

[3] *San Francisco exodus: City may never recover population loss as other parts of the Bay Area grow*, San Francisco Chronicle, August 9, 2023.

> Based on preliminary estimates, the capital investment associated with the suite of regional AWS Projects could be on the order of $4 billion to $10 billion (escalated to the mid-point of construction) over the planning horizon, varying largely based on the size of the expansion of Calaveras Reservoir and the preferred conveyance facilities.[4] (p. 124)

The amount of alternative water supplies the AWS Plan cites as needed – 92 million gallons per day (mgd) – is inflated and would be extremely expensive. On the low end, at $3,000 per acre foot, developing 92 mgd would cost $300 million per year, which would have to be passed on to ratepayers. As you know, ratepayers (especially low income) are already heavily stressed by water and wastewater rates.

Even without these AWS investments, water and wastewater rates are expected to increase substantially in coming years, as demonstrated by the following slide presented at the February 14, 2023 budget hearing.

San Francisco Water Power Sewer

Near-Term Rate Increases

Enterprise	FY 2023-24	FY 2024-25	FY 2025-26	10-Year Annual Avg.
Retail Water	5.0%	5.0%	5.0%	**3.9%**
Wholesale Water	11.6%	0.0%	0.0%	**2.5%**
Wastewater	9.0%	9.0%	9.0%	**8.5%**
Hetch Hetchy Power	14.0%	10.0%	9.0%	**6.7%**
CleanPowerSF Generation	15.0%	0.0%	0.0%	**1.1%**

Hetch Hetchy Power rates shown are for retail, non-municipal customers
CleanPowerSF rate increase is only the generation portion of the bill; the FY 2023-24 increase in the total bill, including PG&E delivery charges, is approximately 5%

- Hetch Hetchy Power rates were approved in May 2022
- Other rates will be brought to the Commission in May
  - Wholesale water rates updated annually per contract
  - Three years of retail water and wastewater rates will be proposed from ongoing 2023 rate study
  - CleanPowerSF rates are currently being adopted annually to respond to power market price volatility

The AWS Plan would increase rates further. The first phase alone (2% to 5% of the full implementation cost)[5] would raise rates as follows:

> AWS staff have worked with the Finance team to evaluate the rate impact of adding the AWS Project and Programmatic recommendations in this Plan, which would add

[4] Note that the $4 billion to $10 billion range is for capital investments only, and does not include operations and maintenance. Table 5-1 should include at least a range of O&M costs to give a better sense of the full cost of the projects.
[5] The first phase of the AWS Plan would cost $209 million. Full implementation would cost $4 billion to $10 billion.

> approximately $209 million in capital and operating expenses between FY 2025 and 2034…The financial modeling showed that retail rates would need to increase by about 0.9% above the current projected rate plan by FY 2033 and wholesale rates would increase by 7.6% in the same time period…Rate impacts would also extend past the 10-year timeframe analyzed. (pp. 124 & 125)

Higher rates will continue to send a strong price signal to consumers, leading them to use water more efficiently in order to reduce their bills. At the July 16, 2021 SFPUC workshop, staff stated that in response to a 10% rate increase, single-family demand decreases 1.4%, multi-family demand decreases 2%, and commercial demand decreases between 1.4% and 3%.[6]

It should be of great concern to the Commission that if the AWS Plan is implemented, water rates will skyrocket, driving a dramatic increase in conservation. There would be more water infrastructure to pay for, but less demand to cover the costs. This would exacerbate the "death spiral" – rates increase to cover fixed costs, consumers use less water, rates increase again, and the economic situation continues to worsen.

III. Impacts on Water Supply

The AWS Plan erroneously states:

> The most pronounced driver affecting water availability is the potential implementation of the 2018 Amendment to the State Water Resources Control Board's San Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan. (p. XII)

According to the SFPUC's $743,000 Long-Term Vulnerability Assessment (LTVA), this statement is incorrect. The LTVA states:

> Climate change is not the single most important driver of vulnerability for the RWS. Under current RWS infrastructure conditions, either state-amended WQCP [Bay Delta Plan] for additional IFR [instream flow requirement] on the Tuolumne River or an increase in demand by 15% have significant impacts on the RWS performance that are equivalent to a decrease in mean annual precipitation of around 15%. (LTVA, p. 250)

In other words, the Bay Delta Plan instream flow requirement is equivalent to either a 15% increase in demand, or a 15% decrease in precipitation.

RWS demand has been under 200 mgd for the past nine years. Assuming demand remains flat at around 200 mgd, the 244 mgd projection for 2045 in the AWS Plan would increase demand

[6] SFPUC workshop on Water Demand Projections and Demand Management, July 16, 2021 – https://sanfrancisco.granicus.com/player/clip/38991?view_id=22&redirect=true&h=28ea534dd1acf1e58ebb0321a7db1492 (22:40).

by 22%. This inflated demand projection is the most pronounced driver affecting water availability.

The baseline demand figure used in the LTVA is 227 mgd, which is 15% greater than what RWS demand has been for the past nine years. This means that results included in the LTVA based on the baseline demand figure are essentially incorporating the Bay Delta Plan instream flow requirement into actual current demand. Furthermore, most of the analysis in the LTVA is based on 240 mgd demand, which is 20% greater than 200 mgd demand. The LTVA suggests there is an extremely small chance the SFPUC would run out of water unless water demand grows substantially, which is very unlikely to happen (see comments on demand projections below).

IV. The AWS Plan Needs to Address the Design Drought

Despite numerous references to "climate uncertainty," the AWS Plan dedicates a mere three paragraphs to the LTVA, with no citations to justify the Design Drought. The AWS states, "Impacts related to climate change are not currently quantified in the AWS planning efforts;" (p. 39)

Removing one year from the Design Drought, which is justified by the LTVA, would have a big impact on the perceived need to invest in expensive alternative water supplies. Removing the final year from the Design Drought would reduce "Demands" in the AWS Plan by about 25 mgd. This would reduce costs (passed on to ratepayers) by at least $90 million per year – an opportunity that is certainly worth exploring.

The LTVA found that the Design Drought is extremely unlikely to occur, yet the SFPUC continues to use it as its primary planning tool. The LTVA included return periods (likelihood of occurrence) for the known droughts, but inexplicably did not include a return period for the Design Drought. A Public Records Act request uncovered a document revealing that the study authors had produced a return period for the Design Drought of once-in-25,000 years,[7] but this information was not included in the final report. Information that was included in the final report suggests the Design Drought is even less likely to occur. We addressed this at the August 23, 2022 SFPUC workshop, and SFPUC staff had no response. Please review the workshop video.

The Design Drought was conceived following the 1987-92 drought of record. It was arbitrary and has never been backed up by supporting evidence. Much has changed since the 1987-92 drought. For example:

- Heading into the drought, water demand was at an all-time high of 293 mgd. It has been under 200 mgd for the past nine years.
- The SFPUC adopted its Water First Policy, prioritizing water supply over hydropower generation. According to an SFPUC presentation, precipitation in 1976/77 was 39.14

[7] *Hydrological Drought Frequency Analysis for the Upper Tuolumne River*, December 8, 2020.

inches, and was similar in 2020/21 at 39.28 inches. Yet, while total system storage was 563,298 acre feet on June 10, 1977, it was substantially higher at 917,455 acre feet on the same date in 2021.

- Cherry Lake, the SFPUC's second largest reservoir in the Tuolumne watershed (3/4 the capacity of Hetch Hetchy) was drained for maintenance in 1989, and that storage was lost.

The LTVA states, "According to climate projections and expert elicitations, there is a central tendency of warming of +2°C and +4°C by 2040 and 2070 (Representative Concentration Pathway [RCP] 8.5), respectively, with no clear direction of change in mean annual precipitation over the planning horizon." (LTVA, p. xxii)

In other words, we might expect wetter years and drier years, but on average precipitation isn't expected to change much. In fact, the report suggests that the Hetch Hetchy watershed is more likely to experience slightly more precipitation in the future. Interestingly, earlier runoff projected by the study would likely benefit the SFPUC's water entitlements based on how water rights were established on the Tuolumne River under the Raker Act. Based on the study's projection that runoff will likely come three weeks earlier by 2070, if the Design Drought were to occur, the SFPUC would pick up an additional year's-worth of water over the course of the 8.5-year drought. We explained this at the August 23, 2022 workshop.

V. The AWS Plan Needs to Address Inflated Water Demand Projections

The issue of inflated water demand projections has been raised many times, and was addressed at the July 16, 2021 workshop. AGM Steve Ritchie stated:

> I want to make sure it's clear that the Urban Water Management Plan is not intended to be an actual projection of demands, because plan developments may or may not occur or may be delayed for a variety of reasons…and the projections presented in the 2020 Urban Water Management Plan are closer to an outside envelope of what the demands may be in 2045 rather than actual demands.

The accuracy of water demand projections was again addressed in an SFPUC report titled "Water Enterprise and Finance Bureau Water Demand Projections," dated July 5, 2022. The report stated:

> It [UWMP Act] was not intended to establish the projected water demands that would be used for all operational and planning purposes…the projections represent an outside bound of whatever demand will occur in the next 25 years...These demands will likely always be greater than actual demands because not all developments materialize, or they materialize slower than projected.

And:

> By contrast, for the purpose of financial planning and for short term water system management, we estimate the demand that we are likely to experience. For budgeting and rate setting we use demand projections that are as close to actual as we can make them.

The report included graphs showing that both the SFPUC Water Enterprise and Finance Bureau have historically over-projected demand, but Finance has always been closer to the actuals. The Finance Bureau currently projects sales will remain flat for at least the next decade.

The primary driver for current inflated water demand projections is inflated population growth projections. This issue came up at the July 16, 2021 workshop, to which then SFPUC President Anson Moran gave the following directive:

> …we be given information about the differences between Department of Finance and the Plan Bay Area and what those differences really are, and within that, what portion of that reflects legal mandates such as affordable housing targets and what is more aspirational.

After a ninth month delay, staff finally provided two paragraphs explaining how the CDOF and ABAG (Plan Bay Area) determine population growth projections, but ignored the question raised by President Moran.[8]

The latest CDOF projections (July 2023) suggest that the populations of San Francisco and San Mateo Counties will likely decline over the coming decades.

VI. SFPUC "Rationing Methodology" Vs. "Rationing Policy"

The AWS Plan should explain the difference between the SFPUC's "rationing methodology" and "rationing policy." The rationing methodology is explained in Appendix K of the 2020 Urban Water Management Plan as follows:

> In applying its water supply planning methodology, the SFPUC performs an initial model simulation of the system for the design drought sequence and then reviews the ability of the system to deliver water to the service area through the entire design drought sequence. If the projected water supply runs out before the end of the design drought sequence in the initial model run, system-wide water use reduction is added and the scenario is re-run. This process continues iteratively until a model simulation of the system is achieved in which the water supply in storage at the end of the design drought sequence is brought to the system "dead pool," where no additional storage is available for delivery (currently simulated as 96,775 acre-feet). Drawing system storage down to

[8] *Department of Finance and Plan Bay Area Projections*, email from AGM Steve Ritchie to Anson Moran dated April 14, 2022 (included in the April 26, 2022 SFPUC correspondence log).

> the dead pool without going below it indicates that water supply delivery, including the adjusted amount of water use, is maintained through the design drought sequence.

The rationing methodology was not used to produce the 122 mgd of "Obligations" nor the 92 mgd of "Demands" cited in the AWS Plan. Instead, the SFPUC used rationing figures produced in 2008 for the WSIP using the rationing methodology. Back then, what staff now refers to as the "rationing policy" conformed with the rationing methodology. Now that the State Water Board adopted the Bay Delta Plan, it no longer does. Staff should have rerun the numbers using the rationing methodology, which is the SFPUC's true rationing policy. Doing so would require rationing to begin earlier in the Design Drought and increase more rapidly.

SFPUC staff explained the "rationing policy" as follows:

> The estimate of SFPUC water supply without Bay Delta Plan contributions is 257 MGD of total yield, which is the sum of the system firm yield of 227 MGD and the volume associated with the rationing policy established for the WSIP program. That rationing policy includes 3 years of 10% rationing and 3.5 years of 20% rationing over the 8.5-year design drought. The volume associated with the rationing policy changes as the firm yield changes, as noted above. In this case, the volume of the rationing policy is 30 MGD. That gives a total yield (firm yield + rationing) equal to 227+30 or 257 MGD.[9]

In other words, the rationing figures used to determine "Demands" in the AWS Plan assume no rationing in Years 1 and 2 of the Design Drought, 10% rationing in Years 3 to 5, and 20% rationing in Years 6 to 8.5.

The rationing numbers and timing that was determined necessary to manage the Design Drought at the time the WSIP was approved would fail to enable the SFPUC to manage the Design Drought under the Bay Delta Plan. In fact, the SFPUC has argued it could not manage the Bay Delta Plan flows without exceeding its Level of Service Goal of limiting rationing to no more than 20%.

It is clear that starting rationing at 10% in Year 3, and not increasing it to 20% until Year 6 is not how the SFPUC would impose rationing if the Bay Delta Plan is implemented. Imposing rationing earlier and at higher levels would reduce "Demands" substantially. Starting 20% rationing in Year 3 rather than Year 6 would have an incremental favorable impact on water available in storage, which should be factored when considering alternative water supplies.

The AWS Plan acknowledges this in a hidden way. Figure 3-3 includes "Estimated Contribution of Rationing," which is another way of saying "using the SFPUC's rationing methodology." The 81 mgd "Demands" cited in Figure 3-3 should be the upper demand used in the AWS Plan, saving at least $36 million per year in unnecessary investments.

[9] Email from Matt Moses (SFPUC) to Peter Drekmeier (TRT), October 26, 2022.

VII. Alternative Water Supply Investments

As discussed above, we believe that, particularly with a modest adjustment to the Design Drought and the use of realistic demand projections, even with full implementation of the Bay Delta Plan, the SFPUC could maintain a highly reliable water supply. Under this approach, the SFPUC would not face the need for a large scale investment in alternative water supplies.

The AWS Plan, however, follows a different path with regard to the Design Drought and demand projections. We recommend that the SFPUC develop multiple scenarios for analysis in this document. At one end, this should include the assumptions we have suggested regarding the Design Drought and demand projections. At the other end, if the SFPUC choses to use higher demand projections, that assumption should be paired with a greater investment in alternative water supplies. For example:

<u>Denitrification and Direct Potable Reuse</u>

It is likely that in coming years Bay Area wastewater treatment plants will be required to reduce nutrient discharges into the Bay through investments in denitrification. At the same time, the State Water Board is developing regulations for direct potable reuse. We believe water agencies, particularly the SFPUC, are presented with an important opportunity to develop a cost-effective solution to two problems – excessive nutrient discharges and ensuring long-term reliable water supplies. We urge the SFPUC to include, as needed in the scenario approach discussed above, significant investments in purified water and denitrification.

On August 21, 2023, the San Jose Mercury News published an article titled "Fighting Future 'Red Tides' in San Francisco Bay." San Francisco Bay suffered a significant harmful algal bloom (HAB) in August 2022, killing thousands of fish and endangering people and their pets. A second less severe bloom occurred in July 2023.

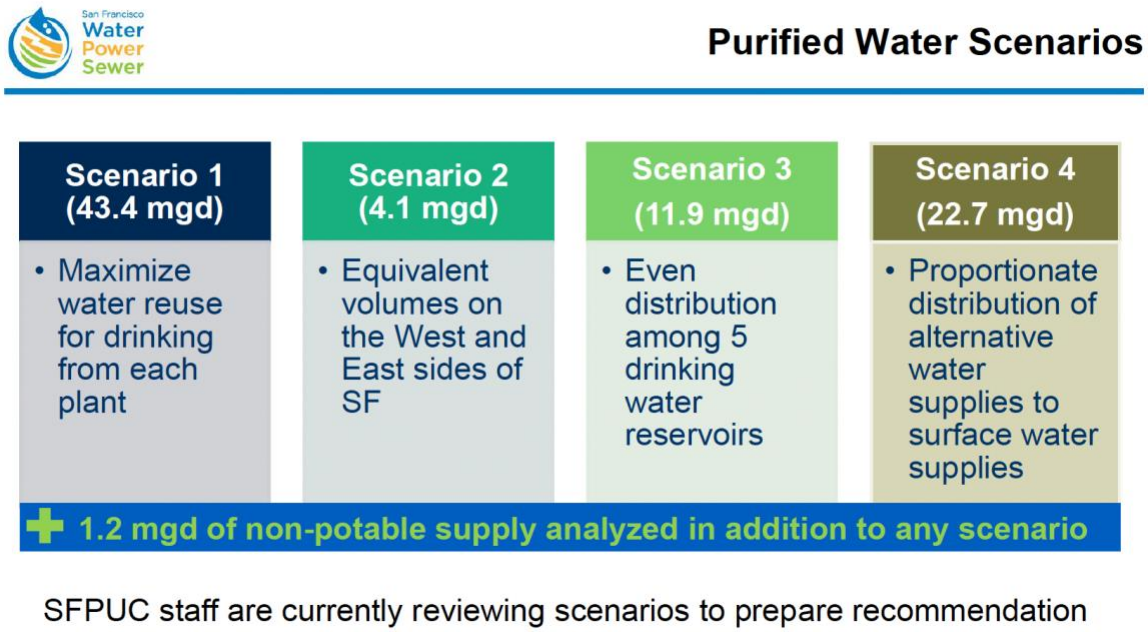
In response, Eileen White, Executive Director of the San Francisco Bay Water Quality Control Board (SF Bay Water Board), is quoted, "The science is telling us that we need to reduce nutrient loads as quickly as possible. What has happened is a game changer."

San Francisco's discharges into San Francisco Bay are responsible for 20% of the nutrient loading. The Mercury News article states that San Francisco and the East Bay Municipal Utilities District (EBMUD) are running behind other municipalities in dealing with this problem. The article also states that some of the South Bay agencies have reduced nitrogen releases by about 85% from previous levels. As a major contributor of nutrient pollution, the SFPUC should take the lead in solving this problem. The AWS Plan should be amended to specifically make this a priority goal.

As noted in the Mercury News article, some of the newer technologies for reducing nutrients do not always result in available water. The SFPUC should avoid using those technologies unless

they are proven to be very cost-effective on a short-term basis. The long-term plan should be a combination of reducing nutrient loading and water recycling and reuse.

An SFPUC presentation on the "San Francisco Purified Water Opportunities Study" (Carollo, May 2022) included the following slide. Despite mentioning that staff were preparing a recommendation, it is not included in the AWS Plan. This is a lost opportunity.



SFPUC staff are currently reviewing scenarios to prepare recommendation

Collaboration with the Irrigation Districts on Groundwater Banking

Implementation of the Sustainable Groundwater Management Act (SGMA) is leading Central Valley water agencies to invest in significant groundwater recharge programs. Implementing these programs on a large scale will be expensive, and may lead the Modesto and Turlock Irrigation Districts to be receptive to collaborating with the SFPUC. We continue to urge the SFPUC to explore a conjunctive use partnership in Stanislaus County that could assist with SGMA implementation while providing the SFPUC with additional storage and reliability benefits.

Collaboration with the Irrigation Districts on More Efficient Water Delivery

Similar to groundwater banking, the SFPUC could partner with the Irrigation Districts on developing pressurized water systems that enable more efficient delivery of water to farms. The SFPUC could fund the infrastructure for a share in the savings. Conserving agricultural irrigation water is far less expensive than developing alternative water supplies in the Bay Area, and the opportunity is huge. For example, a pilot project implemented by the South San Joaquin Irrigation District installed a pressurized water system on 2,000 acres of farmland that decreased water use by 30% while increasing crop yield by 30%.

For the above water supply scenarios, we recommend the following:

- The document's scenarios should explicitly pair higher growth assumptions with higher investments in alternative water supplies.
- The document should include a scenario that would include ambitious direct potable reuse and denitrification of wastewater effluent in the service area.
- The document should include the potential for a conjunctive use program partnership between the SFPUC and the Irrigation Districts, as well as an analysis of the potential to partner on water efficient delivery to farms.

VIII. Conclusion

In order to greatly improve the AWS Plan, we recommend the following:

1) Direct staff to model "Demands" using a 7.5-year Design Drought.
2) Direct staff to model "Demands" using CDOF population growth projections.
3) Direct staff to model "Demands" using a combination of a 7.5-year Design Drought and CDOF population growth projections.
4) Amend Figure 3-4 (Obligations and Demands) to include a third column titled "Lower Demands" that is based on a 7.5-year Design Drought and CDOF population growth projections. Rename the current "Demands" column "Upper Demands."
5) Pair higher growth assumptions with higher investments in alternative water supplies, specifically direct potable reuse and denitrification, groundwater banking in Stanislaus County, and collaboration with the Irrigation Districts on water delivery efficiency.

Thank you for the opportunity to share our thoughts and recommendations.

Sincerely,

Molly Culton
Chapter Organizing Manager
Sierra Club California

Peter Drekmeier
Policy Director
Tuolumne River Trust

Scott Artis
Executive Director
Golden State Salmon Association

Chris Shutes
Executive Director
California Sportfishing Protection Alliance

Chance Cutrano
Chapter Chair
Sierra Club, SF Bay Chapter

Kristina Pappas
President
San Francisco League of Conservation Voters

CC: San Francisco Board of Supervisors
San Francisco Capital Planning Committee
BAWSCA Board of Directors
SFPUC Citizens Advisory Committee

Please scroll down for Attachment A.

Attachment A – BAWSCA's Water Demand Sensitivity Analysis

BAWSCA's 2022 Regional Water Demand and Conservation Projections Update[10] assessed how different factors affect demand projections. The study looked at alternative future scenarios based on:

- Population and jobs growth
- Housing density
- Water rates
- Water conservation
- Climate change

Scenarios A through E are summarized in the following table.

Table 6-6. Variables Included in Scenarios A Through E

Variable	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
Population and Economic Growth	1.1% Pop 1.0% Job	0.84% Pop 0.74% Job	1.1% Pop 1.0% Job	0.84% Pop 0.74% Job	0.52% Pop 0.42% Job
Housing Density	Continue historical 2015–2020 patterns	10% more MF, 10% less SF	15% more MF, 15% less SF	Continue historical 2015–2020 patterns	10% more MF, 10% less SF
Long-Term Climate Change	1.6°F	1.6°F	2.2°F	2.2°F	2.2°F
Water Rates	0% rate increase above CPI	1.8% rate increase above CPI	2.3% rate increase above CPI	2.3% rate increase above CPI	2.3% rate increase above CPI
Water Conservation	0.5% annual GPCD reduction	0.5% annual GPCD reduction	0.625% annual GPCD reduction	0.5% annual GPCD reduction	0.625% annual GPCD reduction
Seasonal Weather	Included for all scenarios to set baseline demand				
Economic Cycles	Included for all scenarios to set baseline demand				

Among other assumptions, Scenario E used California Department of Finance population growth projections (prior to the recently released numbers). Scenario E is presented in the following table.

[10] BAWSCA Regional Water Demand and Conservation Projections Update, December 2022 – https://bawsca.org/uploads/userfiles/files/BAWSCA%202022%20Demand%20Study%20Update%20Final%20Report(1).pdf

Table 6-5. Basis for Projection in Scenario E

Scenario E				
Variable		**Basis for Projection**		
1. Population and Economic Growth	Annual growth rate for future population and jobs	Population: 0.52% (DOF) Jobs: 0.42% (DOF)	0.84% (Historical) 0.74% (Historical)	1.1% (ABAG) 1.0% (ABAG)
2. Housing Density	New housing built (at retail level through 2045)	Continued recent (2015-2020) patterns (% SF, % MF)	Increased density in future (10% more MF, 10% less SF)	Increased density in future (15% more MF, 15% less SF)
3. Long-Term Climate Change	°F warming	1.6°F RCP4.5: global CO2 emissions peak by 2045		2.2°F RCP8.5: global CO_2 emissions continue to rise through 21st century
4. Water Rates	Future increase to individual BAWSCA agency water rates above CPI	0%	1.8%	2.3% (75% rate increase by 2045)
5. Conservation	% Annual Demand Reduction	0.5% (Programs selected in BAWSCA's 2020 Demand Study to meet anticipated water use targets)		0.625% (Assuming agencies achieve an additional 25% savings beyond anticipated water use targets)
6. Seasonal Weather **7. Economic Cycles**	Applied to all scenarios to set baseline demand (Normalizes demand for seasonal weather fluctuations and short-term economic cycles)			

The table below shows projected water demand for Scenarios A through E. Note that under Scenario E, BAWSCA's total water demand in 2045 is projected to be 204 million gallons per day (mgd). To put this in perspective, BAWSCA's total water use in FY 2020/21 was 205.4 mgd.[11] Note that these figures are for total BAWSCA demand, including water provided by sources other than the SFPUC.

[11] BAWSCA Annual Survey, March 2023, Table 3B: Historical Total Water Use among BAWUA/BAWSCA Agencies, 1975-76 to Present. -- https://bawsca.org/uploads/userfiles/files/Annual%20Survey_FY21-22_FINAL.pdf

Table 7-1. Future BAWSCA Region-Wide Water Demands (in MGD) Under Scenarios A Through E

Year	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
2025	218	216	218	216	213
2030	222	214	217	214	207
2035	229	214	217	214	204
2040	238	216	220	215	201
2045	254	223	228	223	204

Table 7-2. Future BAWSCA Region-Wide Population Under Scenarios A Through E

Year	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
2025	1,974,169	1,949,292	1,974,169	1,949,292	1,919,754
2030	2,073,412	2,023,826	2,073,412	2,023,826	1,966,197
2035	2,188,305	2,107,557	2,188,305	2,107,557	2,016,617
2040	2,304,144	2,191,015	2,304,144	2,191,015	2,066,227
2045	2,456,565	2,302,236	2,456,565	2,302,236	2,133,051

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ACWA

ACWA ADVISORY

LEGISLATIVE | WATER RIGHTS
July 24, 2023

Two Bills Targeting Water Rights Fail to Advance; ACWA Removes Opposition to Amended Third Bill

Thanks in part to an ACWA-led coalition, two bills seeking to fundamentally change the way California's water rights system is implemented and enforced have failed to advance out of committees and are being held as two-year bills A third water rights bill has been amended after extensive negotiations, and ACWA's State Legislative Committee voted Friday to remove opposition.

This year has witnessed a significant level of attention from the Legislature towards water rights, marking the highest focus on this issue in at least a decade. ACWA staff made the water rights bills a top priority this year and led a large coalition of more than 100 organizations, including water industry, agricultural and economic interests in opposing AB 460 (Bauer-Kahan), AB 1337 (Wicks) and SB 389 (Allen). The coalition, including several ACWA member agencies, was instrumental in the fight, through extensive contact with local legislators and testifying at hearings.

AB 460 and AB 1337 were pulled from the agenda shortly before they were scheduled to be heard in the Senate Natural Resources and Water Committee. As two-year bills, ACWA staff will continue to engage with the authors and coalition on appropriate amendments over the fall.

AB 460 (Bauer-Kahan) would have granted the State Water Resources Control Board new and sweeping authority to issue interim relief orders against water diverters and users. Additionally, these orders could have been issued without holding a hearing in which water right holders could defend their actions.

The bill also would have authorized the State Water Board to enforce the orders by imposing onerous and costly requirements on water users. This could have included curtailing diversions, imposing new minimum streamflow requirements, directing reservoir operations, requiring the diverter to conduct technical studies, and more.

AB 1337 (Wicks) would have authorized the State Water Board to issue curtailment orders against all water right holders and during any water year type. This bill marked a significant expansion of the State Water Board's curtailment authority and had the potential to significantly impact the certainty and availability of water supplies.

ACWA has moved to a neutral position on SB 389. As originally introduced, the bill would have made it easier for the State Water Board to investigate and invalidate any water right. In any proceeding to evaluate the basis of a water right, the bill would have placed the burden of

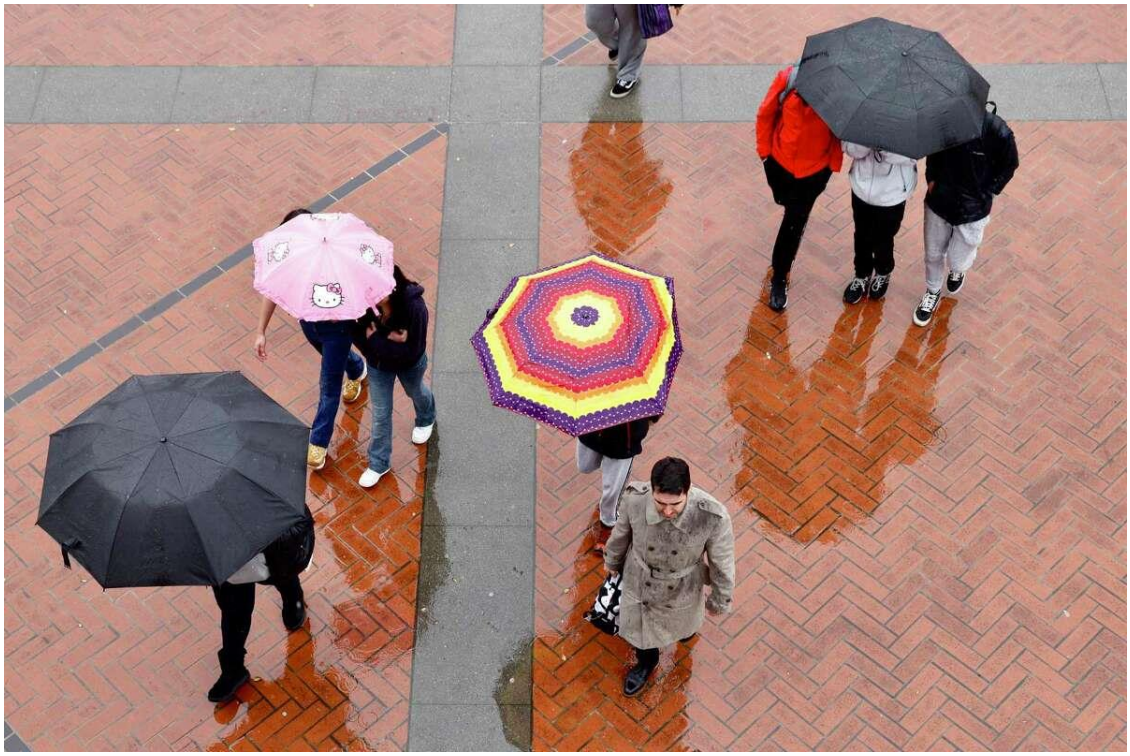
proving the basis of the right on the right holder. The bill also would have made it much easier for the State Water Board to determine that a water right holder forfeited the right.

ACWA staff and members of the coalition negotiated several amendments to the bill so that it now would only allow the State Water Board to request information from a water right holder and not enhance its enforcement authority.

# # #

For questions about any of the water rights bills, please contact ACWA Legislative Advocate Kristopher Anderson at (916) 441-4545.

El Niño typically means wet California winters. These charts show what might be in store
San Francisco Chronicle | September 15, 2023 | Jack Lee



Students carried umbrellas while they walked through the UC Berkeley campus as a storm brought heavy rain and strong winds on March 28. California weather: El Niño can be unpredictable, as the data shows. Jessica Christian/The Chronicle

The official arrival of El Niño conditions raises fears for another wet California winter. But these conditions don't guarantee that the state will face torrential downpours and floods, as it did during the infamous El Niño winters of 1982-83 or 1997-98, experts say.

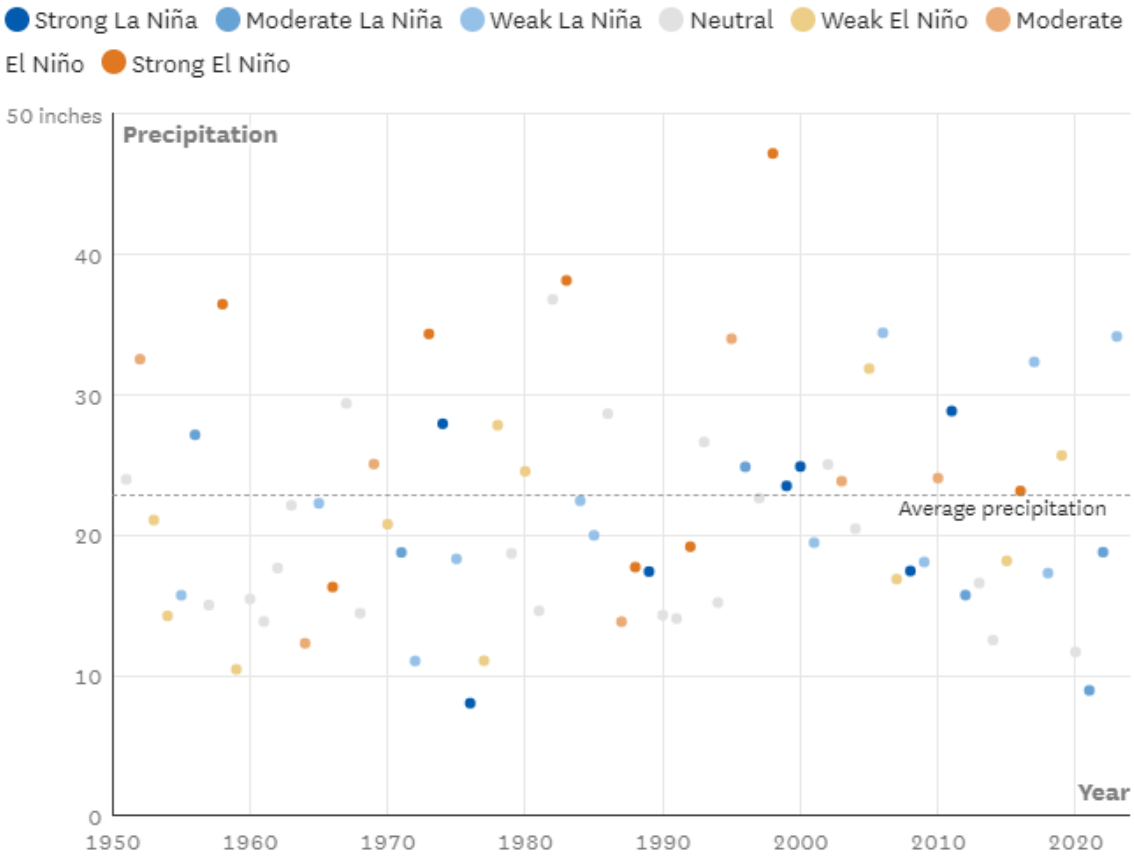
"That, I think, is one of the huge misconceptions," said Jan Null, a meteorologist with Golden Gate Weather Services and adjunct professor at San Jose State University.

Though El Niño typically brings wetter than average weather to California, and La Niña generally brings drier than average conditions, the opposing climate patterns don't guarantee any particular weather, and individual years often buck the trend. Last winter, for example, coincided with La Niña but brought historic downpours and snow across the state.

"If you see the typical El Niño maps, you see the swath across the southern tier of the United States of 'wetter than normal,' " Null said. "I call it the El Niño playbook: That's the diagram you're going to most often see, but it's not always that."

El Niño events correspond to some of San Francisco's wettest years. But there were also El Niño years, such as 2016, with only average — or even below average — rainfall amounts.

S.F. rainfall during La Niña and El Niño events



Precipitation is for downtown San Francisco over entire rainfall seasons, measured from July 1 through June 30 of the indicated year. Data for 2023 is through June 13.

Chart: Jack Lee / The Chronicle • Source: Jan Null / Golden Gate Weather Services; sc-ACIS

The average annual rainfall for downtown San Francisco is 22.89 inches, as indicated by the dashed line. Strong El Niño events in 1982-83 and 1997-98 corresponded with the highest amounts of rainfall in the past 70 years.

But a number of dots above the dashed line, reflecting years with above average rainfall, are blue, corresponding with La Niña years. The current year, measured from July 1 to June 30, is a prime example, with over 34 inches of precipitation despite it being a weak La Niña.

El Niño events correspond to central and eastern equatorial Pacific waters that are warmer than average; the strongest events have the warmest temperatures. La Niña events correspond to cooler than average waters; the strongest events have the coolest temperatures. Neutral events correspond to waters that are close to average temperature.

During El Niño, warm equatorial waters can result in rising air that leads to waves in the atmosphere, influencing the jet stream such that it brings wet conditions to California.

“El Niño is the great nudger,” said Michelle L’Heureux, a climate scientist with the National Oceanic and Atmospheric Administration’s Climate Prediction Center. “It nudges the global atmospheric circulation in certain directions.”

But other chaotic aspects of the atmosphere can sometimes have a bigger effect on the weather than either climate pattern.

“The jet stream is getting punched by a lot of different things,” L’Heureux said. “El Niño is just one of those components that’s throwing a punch.”

Strong El Niño

The latest forecast from the Climate Prediction Center calls for a 71% chance that a strong El Niño will develop over the months of November, December and January. That figure is up from 56% earlier this summer.

“Historically, especially if you look at stronger El Niños, they tend to lead to increased rainfall over California,” L’Heureux said. But an important distinction is that a strong El Niño doesn’t necessarily mean that storms will be more intense across the board.

There’s about a 25% probability that a very strong El Niño could develop in the coming months, L’Heureux said in June, with waters in the equatorial Pacific topping 3.6 degrees Fahrenheit warmer than normal over consecutive months. That has bumped up to 30% in the latest outlook.

Over the last 70 or so years, this has happened only three times — with mixed results.

The El Niño of 1982-83 saw temperatures in the central and eastern equatorial Pacific rise to about 4 degrees above average. The Bay Area received nearly twice the normal amount of precipitation during that rainfall season, with downtown San Francisco logging 38.17 inches.

Another strong El Niño was 1997-98, when waters in the central and eastern equatorial Pacific reached about 4.3 degrees above normal. During the rainfall season of 1998, the Central Coast saw 211% of its normal annual precipitation, with Santa Cruz tallying 60.20 inches of rain.

By contrast, the strong El Niño of 2015-16 played out completely differently. The Bay Area tallied 99% of its normal annual precipitation, with San Francisco receiving 23.17 inches. But some parts of the state, especially in the south, experienced drier than normal conditions.

Precipitation amounts were totaled from July 1 to June 30. Average precipitation values were calculated from 1991 to 2020.

Map: Jack Lee / The Chronicle · Source: Jan Null / Golden Gate Weather Services

During this El Niño event, waters in the central and eastern equatorial Pacific were nearly 4.7 degrees above normal.

It's still too early to know how the upcoming winter will play out, but based on historical patterns of El Niño, it may be prudent for Californians to prepare for another round of wet winter weather, L'Heureux said.

"Risk assessment means being ready just in case," she said.

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El Niño just ramped up. What does it mean for California weather?
San Francisco Chronicle | September 14, 2023 | Anthony Edwards

Waves crash onto the shoreline in Half Moon Bay on April 5, 2016. During that El Niño season, numerous wind and rain storms swept through California, but the state as a whole received only slightly above-normal precipitation. Paul Chinn/The Chronicle

El Niño just ramped up.

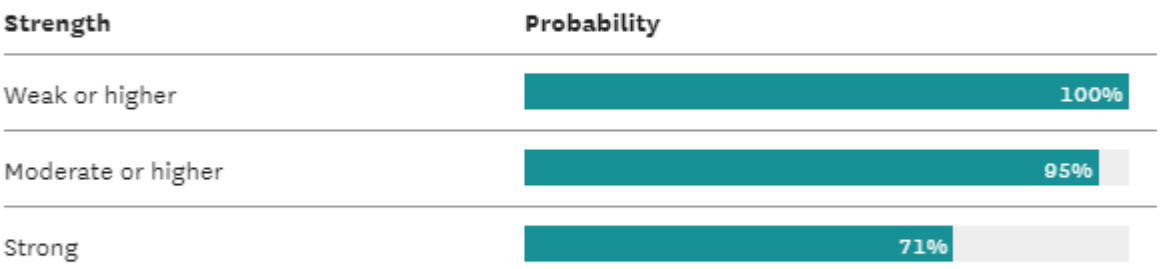
On Thursday, the Climate Prediction Center extended its El Niño advisory for a fourth straight month. The agency forecasts greater than 95% odds that El Niño conditions continue through March and a 71% chance of a “strong” El Niño.

The atmospheric pattern, synonymous with warmer global temperatures and intense regional rainfall, is connected to ocean temperatures.

Eastern equatorial Pacific ocean temperatures are currently 1.6 degrees Celsius above normal. If this part of the sea remains at least 0.5 degrees Celsius above normal through the end of October, an official El Niño year will be declared.

El Niño strength forecast for late 2023

As of Sept. 14, 2023



Strengths correspond to ocean temperatures in the east-central equatorial Pacific. Probabilities reflect forecasts over the period from November 2023 to January 2024.

Table: Jack Lee / The Chronicle • Source: National Oceanic and Atmospheric Association

Outside the equatorial region, El Niño has already contributed to 2023's record-breaking global temperatures. Come the wintertime, El Niño is expected to alter weather patterns and could enhance precipitation across the southern U.S.

More often than not, El Niño results in above-normal winter precipitation in Southern California, with a weaker signal in the northern half of the state. But each El Niño is different, altering the predictability of California weather impacts.

"Chaotic atmospheric variability introduces uncertainty in this prediction," Shang-Ping Xie, a climate scientist at Scripps Institute of Oceanography at UC San Diego wrote in an email.

The current forecast from the Prediction Center is for equal chances of above- and below-normal precipitation across California during meteorological winter — December through February. Equal odds continue into the spring.

"This is a rather conservative forecast," said Xie. "Given El Niño conditions, I'd go with above-normal winter precipitation (in California), especially for February-March when the El Niño signal-to-noise ratio is large. With the caveat of atmospheric chaotic variability, of course."

How El Niño is predicted

Seasonal outlooks are different from short-term weather forecasts. Utilizing statistical models and past observations, scientists create probability-based forecasts for how El Niño and La Niña could affect different parts of the country. National maps display odds that precipitation and temperature will be above, below or near normal.

And sometimes the lesser odds win out.

In September 2022, the Prediction Center forecast a 33 to 50% chance of below-normal precipitation across California for the upcoming La Niña. The less-likely outcome resulted, with record-breaking precipitation, snowfall and flooding to much of California.

A fallen tree is worked on by San Francisco public works employees on 22nd Street in the Mission District in San Francisco on Dec. 31. La Niña brought record-breaking precipitation, snowfall and flooding to much of California last winter. Adam Pardee/Special to The Chronicle

During the most recent strong El Niño in 2015-16, numerous wind and rain storms swept through California, but the state as a whole received only slightly above-normal precipitation. However, climate models and forecasters predicted much more precipitation, especially in Southern California, where the winter was drier than normal.

But in the fall of 2020 and 2021, forecasts were right. Dry winters plagued California, with wet weather across the Pacific Northwest, aligning with seasonal forecasts.

There remains a significant connection between tropical ocean temperatures and California weather. And as science advances, predictability improves.

New tools, better forecasts

Researchers at Lawrence Berkeley National Laboratory have developed a new way to categorize El Niño. The ENSO Longitude Index defines El Niño on a spatial scale, beyond what has been used historically.

Berkeley researchers found that El Niño's in the far east, centered near South America — correlate more strongly with California precipitation than the historical Niño 3.4 index.

The 2016 winter was not an east-based event, while the deluges of 1983 and 1998 were. John O'Brien, a co-author of the 2019 study, has high confidence that the upcoming El Niño's will be an east-based event, increasing the odds of above-normal precipitation in California.

He predicts a "substantially elevated chance of a wet winter."

But lots is still being discovered about El Niño and its different flavors, scientists say, especially considering its historical record dates back only to 1950.

"Part of the problem is that the observational record is just too short to identify years that are exactly like what we expect to happen this year," assistant Oregon State climatologist Nick Siler said. "The atmosphere is noisy, and there's a lot of uncertainty that we're never going to be able to reduce."

This atmospheric noise, and other large-scale weather patterns impacting drought and storms, contributed to California's wet La Niña winter of 2023. Scientists say record-warm oceans worldwide could dull typical weather patterns associated with El Niño, or alter the jet stream during the winter.

"There's nothing that says you can't be in a La Niña and draw 200% of normal and nothing that says you can't be in an El Niño and draw 50% below normal," O'Brien said.

While the waiting game for El Niño's impacts continues, West Coast climate scientists are starting to finalize their predictions.

"The bottom line is that I think we should be guardedly optimistic that California will get at least a normal amount of precipitation," Washington State climatologist Nick Bond wrote in an email. "But (we) should not be too surprised if for whatever reason that does not work out."

# # #

California's reservoirs above historic averages as fall approaches
Fox 40 | September 7, 2023 | Matthew Nobert

(FOX40.COM) — As the final days of summer near, California's reservoirs are in a position they have not been in for some time, they still have a significant amount of water in them.

As of Thursday, all but Trinity Reservoir near Redding and Casitas near Ventura, are at or above their historic average levels, according to the California Department of Water data exchange.

This 1955 dam still produces needed power for Sacramento
Most reservoirs are also still well above 70 percent of their total capacity, with Lake Cachuma having the highest total capacity percentage of 95 percent.

The Department of Water Resource told FOX40.com that not since 2019 has California seen most of the major state reservoirs above their average level for the given time of year.

Just a year ago, California's two largest reservoirs Shasta and Oroville were at 34 percent and 36 percent of their total capacity respectively.

Sacramento updating its emergency alert system
Today both lakes are above 75 percent of their total capacity and around 130 percent of their historic average level.

The DWR told FOX40.com that while these reservoir numbers are exciting there is still a need to recharge groundwater supplies and continuously watch developing climate conditions.

Rocklin school board approves transgender, gender-nonconforming policy revision
This cautious attitude is not without reason, when reservoir levels were near today's in 2019 the future may have looked promising, but come 2020 things were very different.

In September 2020, Shasta and Oroville were around 50 percent of their total capacity and many of the other states reservoirs were in the same condition. These conditions continued until 2023.

As the state moves into the final months of the year DWR said it is unlikely that any reservoirs will see a late summer or early fall recharge from snowmelt as much of this winters dense snowpack has melted away.

# # #

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Water rights reformers scored only a minor victory in the Legislature
Maven's Notebook | September 17, 2023 | Dan Walters

Three measures to overhaul state oversight of water use, giving the state water board more authority over holders of senior water rights, were introduced in the Legislature this year but the most important two died. By Dan Walters, Cal Matters

A centerpiece of California's perpetual political and legal wrangling over allocation of water is the complex array of rights that stretch back to the earliest years of statehood in the 19th century.

Simply put, those who claimed water before 1914, when the state assumed legal control, have "senior rights" that traditionally have entitled them to virtually unlimited supplies even when other users face cutbacks during drought.

The state Water Resources Control Board has made occasional efforts to curtail diversions by senior rights holders when supplies are tight but its legal right to do so is unclear with water rights in conflict with other laws declaring the larger public's interest in overseeing "beneficial" water use.

One test of the issue resulted in a state appellate court's 2022 declaration that the state lacked direct authority to block diversions by senior rights holders and suggested that only the Legislature could provide such power.

Although last winter's heavy rains eased the competition for water that had become intense during several years of severe drought, advocates for overhauling water rights law to give the state more power to protect fish and other wildlife dependent on river flows mounted a major effort in the Legislature this year with three bills.

Together, they would have implemented key recommendations of a study commissioned by the water board that argued for giving it new powers to curtail supplies to water rights holders when warranted.

“When there is not enough water to satisfy all demands, water must be allocated among competing human and environmental uses,” the study declared. “California’s State Water Resources Control Board (SWRCB) needs to be able to routinely require diverters to curtail (stop) unlawful water uses in order to protect water rights, human health and safety, and the environment from serious harm.”

Water rights holders, most of whom are agricultural water agencies, saw the report and the three bills — accurately — as a frontal assault on their privileged position in the competition for water and mounted a stout defense. If enacted, they argued, the changes would make it infinitely more difficult for farmers to plan crop cycles.

The most far-reaching of the three measures, Assembly Bill 1337, would have overturned the 2022 water rights case and authorized the water board “to issue a curtailment order for any diversion, regardless of basis of right, when water is not available,” but it stalled after winning Assembly approval.

A second, Assembly Bill 460, which would have given the board authority to intervene in water diversions on an emergency basis, suffered the same fate.

However, the least onerous of the three, from the standpoint of water rights holders, Senate Bill 389, has made it to Gov. Gavin Newsom’s desk. It would give the board more explicit authority to investigate whether water diversions are lawful — within the scope of diverters’ legal rights — and punish violators as trespassers.

It’s certainly less than what water rights reformers want, which means the decades-long struggle over the issue will continue, particularly if the state once again experiences the kind of drought that last winter’s heavy rain and snow storms alleviated. State water officials believe that such droughts will become more common with climate change, or at least will change the mix of precipitation, with less snow and more rain.

However, water rights are just one front — albeit a very important one — in the state’s perpetual conflict over how the precious liquid should be allocated. Water rights defenders say the state would not have to curtail their supplies if it did a better job of capturing and storing water when it’s available, and there’s some validity in that criticism.

# # #

Will a pending water rights bill on Gov. Newsom's desk be a game changer in California water? It depends

SJV Water | September 15, 2023 | Jesse Vad

State Water Resources Control Board Chair Joaquin Esquivel speaks at the 2022 Kern Water Summit. Lois Henry / SJV Water

A water rights bill that made it through the Legislature this year is, arguably, a much weakened version of its original form, but the fact that it addresses senior rights at all is a significant step, according to experts.

Senate Bill 389, which clarifies the state Water Resources Control Board's ability to investigate senior water rights, passed both the Assembly and Senate as of September 12.

The bill, authored by Senator Ben Allen (D-Santa Monica,) originally faced an onslaught of opposition from the agriculture industry, with about 200 agencies and organizations that came out against the bill.

But after lawmakers worked with the opposition and committed to a significant reworking of the bill, SB 389 sailed through both houses and is expected to become law.

Senior water rights, or pre-1914 water rights, were claimed before 1914 when the state began regulating water ownership and use. Senior rights are seen as the golden water rights and are subject to far less regulation by the state.

SB 389 clarifies the Water Board's ability to investigate senior water rights which clears the path for the state to be able to declare a trespass if it finds something is wrong with a right and could ultimately lead to the board curtailing or changing the water right.

Making the sausage

Originally, the bill was much more aggressive.

There were three main sections of the bill that were eliminated or modified, easing concern among the ag industry.

The bill originally had a provision that allowed the Water Board to investigate a water rights claim and determine whether the claim had been forfeited, said Alex Biering, senior policy advocate for the California Farm Bureau Federation, one of the organizations which originally opposed the bill.

“That felt threatening,” said Biering. “So they removed that piece out.”

The original bill also added a new section to the California Water Code giving the board new investigative powers as opposed to clarifying the ones it already has, said Biering.

That section was nixed too.

“We said, ‘okay, let’s instead just use the existing sections, the Water Code, that gives them the ability to investigate a water right and explain more thoroughly what that means,’” said Biering. “Instead of adding a whole new section, it was clarifying and confirming what was already there.”

The last change was shifting the burden of proof onto the Water Board, said Biering. In the original version, the board could send a letter about a claimed right and the receiving agency then needed to comply, she said.

In the updated version of the bill, the Water Board must request information from the water right holder, provide a written explanation as to why the board is investigating the right and provide any evidence that supports the board’s request, Biering said.

“We wanted it to be a slightly higher bar just so that this couldn’t be done capriciously,” said Biering.

Up for interpretation

The bill will become law as long as the governor doesn’t veto it. Biering said she’d be surprised if it was vetoed, considering the opposition has largely approved the current version.

There is still concern among some about the current version of the bill though.

“From a lot of people’s standpoints, it’s not really good enough,” said Dean Ruiz, attorney for the South Delta Water Agency and other districts and landowners. “It’s probably going to end up having to be further clarified one way or the other. But it does change things.”

Despite the weakening of the bill, legal experts agree it is still a significant piece of legislation that could have sweeping implications for senior water rights holders. But the true impacts will depend on how the Water Board interprets its authority if the bill becomes law, according to water attorneys.

“If they abuse that authority, that’s going to be bad, because there’s going to be a lot of water rights holders that are going to have to go through the drill of accounting for their water rights,” said Tom Berlinger, partner at Duane Morris law firm.

Proving a water right isn’t as simple as it sounds, according to Berlinger. It’s not like showing your driver’s license, said Berlinger. It can take months, cost a lot of money and disrupt normal operations significantly.

Others don’t see it as ominous.

The significance of the bill will depend on how it’s used, said Dan Raytis, attorney at Belden Blaine Raytis LLP.

“If there’s an area where there’s a particular problem with people overusing water, then I could see how it could be an important tool,” said Raytis. “If it’s a solution in search of a problem, then it’s just going to lead to endless litigation.”

Still, Raytis said the bill is probably not as earth shattering as many are making it out to seem.

“I don’t think it’s as dramatic as people are making it sound,” said Raytis. “How dramatic the impact of this supposed change is really depends on how it’s invoked in the future.”

Seeking control

The Water Board has been pursuing greater control over pre-1914 rights since the 2012-2016 drought when it issued a curtailment order limiting the amount of water that could be taken from several state rivers. Water agencies with pre-1914 rights sued and won.

In September 2022, the Sixth District Court of Appeal upheld that decision but noted the Water Board still had other means to address water scarcity, including the authority to determine whether a pre-1914 right is valid or the right holder is exceeding its take.

It was widely believed the Sixth District’s opinion would lead to legislative action.

Despite the legal challenges, Water Board Chairman Joaquin Esquivel was clear that the board intended to continue pursuing water rights.

At the May 2022 Water Association of Kern County water summit, Esquivel said: “We know we have to change the system. Water rights can be there as a tool to be able to manage supplies through not just a drought but when there is water again.”

He repeatedly stated that the state needed to “track the drops” to understand how much water truly is available in watersheds, who has rights to that water and exactly how much those rights holders can claim.

# # #

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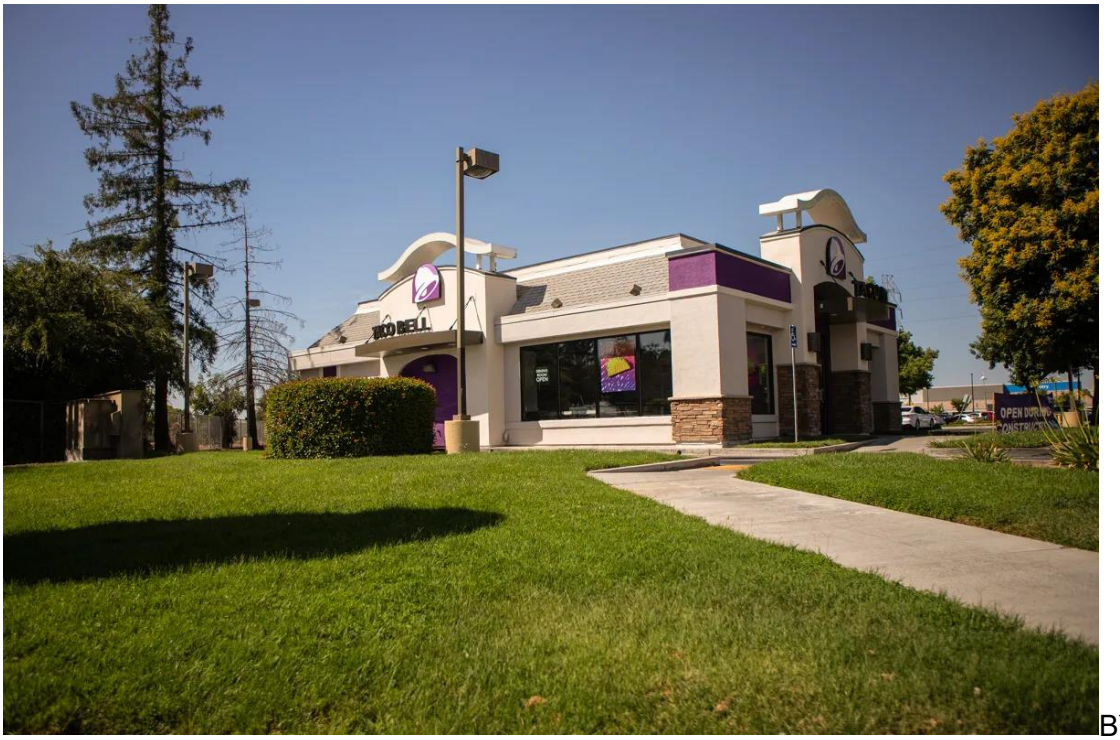
California lawmakers move to ban irrigation of some decorative lawns
CalMatters | September 13, 2023 | Rachel Becker



BY

Legislation that would ban use of drinkable water to irrigate nonfunctional lawns at businesses and institutions has been sent to the governor. Photo by Larry Valenzuela, CalMatters/CatchLight Local

California businesses and institutions will have to stop irrigating decorative grassy areas with drinkable water under legislation approved by state lawmakers.

The bill now goes to Gov. Gavin Newsom for his signature. Newsom's office declined to comment today, but he previously called for an irrigation ban that led to a similar emergency measure that's in effect until next June.

Authored by Assemblymember Laura Friedman, a Democrat from Burbank, the legislation would ban use of potable water — water that is safe to drink — to irrigate ornamental lawns or grasses at businesses, institutions, industrial facilities and certain developments. The grass could only be irrigated with recycled water.

The aim of the legislation is to force businesses to tear out their lawns and replace them with landscapes that use much less water.

Residential yards would not be included in the ban, and neither would cemeteries, parks, golf courses and sports fields where people play, picnic and gather. Other plants like shrubs, flowers, trees, and landscapes irrigated with recycled water are also unaffected.

The ban would roll out in stages, starting in 2027 with government properties, and in 2028 for other institutional, commercial and industrial properties. Common areas of developments like

homeowners associations, mobile home parks and some retirement communities would have until 2029.

The bill, AB 1572, passed the Senate 29 to 10 on Monday with no debate, and the final amendments cleared the Assembly 55 to 18 on Tuesday. The final 28 votes in both houses against the bill this week were nearly all Republicans, with only two Democrats rejecting it.

If the legislation is signed by Newsom, California would follow on the heels of Nevada, where lawmakers barred the use of Colorado River water for irrigating nonfunctional grass in Southern Nevada at certain commercial, multi-family, government and other properties.

Jointly sponsored by the Natural Resources Defense Council, Heal the Bay and the Metropolitan Water District of Southern California, the bill enjoyed far more support than opposition — unusual for a bill dealing with the parched state's most precious resource.

Opposition, Friedman said, "hasn't been fierce."

"I haven't had anyone I know in Los Angeles call me with concerns. I haven't had any property owners reach out," she said. "They're all like, 'Yeah, fine, we're already doing this — already starting to move in this direction.'"

As of Sept. 1, the California Business Roundtable, California Landscape Contractors Association and the Community Associations Institute California Legislative Action Committee were listed as opposition.

In response to an executive order that Newsom issued during the most recent drought, the State Water Board starting in June 2022 banned use of drinkable water to irrigate ornamental grass at commercial, industrial and institutional facilities. The ban was extended through June 2024 unless the board renews or rescinds it before then.

The board also is developing new water conservation rules that would require urban water suppliers to ban the irrigation of non-functional turf with drinking water starting in 2025, spokesperson Edward Ortiz told CalMatters.

Friedman said the legislation is needed because it "would take effect sooner and is more holistic than what is currently a draft regulation, which may or may not ultimately be adopted by the Board."

"I think it's going to be hard to have a giant lawn that no one uses and continue to water it … You're going to stand out, and not in a good way."

- Matt Keller, Santa Clara Valley Water District.

Sandra Giarde, executive director of the California Landscape Contractors Association, said the bill is unnecessary because of the state's emergency drought measure.

Giarde said she is concerned that people will replace grass with rocks or other hardscaping, “and that creates heat islands,” she said. Grass, she added, “has its place. Just if people would stop over-watering it, that would be really great.”

Matt Keller, spokesperson for the Santa Clara Valley Water District, which serves approximately 2 million people in the heart of Silicon Valley, said he expects the bill to ramp up pressure on businesses to remove lawns.

Since June 2022, the district has received more than 100 reports from community members about businesses that have failed to comply.

“That kind of peer pressure is powerful,” he said. “I think it’s going to be hard to have a giant lawn that no one uses and continue to water it … You’re going to stand out, and not in a good way.”

The problem with ‘turf’

Lawns, known by landscapers as “turf,” are thirsty, drinking up more water than any other vegetation analyzed in California, according to a state report.

The Pacific Institute, a global water think-tank, estimates that tearing out grass and replacing it with less water-demanding plants would reduce water use across California by about 1 million to 1.5 million acre-feet per year, enough to supply about 4.5 million households. About 400,000 acre-feet of conservation a year could be squeezed out of businesses, institutions and industrial facilities, the report says.

The massive Metropolitan Water District of Southern California, a major water importer and a sponsor of the bill, estimated that tearing out non-residential decorative grass across all of Southern California would save about 300,000 acre-feet per year — enough to serve about 900,000 households.

Under the bill, property owners designate which lawns are considered “functional,” and local water systems and governments would be tasked with enforcement.

The ban would roll out in stages, starting in 2027 with government properties, and in 2028 for other institutional, commercial and industrial properties.

The State Water Resources Control Board, in certain circumstances, can give three-year extensions if necessary. And state-designated disadvantaged communities don’t have to comply until 2031 or when they receive state funding, whichever comes sooner.

Owners of especially large properties must certify to the state every three years that they’re meeting the requirements starting in 2030 or 2031.

Whether California’s current temporary ban has actually reduced irrigation at businesses isn’t clear. Local water suppliers and municipalities are tasked with enforcement, and they are not required to report progress to the state.

Heather Cooley, director of research at the Pacific Institute, an Oakland water supply think tank, said her sense is that awareness of the current ban and compliance with it have been “relatively low.”

She said she expects to see more durable changes under the bill’s longer deadlines and certification requirements for larger property owners.

“I think the legislation is really oriented towards transforming our landscapes, rather than just an emergency,” Cooley said. “It does mean that when we do have a drought, there’s not as much pressure than to reduce usage because our supplies are in better shape.”

Nonfunctional grass: ‘You know it when you see it’

Charles Bohlig, water conservation supervisor at the East Bay Municipal Utility District, one of the state’s largest water providers, said it’s difficult to tease apart the conservation impacts of any one measure like the state’s temporary irrigation ban for ornamental grass.

Another challenge for the East Bay district under the new legislation will be identifying all the nonfunctional grass across its 322 square mile service area.

Bohlig said the district is investigating using satellite imagery, which it already uses to measure large landscapes and provide irrigation advice to customers based on weather and evaporation. However, smaller, irregular grassy patches in front of businesses could be harder to spot from above. And identifying grass as functional or nonfunctional will take extra coordination with customers and communities.

For nonfunctional grass, “you know it when you see it,” Bohlig said.

“Our feeling is if you’re only on it when you mow it, it’s clearly not a piece of functional turf that needs to be maintained as such,” added his East Bay district colleague, Andrea Pook.

The new legislation would help districts work with customers on making those landscapes less thirsty. “Like, here’s particular legislation that’s now the law of the land. How can we work together to help convert your landscape into a native garden and protect your trees at the same time?” Bohlig said.

For some, prolonged droughts and landscaping rebates have offered more incentive to tear out grass than the current, temporary irrigation ban.

Many water suppliers like the Metropolitan Water District of Southern California, East Bay Municipal Utility District, the city of Long Beach and Valley Water offer customers rebates for tearing out lawns. The state of California currently does not.

But overhauling landscapes is pricey for businesses and institutions.

Converting grass to less water intensive plants costs about $10 a square foot, according to the Metropolitan Water District.

“Our feeling is if you’re only on it when you mow it, it’s clearly not a piece of functional turf that needs to be maintained as such.”

- Andrea Pook, East Bay Municipal Utility District

Alameda recently spent about $204,000 tearing out 6,500 square feet of grass outside its city hall and replacing it with native and other low-water plants. Public Works director Erin Smith said the city expects a $7,000 rebate from the East Bay district.

An even larger, 29,000 square foot project is set to begin at Alameda’s City Hall West in October, expected to cost around $462,000. Smith said she’s hoping for a $15,000 rebate, and she expects to eventually see the city’s water bills drop across the two sites by around $8,500.

“It is nice to know that return on investment is on the horizon. But given the cost of construction, it does take a number of years before you’re actually starting to see that,” she said.

Still, she said, the changes are already obvious. “The new landscape is rich with colors and textures.”

That’s also what Swanee Edwards loves most about the newly transformed landscaping at her retirement community, the Woodland Estates in Morgan Hill. The 72-year-old board member and resident said overhauling the lawns around their clubhouse was long overdue.

“Now we’re not getting nasty letters from the city saying you must have a huge leak somewhere,” Edwards said.

The retirement community tore up about 26,000 square feet of lawn and replaced it with crepe myrtle trees, roses and native plants at a cost of about $104,000, Edwards said. Woodland Estates received a rebate of more than $60,000 from Valley Water, some of which was shared with the city.

“It’s just beautiful, compared to what we had there before,” Edwards said. “The second favorite thing, of course, is the water we saved and that the water isn’t wasted, running down the gutters and into the streets.”

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California is moving to outlaw watering some grass that's purely decorative
LA Times | September 13, 2023 | Ian James

A pedestrian crosses a median as traffic passes along San Vicente Blvd. in Brentwood in May 2022. California legislators passed a water-saving bill banning the use of drinking water on decorative grass outside businesses and along streets. (Genaro Molina/Los Angeles Times)

Outdoor watering accounts for roughly half of total water use in Southern California's cities and suburbs, and a large portion of that water is sprayed from sprinklers to keep grass green.

Under a bill passed by state legislators this week, California will soon outlaw using drinking water for some of those vast expanses of grass — the purely decorative patches of green that are mowed but never walked on or used for recreation.

Grass covers an estimated 218,000 acres in the Metropolitan Water District of Southern California's six-county area. Nearly a quarter of that, or up to 51,000 acres, is categorized as "nonfunctional" turf — the sort of grass that fills spaces along roads and sidewalks, in front of businesses, and around parking lots.

This unused grass covers an area roughly 12 times the size of Griffith Park. By eliminating this grass and replacing it with landscaping that fits Southern California's arid climate, the district estimates the region could reduce total water use by nearly 10%.

“That will make a big dent in the water that’s currently wasted on outdoor water use,” said Adán Ortega Jr., chair of the MWD board.

Ortega said the legislation is overdue.

“Wasteful outdoor irrigation is a major challenge to our ability to adapt to climate change,” Ortega said.

The bill was passed by the state Senate in a 28-10 vote Monday and is now awaiting Gov. Gavin Newsom’s signature.

The legislation prohibits using drinking water for purely decorative grass along roads, in medians and outside businesses and in common areas of homeowners associations.

The bill, AB 1572, was introduced by Assemblymember Laura Friedman (D-Glendale). It outlaws the use of potable water for nonfunctional grass at commercial, industrial, municipal and institutional properties.

The ban will take effect in phases between 2027 and 2031. The legislation includes exceptions for grass in sports fields, parks, cemeteries, areas used for activities, and other “community spaces.” Also exempt are areas where grass is irrigated with recycled water.

“It’s a no-brainer. It’s grass that you look at but never use for anything,” Friedman said. “It means moving to things like natives and drought-resistant plants, which by the way look gorgeous.”

Friedman said that at her home, for example, she ditched nonnative ivy years ago and now has a flourishing native garden with poppies, lupines, fragrant salvias and oak trees.

While the legislation outlaws purely decorative grass in most common areas of homeowners associations, it won’t affect residential lawns.

Grass outside apartment complexes, which originally was included in the bill, was removed from the legislation after some city officials and managers of water agencies raised concerns about how they would enforce the restrictions, and about the costs for low-income communities.

The legislation will make permanent a measure that California water regulators adopted last year during the drought — and readopted for another year in May — banning the use of drinking water to irrigate nonfunctional grass at businesses and institutions that isn’t used for recreational or other community activities.

In adopting the water-saving measure, California is following Nevada’s lead. The Nevada Legislature in 2021 passed a law that bans watering purely decorative grass along streets, on

medians, at homeowners associations, apartment complexes, businesses and other properties starting in 2027.

The bill is an important step in working toward California's water goals, said Heather Cooley, director of research for the Pacific Institute, a water think tank in Oakland.

"As we're facing climate change, as we're facing continued growth, we have to be smarter about how we use water," Cooley said. "And so taking out these grass areas that no one is using is really a smart move to prepare our communities for the more variable and uncertain climate that we are now facing."

She said the legislation also will help cities move toward the state's planned conservation targets, which in the coming years will require urban suppliers to have water budgets and begin achieving efficiency standards.

The push to use less water on grass in cities and suburbs has been driven partly by the chronic shortages on the shrinking Colorado River, where reservoirs have reached low levels in recent years, prompting negotiations on plans for reducing water use. Leaders of water agencies have also been discussing ways of achieving water savings in agriculture, which consumes roughly 80% of the river's water, a large portion of it for alfalfa and other cattle-feed crops.

In cities across the West, areas with unused grass have become a major target for urban water managers as they look for ways to quickly and permanently reduce water use. Some officials have been talking about nonfunctional turf so much that they abbreviate it with the acronym "NFT."

The efforts to move away from grass also reflect a shift in aesthetics and values, linked to growing scarcity and simple economics. Where once it might have seemed acceptable to line suburban streets with lush landscapes reminiscent of English estates, there is now widespread agreement that it doesn't make sense for cities to pump water long distances and treat it to drinking water standards — only to spray it on grass that serves no real purpose.

Last year, the leaders of 30 water agencies that supply cities from Denver to San Diego signed an agreement setting a goal of removing 30% of the existing nonfunctional grass — and replacing it with "drought- and climate-resilient landscaping," while also maintaining trees.

Conservation advocates have touted various benefits: eliminating unneeded grass not only saves valuable water and reduces delivery costs, but also cuts down on the energy used to pump and treat water.

The bill's timeline will outlaw using potable water for nonfunctional grass at many properties owned by local governments starting in 2027, followed by commercial and industrial properties starting in 2028, and common areas of homeowners associations in 2029.

The legislation allows local agencies in disadvantaged communities additional time beyond 2031 if necessary to secure state funds to pay for replacing turf with low-water-use landscaping. It also offers flexibility for special circumstances, saying the State Water Resources Control Board may postpone a deadline for up to three years in the event of “economic hardship, critical business need, and potential impacts to human health or safety.”

The bill was sponsored by the Natural Resources Defense Council and Heal the Bay, and the Metropolitan Water District joined the groups as a co-sponsor.

After several revisions, the bill was supported by the Association of California Water Agencies, which represents about 460 public water suppliers.

Cash rebates are available in Southern California and other parts of the state to help property owners with the costs of taking out grass and putting in landscaping that uses less water.

The MWD has a turf replacement program that pays a base rebate of $2 per square-foot of grass removed and replaced with water-efficient landscaping. The rebate is available to homeowners as well as businesses and other property owners. Some of the MWD’s 26 member agencies, including cities and other water suppliers, offer additional rebates, in many cases $1 but in some areas up to $3 per square-foot of lawn removed.

In June, the MWD received a state grant to increase the district’s base rebate to $3 for commercial, industrial and institutional properties, said Rebecca Kimitch, a spokesperson for the agency. Officials expect to make the higher rebates available starting later this year, and are also seeking funds from the federal government to support its rebates for grass removal.

According to the district, the rebates paid out to date have already led to the removal of more than 4,500 acres of grass, saving enough water to supply more than 60,000 average homes.

Studies commissioned by the district have found that for every 100 homes where customers took out grass using a rebate, an additional 132 nearby homeowners were inspired to get rid of their lawns without receiving a rebate — something the district’s managers have called “the halo effect.”

Last year, the district’s board passed a resolution urging cities and water agencies across Southern California to enact local ordinances prohibiting the use of potable water for nonfunctional grass outside businesses and along roads, as well as in new home construction.

“There’s a huge opportunity there,” said Adel Hagekhalil, MWD’s general manager. “If it’s not being used by somebody, it’s just wasting water. And water is so valuable.”

Another bill introduced by Friedman, AB 1573, would have prohibited nonfunctional grass at new or renovated non-residential developments, and would have required more native plants for

those properties. Friedman said the measure was intended to help the state's struggling ecosystems and give a boost to butterflies and other pollinators.

But amendments adopted in the Senate Appropriations Committee would have weakened the measures, including by allowing nonnative plants. And Friedman responded by shelving the legislation.

Another bill, SB 676, which the Assembly passed on Tuesday, empowers cities and counties to ban or restrict the installation of artificial turf on residential properties — something they were prevented from doing under previous legislation that was adopted in 2015.

Supporters of the bill, which was introduced by Sen. Ben Allen (D-Santa Monica), said artificial turf poses significant environmental problems. They pointed to research showing that microplastics from artificial turf end up washing into streams and the ocean, and that harmful PFAS chemicals have also been found in artificial turf.

The measure changes the law to specify that cities and counties may not prohibit the installation of drought-tolerant landscaping "using living plant material," but may outlaw artificial turf.

Another approved bill, AB 1423, bans the manufacturing and sale of artificial turf containing PFAS chemicals. That bill is also awaiting the governor's signature.

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BAY DELTA PLAN: State Water Board adopts initial biological goals for the Lower San Joaquin River

Maven's Notebook | September 12, 2023

The biological goals will inform adaptive implementation methods for flows, evaluate the effectiveness of implementing the Lower San Joaquin River flow objectives, and inform future changes to the Bay-Delta Water Quality Control Plan.

At the September 6 State Water Resources Control Board meeting, Board members took another step forward in the long-running effort to update the Bay Delta Water Quality Control Plan (or Bay-Delta Plan) by unanimously approving initial biological goals for the Lower San Joaquin River. Erin Foresman, Environmental Program Manager, led the staff presentation.

As a framework for protecting beneficial uses in the Bay-Delta watershed, the Bay-Delta Plan establishes water quality objectives and outlines a comprehensive plan for their implementation. However, despite the requirement to review and update the Plan at least every three years, this has only occurred three times since the first plan was adopted in 1978. The most recent revision dates back to 2006, and efforts to update it have been in progress since 2009.

Given the size of the watershed, which includes the Sacramento and San Joaquin Rivers, the Board is working on the update in two phases: Phase one encompasses the Lower San Joaquin River and Southern Delta salinity standards; Phase two will be the Sacramento River and interior Delta flows.

In December 2018, the State Water Board adopted new and revised flow objectives for the Lower San Joaquin River and its salmon-bearing tributaries, the Stanislaus, Tuolumne, and Merced Rivers.

- The new and revised numeric flow objectives apply from February to June and require 40% of unimpaired flow with an adaptive range of 30-50% on each of the Stanislaus, Tuolumne, and Merced Rivers at the flow gauge closest to the confluence with the Lower San Joaquin River. Foresman explained that unimpaired flow refers to the flow production of a water basin unaltered by diversion of streams or imports and exports to a watershed and is essentially an estimate of the water supply available for instream and consumptive uses.
- The minimum base flow objective applies on the lower San Joaquin River at Vernalis and requires flows of 1000 cubic feet per second (CFS) with an adaptive range of 800 to 1200.

The Bay Delta Plan includes a program of implementation, which outlines the broad strategy for achieving the objectives and reasonable protection of beneficial uses. The program of implementation for the Lower San Joaquin River flows requires the State Water Board to complete several additional actions, including establishing the Stanislaus, Tuolumne, and Merced (STM) Working Group to assist with the implementation of the Lower San Joaquin River flow requirements and the development of biological goals to assess the effectiveness of new and revised flow objectives.

The Bay Delta Plan requires the development of biological goals for lower San Joaquin River salmonids; biological goals for other species may be developed in the future. Biological goals are quantitative metrics that will inform adaptive implementation methods for flows, evaluate the effectiveness of implementing the Lower San Joaquin River flow objectives, and inform future changes to the Bay-Delta Plan. Biological goals are not intended to assess individual water rights holders' compliance with the Bay Delta Plan.

The Bay Delta Plan requires biological goals to be developed for abundance, productivity, genetic and life history, diversity, population spatial extent distribution, and structure, all metrics of viable salmon population concepts or VSP. The biological goals must be science-based, consistent with legal requirements, and SMART (Specific, Measurable, Achievable, Results-focused, and Time-bound). The biological goals were developed based on recommendations from a 2019 Independent Science Advisory Panel report and similar efforts to develop biological goals, including the Bay Delta Conservation Plan and the Collaborative Science and Adaptive Management Program.

The goals will be reassessed at least every five years and as additional information is collected using an adaptive management approach. In addition, as the Board improves engagement with Tribes and environmental justice groups, the biological goals will be modified as necessary to incorporate traditional ecological knowledge and other relevant information.

The staff then discussed the specifics of the biological goals and how they were developed in great detail. (See 4:35:00 – 4:53:00 https://www.youtube.com/watch?v=DeI8snpD9Go)

Tina Cannon Leahy acknowledged that there is litigation pending in Sacramento Superior Court regarding the Lower San Joaquin River and Southern Delta Salinity Standards update to the Bay-Delta Plan. The Superior Court has coordinated 12 cases together under the name "State Water Board cases." An entire week of oral argument was recently heard on the cases, with six additional days scheduled.

Four comment letters on the draft biological goals were received from parties to the State Water Board cases, raising some legal and technical issues.

"The Office of Chief Counsel has reviewed the legal issues in these letters and found that they do not have merit," said Ms. Leahy. "These issues include but are not limited to allegations that the Board should not or cannot act because litigation is pending; that the board's approval of biological goals requires the California Environmental Quality Act or CEQA review, that the biological goals are somehow an amendment to the Bay Delta Plan, or that the board's approval of biological goals is an alleged underground regulation."

"The Board may act today," she continued. "Even though the litigation is pending, there is no court order preventing you from taking action to approve the initial biological goals. As explained in whereas paragraph nine, approving the biological goals, which are metrics that the Board can use to assess progress, is not a project within the meaning of CEQA, and that is explained in the resolution. The biological goals do not amend the Bay-Delta Plan; they were required by the Bay-Delta Plan. In addition, the biological goals are not an underground regulation. They are not a rule or standard of general application in the legal sense of those words. Finally, to the extent that parties are reraising issues currently being litigated in the Sacramento Superior Court right now, this board meeting is not the proper forum to debate them."

As a result of the comments received, staff had two changes to the proposed language. The first is to clarify that the evaluation of the effectiveness of voluntary agreements would be subject to the specific provisions or terms of any voluntary agreement as may be approved in any future updates to the Bay-Delta Plan and not the biological goals. The second is to improve the clarity in describing specifically what the Board is approving.

PUBLIC COMMENTS

The Board then heard from the public. There were eleven commenters, a mix of irrigation districts and NGOs.

Peter Drekmeier with the Tuolumne River Trust pointed out Central Valley salmon are on the brink of extinction, and there's no more room for compromise. "We need to aggressively restore habitat, and higher flows are the key ingredient. … During the recent three-year drought, unimpaired flow on the Lower Tuolumne River between February and June averaged just 13%.

I realized this has been a long process developing the biological goals. My sense is you're probably going to approve them. But we need to look at strengthening them and making the priority be the restoration of the salmon-based ecosystem that the Pacific Coast depends on."

John Buckley pointed out that there has been a lack of meaningful action since the Board adopted the update, and it's time to move forward. "It's not enough for the Water Board and Department of Fish and Wildlife to continue to express desirable intentions that don't result in meaningful actions. The current version of the biological goals still has flaws and perhaps can be improved, but my key comment today is it's time for adoption, not further delay."

Cynthia Cortez with Restore the Delta said the timeline, as expressed in the biological goals, risks there being no spawning salmon or fish left in the waterways to protect. She noted the closed fishery season this year demonstrates the impacts that decreased fish populations have on communities, as Tribal communities and Delta communities depend on thriving fish populations for cultural practices and sustenance.

Julie Zimmerman with The Nature Conservancy said they support the adoption of the biological goals by the Board at this meeting. Still, they have recommendations for strengthening the goals to be consistent with plan objectives. She then had several specific technical comments on the biological goals and how they must be strengthened to be consistent with plan objectives.

Ashley Overhouse with Defenders of Wildlife also expressed support for the Board to adopt goals today but said the biological goals must include goals for juvenile Chinook salmon survival in the main stem of the San Joaquin River and that those goals must be considered in determining adaptive adjustments to updated flow standards.

Jon Rosenfield with the San Francisco Baykeeper pointed out the biological goals were meant to be considered 180 days after the adoption of the updates. "I would suggest that if the board wants to fulfill the intent of the Bay Delta Plan updates and see more collaboration and exchange in the STM group established by those updates, the board should move forward expeditiously with implementing the flow updates while there are still wild spawning salmon, steelhead and other native fishes on those tributaries to protect."

He also pointed out the lack of a biological goal for chinook salmon survival in the main stem of the San Joaquin. As a result, the biological goals provide no guidance for adaptive management or future plan updates for conditions in the main stem San Joaquin River as it enters the Delta, which is inconsistent with the purpose of the plan updates and the viability objectives. The abundance goals still do not reflect a statement consistent with attaining the salmon doubling objective.

"In sum, although the current draft biological goals still do not reflect what the Plan or POI needs to accomplish to be considered a success. Staff have made important and valuable improvements. We appreciate their efforts. It's time for the Board to adopt these initial goals,

emphasize the need for continued improvement, and move forward with implementing the updated flow standards, which are now long overdue."

"Some goals are better than none," said Brett Baker, attorney at Nomellini Grilli & McDaniel and counsel for the Central Delta Water Agency. He pointed out that the goals focus exclusively on chinook salmon and ignore other species of concern that use the Delta estuary. He noted the effects of selenium on the development of splittail in the San Joaquin River. "When we increase deliveries, the quality of the water that comes down to San Joaquin suffers due greatly to the embedded toxins in the soil in some of those areas where they're delivered, and also due to the fact that we exclude the Friant and San Luis and Upper San Joaquin River and Kings River from some of these flow standards and flow requirements."

Cindy Meyer with the San Luis Delta Mendota Water Authority supported the comments made by the State Water Contractors, especially the need to amend the draft resolution and the report specifically acknowledging that the biological goals are not regulatory requirements and will only be used to assess the long-term trends.

Tom Berliner with the Merced Irrigation District said there's a water rights issue. "The resolution states that addressing water rights is an essential part of the Bay Delta Plan and meeting the biological goals. However, as you know, there has not been any water rights proceeding. And the entirety of the responsibility and the damages to be realized by our constituents have been pinned on the irrigation districts and the SFPUC. The Plan ignores downstream water users on all of the tributaries and the San Joaquin River. And those parties not only divert water, but they certainly have impacts on the quality of the water and the timing of flows and should be taken into account."

Mr. Berliner said the twelve years for implementation is simply not enough, as it doesn't consider the multiple events that can impact success, such as drought, flood, fires, climate change, and other impacts on water quality, as well as ocean harvests and migration success. He wanted the Board to delay their vote until all the Board members' questions and concerns were addressed.

Michael Cook with Turlock Irrigation District had technical and legal concerns with the biological goals. Tuolumne River partners have requested the State Water Board amend the resolution to include specific language that clarifies the biological goals do not apply to those parties that have entered into a voluntary agreement with the State Water Board. "The change sheet does make it clear that the voluntary agreement will be evaluated by the standards in the voluntary agreement. But it doesn't make clear that the implementation of the Bay Delta Plan is a voluntary agreement or the biological goals, not both at the same time."

BOARD VOTE

After some minor changes and clarifications to the resolution, the Board unanimously approved the resolution and the initial biological goals.

This article first appeared in Maven's Weekly Water Blast, the newsletter for donors and sponsors of Maven's Notebook. Become a donor or sponsor of the Notebook and exclusive water news and more in your inbox every Monday morning.

FOR MORE INFORMATION ...

- Draft Initial Biological Goals Report adopted by the Board
- State Water Board webpage for Lower San Joaquin River flows (more info and documents on the biological goals)

# # #

Lawmakers approve plan to strengthen oversight of California water rights
LA Times | September 9, 2023 | Ian James


Water is pumped into a canal on a ranch in the Central Valley. (Brian van der Brug / Los Angeles Times)

California legislators have passed a bill that aims to close a long-standing loophole in the state's water laws: Until now, regulators haven't had clear authority to investigate the water rights of some of the biggest water users.

These senior water right holders, with claims dating to before 1914, use roughly a third of the water that is diverted, on average, from the state's rivers and streams. They include cities and individual landowners, as well as agricultural irrigation districts supplying farms that produce nuts, rice and other crops.

The bill, Senate Bill 389, passed in a 50-17 Assembly vote on Tuesday and is expected to be among the bills presented to Gov. Gavin Newsom for signing.

The legislation expressly authorizes the State Water Resources Control Board to investigate all water rights claims — including riparian rights and pre-1914 rights — and to determine whether the rights are valid.

"It's about giving the water board the tools that it needs to do its work," said Sen. Ben Allen (D-Santa Monica), who introduced the bill.

Allen pointed out that California's existing water rights allocate far more water than is available in an average year, and said the State Water Board is tasked with making the system function at a time when climate change is putting growing strains on water supplies.

He said the agency needs to have this oversight authority to "make sure the system is working and that we actually have enough water for everybody."

"This is essential to their ability to ensure that we have a sustainable water system in our state," Allen said.

The legislation says state water regulators may investigate claims of pre-1914 or riparian water rights, issue an order for information, and, after a hearing, curb any unauthorized water use.

If an investigation reveals that a water supplier has been taking more water than it is entitled to, the State Water Board can use its enforcement powers to make that stop.

The bill is among a list of reform proposals that experts have suggested to improve oversight and management of California's water rights system.

The bill is long overdue and provides the State Water Board "clear and unchallengeable authority to enforce the water rights system," said Jennifer Harder, a law professor at University of the Pacific's McGeorge School of Law.

She noted that prominent advocates of the change included the late Clifford Lee, a retired deputy attorney general who last year helped lead a group of experts in presenting reform proposals, as well as Jonas Minton, a water policy expert and environmentalist who organized the group. Both men died last year.

Lee and Minton believed the bill "was a critical first step to ensuring a sensible and cohesive water rights system" for California in the 21st century, Harder said. "The passage of this bill is a tribute to their memories."

The bill doesn't actually give water regulators new powers, but it adds specificity to what was previously a vague section of the state's water law, said Nell Green Nylen, a senior research fellow at the UC Berkeley School of Law's Wheeler Water Institute.

The State Water Board has previously gathered information about such water rights just as the bill describes, Green Nylen said. But because this power wasn't spelled out in the law before now, she said, the agency "has almost certainly been hesitant to use it, fearing lawsuits and political backlash."

"Imagine if a large segment of California taxpayers were not convinced the state's Franchise Tax Board had the power to audit high-earning residents," she said. "That wouldn't be a good situation."

Green Nylen and other legal experts recently published a state-funded report with recommendations for legislative and policy changes to improve oversight and management of water rights. She said the legislation partially addresses one of their recommendations, and should make it easier for the board to exercise its authority more frequently.

California's complex system of water rights took shape starting in the mid-1800s, when settlers saw the state's water as abundant, and when a Gold Rush prospector could stake claim to river flows simply by nailing a notice to a tree.

State officials are now working on a project to modernize California's water rights information system by digitizing millions of paper records. Officials have said that even those extensive records in many cases don't include original documents that show proof of pre-1914 water rights, which were grandfathered in under the 1913 Water Commission Act. That act established a permit process for rights from then on.

Some other bills that would reform water laws have stalled in the Legislature but may still be voted on next year. They include Assembly Bill 460, which would strengthen the State Water Board's enforcement powers to stop illegal water diversions and increase fines for violators, and AB 1563, which would require local groundwater management agencies to weigh in on applications for well-drilling permits.

Some Californians would like to see deeper changes, arguing that the current water rights system should be dismantled. Those who are pushing for such an overhaul argue the water rights system is antiquated and unjust, with roots in California's history of violence against Indigenous people and racism that prevented non-white people from securing rights in the 1800s and early 1900s.

They also argue the existing system shortchanges environmental needs and won't be sufficient for dealing with scarcity in the future.

The bill that was approved focuses on ensuring that those with senior water rights are obeying the rules and have valid rights, but that measure, like other proposals in the Legislature, doesn't address the system's inequities or negative consequences, said Max Gomberg, a former State Water Board official who works with environmental advocates and has criticized the Newsom administration's policies.

"It's the whole system that needs to be redone," Gomberg said.

"There is no good reason to have continued priority for stuff that was just claimed over 100 years ago, not when we face all these issues of scarcity," Gomberg said. "Everyone who is not one of those water rights holders would benefit from a change in the system."

He said he'd like to see the existing water rights system scrapped and replaced with a new framework that prioritizes the needs of communities, the environment and "basic food security." He suggested that a ballot measure would be one way to remake the system.

"I think there is no effective and equitable climate adaptation in the West — this goes beyond California — without remaking it," Gomberg said. "If it doesn't get remade, every other thing that we do to try to adjust to our changing and aridifying climate will be insufficient."

Last year, a coalition of tribes and environmental groups sought to challenge how the state manages water by filing a civil rights complaint with the Environmental Protection Agency, accusing the State Water Board of discriminatory practices and mismanagement contributing to the ecological deterioration of the Sacramento-San Joaquin River Delta.

The EPA announced in August that it has begun an investigation.

In their complaint, the tribes and environmental groups said the decline of the ecosystem in the Delta is "rooted in white supremacy" because the rights of tribes were ignored when the water rights system was established, and because people of color were prevented from securing water rights well into the early 20th century.

They argued that out-of-date water quality standards in the Delta have led to collapsing fish populations and worsening toxic algae blooms, and demanded that the State Water Board update water quality standards.

State water officials have said they are committed to working with tribes and have taken various steps to address historical inequities, such as adopting a racial equity plan.

# # #

NEW CALIFORNIA LAW BOLSTERS GROUNDWATER RECHARGE AS STRATEGIC DEFENSE AGAINST CLIMATE CHANGE

WESTERN WATER NOTEBOOK: STATE DESIGNATES AQUIFERS 'NATURAL INFRASTRUCTURE' TO BOOST FUNDING FOR WATER SUPPLY, FLOOD CONTROL, WILDLIFE HABITAT

Western Water | September 7, 2023 | Nick Cahill

A new but little-known change in California law designating aquifers as “natural infrastructure” promises to unleash a flood of public funding for projects that increase the state’s supply of groundwater.

A recent change in California law is expected to result in significantly more public funding for groundwater recharge like this state-run project, which diverted floodwater from the San Joaquin River to a Madera County ranch in winter 2023. Source: California Department of Water Resources

The change is buried in a sweeping state budget-related law, enacted in July, that also makes it easier for property owners and water managers to divert floodwater for storage underground.

The obscure, seemingly inconsequential classification of aquifers could have a far-reaching effect in California where restoring depleted aquifers has become a strategic defense against climate change — an insurance against more frequent droughts and more variable precipitation. The state leans heavily on aquifers, drawing about 40 percent of its water supply from the ground during an average water year and up to 60 percent during dry years.

More than $1 billion in state funds could become available to a wide range of projects that replenish groundwater, including flood control improvements and wetlands restoration, according to the Planning and Conservation League and the conservation nonprofit River Partners, which pushed for the designation.

“We’re not talking about [funding] one thing at a time anymore — flood control or recharge or improving wetlands — but now everything.”
~Judy Corbett, Planning and Conservation League board member

“There’s no question this is a critical step,” said Judy Corbett, a board member of the league. “We’re not talking about [funding] one thing at a time anymore — flood control or recharge or improving wetlands — but now everything.”

The new law also positions local water managers and nonprofit groups to potentially tap Proposition 1 funds – a 2014 statewide bond that dedicated $7.5 billion for water projects – and a sweeping climate resilience bond that Gov. Gavin Newsom and lawmakers are planning for the 2024 statewide ballot.

In the world of environmental policymaking, “natural infrastructure” refers to natural landscape features that provide concrete benefits to the public and to wildlife. Wetlands and floodplains, for example, can slow and retain water to reduce flooding while filtering pollutants and providing habitat for fish and water birds.

Bringing Basins into Balance

Adding the designation to aquifers opens doors to a wider array of funding programs. Water suppliers and communities looking to replenish groundwater basins and jumpstart flood control improvements can now compete for state funds on more equal footing with projects to restore riparian forests, floodplains, coastal wetlands and other types of natural or green infrastructure.

Matt Hurley, who helps farmers in Fresno County balance their groundwater use, said the additional funding opportunities could help local water managers comply with California’s Sustainable Groundwater Management Act.

The 2014 law requires local managers of the state’s most depleted aquifers – many of them in the San Joaquin Valley – to end overpumping and bring their basins into balance by 2040 or 2042.

“Clearly river and floodplain-related items are going to get more water in the ground,” said Hurley, general manager of the McMullin Area Groundwater Sustainability Agency. “If we’re trying to deal with groundwater overdraft by recharging to offset it, sure it would be helpful to provide more funds for [floodplain projects].”

In the past, putting water back into a California aquifer wasn’t considered a public benefit under the state’s resources code but rather a strategy water districts and growers used to protect their interests against drought.

Projects to expand floodplains or restore wetlands for wildlife habitat or flood control didn’t qualify for state grants earmarked for recharging groundwater even though these improvements would help replenish water tables tapped for drinking water and irrigation.

Likewise, many groundwater recharge projects that coincidentally provide flood relief and bird and fish habitat missed out on state funds for environmental restoration and flood control.

Recasting Aquifers for Public Good

The solution, proposed by environmental groups, former Assemblyman Roger Dickinson and officials with the California Department of Water Resources, was to expand the state's view of natural infrastructure.

"This bill would add 'aquifers' to a list of examples of aquatic or vegetated terrestrial open spaces for purposes of this definition of natural infrastructure."
~Text of Senate Bill 122

Following a winter of historic snowfall and widespread flooding, lawmakers were eager to talk about ways to store more water underground.

In April, Assemblymember Steve Bennett, D-Ventura, proposed bringing aquifers under the umbrella of natural infrastructure in Assembly Bill 900, saying the expanded definition would increase state grant opportunities for a wider variety of recharge projects.

Bennett's proposal eventually ended up as a single sentence in Senate Bill 122, a 62-page "trailer" bill needed to implement the state budget for the 2023-24 fiscal year.

Ann Hayden, who promotes "climate resilient water systems" for the Environmental Defense Fund, applauded the change, saying it was far overdue for the state to invest in aquifers like it would a dam or irrigation canal.

"We're learning – far too late – that the aquifers need ongoing care and management," Hayden said in an email.

The move comes as California steps up efforts to protect its underground water supply.

Earlier this year, Newsom signed an executive order that temporarily allowed water managers and property owners to pull water from flooded streams and store it underground without a permit. The state estimates nearly 4 million acre-feet of water went back into aquifers this year, enough water to supply 11 million households for a year. The budget trailer bill extends the streamlined floodwater diversion rules through 2028.

The banner 2022-2023 water year created a flood of interest in groundwater recharge and inspired the relaxed regulations, said Paul Gosselin, California Department of Water Resources deputy director of sustainable groundwater management.

"This allows people to plan ahead, invest and start thinking about how to divert water if and when the next big atmospheric river event occurs," Gosselin said.

Capitalizing on ‘Climate Resilience’

With aquifer replenishment now deemed a public benefit, more recharge projects are certain to come online before the next banner water year and increase the state’s ability to corral floodwater.

The change in law also appears to be designed to help aquifer projects capitalize on a new “climate resilience” bond that is likely to land on the 2024 ballot.

“It’s another tool in the box, it means there’s more channels for funding.”
~Charles Delgado, Sustainable Conservation’s policy director, on designating aquifers as “natural infrastructure”

A bond proposal still pending in the Legislature includes hundreds of millions of dollars for groundwater-related projects and states “preference shall be given to natural infrastructure projects.”

The decision to invest in aquifers mirrors a policy California adopted in 2016 when then Gov. Jerry Brown signed legislation that defined the upper mountain watersheds that are the source of water for the State Water Project and federal Central Valley Project as “integral components of California’s water infrastructure.”

A key function of the bill was to make source watershed restoration projects eligible for the same funding as other water collection and purification infrastructure, such as wastewater treatment plants.

Many California water experts cast the expanded natural infrastructure definition as a simple fix that will benefit farms, communities and ecosystems.

“It’s another tool in the box, it means there’s more channels for funding,” said Charles Delgado, policy director at Sustainable Conservation, a California advocacy group.

“It’s really important that we find ways to do projects that not only put water back into the ground,” he said, “but shore up community drinking water supplies, address water quality issues and also safeguard the environment.”

# # #

New permanent water conservation rules are coming to California — see how your city will be affected

Regulations will require cities to use water more efficiently, whether or not a drought is occurring

Mercury News | August 31, 2023 | Paul Rogers

Early morning sprinklers water the foliage in the back yard of a home in Alameda, Calif. in April of 2021. (Laura A. Oda/ Bay Area News Group)

Dozens of California cities could be required to impose permanent water conservation measures starting in about a year — and keep them in place even when the state is not in a drought — under proposed new rules from state water regulators.

The landmark rules are required by two laws that former Gov. Jerry Brown signed in 2018 after a severe five-year drought. Environmentalists and some water districts support them, saying they are critical as the state grapples with climate change and more severe droughts. But some water agencies have been strongly opposed, saying Sacramento is beginning a new era of micro-managing how local communities use water.

Under the new rules, roughly 400 of the California's largest cities and water districts are required to come up with a water-use budget every year beginning Jan. 1, 2025. They could eventually face fines of up to $1,000 a day — and $10,000 a day during drought emergencies — for failing to set and meet appropriate targets.

In general, the Central Valley and Southern California's inland communities could face the biggest cuts, while places where water conservation levels already are higher, including the Bay Area and much of coastal Southern California, would have far fewer or no required reductions in the first few years.

BAY AREA WATER CONSERVATION

A law signed by former Gov. Jerry Brown in 2018 will set water reduction targets for the state's urban water agencies for 2025, 2030 and 2035. Many of the Bay Area's largest water providers are on track to meet them.

Agency	Average service area population	Average use in millions of gallons	Reductions needed to meet standards by: 2025	2030	2035
Alameda County Water District	355,529	14,296	0%	-4%	-7%
Contra Costa Water District	198,000	10,104	0%	-1%	-7%
East Bay Municipal Utility Dist.	1,422,200	61,019	0%	-4%	-7%
Great Oaks Water Company Inc.	104,734	3,421	0%	-7%	-10%
Marin Municipal Water District	189,500	8,379	0%	0%	-1%
San Francisco PUC	879,006	22,487	0%	0%	0%
San Jose Water Company	994,201	37,223	0%	0%	0%

Source: California State Water Resources Control Board estimates

BAY AREA NEWS GROUP

"We see conservation as one tool in the toolbox to address the water supply challenges that are going to result from climate change and a hotter, drier future," said Eric Oppenheimer, chief deputy director of the State Water Resources Control Board.

The new laws make it likely that water agencies will need to take such actions as offering more rebates for home owners and business owners who replace lawns with drought-tolerant plants and who purchase water-efficient appliances. The agencies could also limit the hours and days of lawn watering to meet their targets, even when droughts are not occurring.

The targets will vary by community. They are based on a formula made up of three main factors: a standard of 47 gallons per person per day for indoor water use — dropping to 42 gallons by 2030; an amount for outdoor residential use that varies by community depending on regional climates; and a standard for water loss due to rates of leaks in water system pipes.

This week, state water officials made public the first detailed look of how the new rules could affect each city.

The first threshold, in 2025, would spare a total of 228 cities and water agencies that serve 73% of California's urban population, including nearly all of the Bay Area. They already use water efficiently enough to meet the new state standards, the State Water Resources Control Board estimated.

Those include most of the state's major water providers, among them the Los Angeles Department of Water and Power, the San Francisco Public Utilities Commission, the East Bay Municipal Utility District, San Jose Water Company, city of San Diego and others.

But 80 water agencies representing 15% of the population would need to reduce use by up to 10% starting in 2025, the board estimated. Those include Livermore, Hollister, Newport Beach and Ukiah.

CALIFORNIA GOALS FOR WATER CONSERVATION

A law signed by former Gov. Jerry Brown in 2018 will set water reduction targets for the state's urban water agencies for years 2025, 2030 and 2035.

Reductions to meet: 2025 standards	Number of suppliers	% of suppliers	Area population	% of area population
No Reduction	228	58%	26,793,186	73%
Less Than 5% Reduction	40	10%	2,783,854	8%
5-10% Reduction	40	10%	2,681,617	7%
10-20% Reduction	51	13%	3,012,549	8%
20-30% Reduction	25	6%	1,208,072	3%
Greater Than 30% Reduction	12	3%	236,219	1%
2030 standards:				
No Reduction	97	24%	10,130,884	28%
Less Than 5% Reduction	31	8%	5,222,303	14%
5-10% Reduction	46	12%	7,575,213	21%
10-20% Reduction	88	22%	6,734,273	18%
20-30% Reduction	68	17%	4,180,808	11%
Greater Than 30% Reduction	66	17%	2,872,014	8%
2035 standards:				
No Reduction	70	18%	8,500,134	23%
Less Than 5% Reduction	32	8%	1,887,256	5%
5-10% Reduction	43	11%	6,291,606	17%
10-20% Reduction	83	21%	10,683,097	29%
20-30% Reduction	81	20%	5,009,521	14%
Greater Than 30% Reduction	87	22%	4,343,882	12%

Source: California State Water Resources Control Board estimates

BAY AREA NEWS GROUP

Another 51 water agencies representing 8% of California's urban population would need to reduce their water use by 10% to 20% starting in 2025, the state board estimated. Those include Tracy, Martinez, Fresno, Modesto and Beverly Hills.

Finally, another 37 water agencies representing 4% of the state's urban population would have to cut water use by 20% or more starting in 2025, the state board estimated. Those include Los Banos, Bakersfield, Merced and the Desert Water Agency in Palm Springs.

State water board officials say that the initial targets are their best estimate. The targets could still change because cities and water agencies will be allowed to get credit under the law if they use recycled water or have significant population changes, among other factors.

But the new state estimates clearly show that by the end of this decade, most major water providers could have to reduce their use.

By 2030, the state water board estimated, only 97 agencies representing 28% of the state's urban population would escape additional conservation requirements. Another 88 with 18% of the state's urban population would see cutbacks of 10% to 20%, and 134 representing 19% of the state's urban population would see required cutbacks of 20% or more.

Environmental groups say the rules are common sense. Water that cities save can be used to reduce the severity of mandatory rationing during droughts, said Tracy Quinn, CEO of Heal the Bay, a Los Angeles environmental group.

"When you talk about building new water supplies, they are generally more expensive than water you get from conservation," Quinn said. "Reservoirs and desalination plants are multi-billion dollar projects, and somebody has to pay for those."
Opponents of the laws say that the decisions are best left to local water agencies, and tough state-imposed urban water budgets could harm smaller, less wealthy communities.

"This regulation could have a really significant cost impact on water suppliers and their customers," said Chelsea Haines, regulatory relations manager for the Association of California Water Agencies. "We want to make sure the standards are feasible and are going to be attainable. We want to set California up for a successful water-efficiency future."

Some independent analysts say the rules could spark a major controversy as the state water board imposes them over the next year.

"Why would the state want to get into this business?" said Jay Lund, a professor of civil and environmental engineering at UC Davis. "Most of the urban water agencies are doing a pretty good job. They understand that droughts are getting worse, and seem to be preparing for that in their own ways."

Public hearings on the draft rules begin in October. A final vote by the state water board is expected next summer.

# # #

California regulators propose new water conservation rules
Marin Independent Journal | August 31, 2023 | Paul Rogers

Dozens of California cities could be required to impose permanent water conservation measures starting in about a year — and keep them in place even when the state is not in a drought — under proposed new rules from state water regulators.

The landmark rules are required by two laws that former Gov. Jerry Brown signed in 2018 after a severe five-year drought. Environmentalists and some water districts support them, saying they are critical as the state grapples with climate change and more severe droughts.

But some water agencies have been strongly opposed, saying Sacramento is beginning a new era of micro-managing how local communities use water.

Under the new rules, roughly 400 of California's largest cities and water districts would be required to come up with a water-use budget every year beginning in 2025. They could eventually face fines of up to $1,000 a day — and $10,000 a day during drought emergencies — for failing to write a water use budget or meet their targets.

In general, the Central Valley and Southern California's inland communities could face the biggest cuts, while places where water conservation levels already are higher, like the Bay Area and much of coastal Southern California, would have far fewer or no required reductions in the first few years.

"We see conservation as one tool in the toolbox to address the water supply challenges that are going to result from climate change and a hotter, drier future," said Eric Oppenheimer, chief deputy director of the State Water Resources Control Board.

The new laws would make it likely that water agencies would need to offer more rebates for homeowners and business proprietors who replace lawns with drought-tolerant plants and who purchase water-efficient appliances. The agencies could also limit the hours and days of lawn watering to meet their targets, even when droughts are not occurring.

The targets would vary by community. They are based on a formula consisting of three main factors: a standard of 47 gallons per person per day for indoor water use, dropping to 42 gallons by 2030; an amount for outdoor residential use that varies by community depending on regional climates; and a standard for water loss from leaks in water system pipes.

State water officials recently made public the first detailed look of how the new rules could affect each city.

By 2025, a total of 228 cities and water agencies that serve 73% of California's urban population would not be required to make any changes because they already use water efficiently enough to meet the new state standards, the State Water Resources Control Board estimated.

Those include most of the state's major water providers, including the Los Angeles Department of Water and Power, the San Francisco Public Utilities Commission, the East Bay Municipal Utility District, the San Jose Water Co., the city of San Diego and others.

Marin County's two largest water agencies — the Marin Municipal Water District and the North Marin Water District — will not be required to make reductions until 2035, and those reductions only range from 1 to 2%.

Regardless of the state's targets, the Marin Municipal Water District still aims to reduce water use and expand supply given the effects of the recent drought, said Carrie Pollard, the utility's water efficiency manager.

"For us, it's great that we're meeting the current targets years in advance, but nevertheless we understand that reducing water use through efficiency and conservation is really a key component of our water supply roadmap," Pollard said.

Pollard said that while the state's proposed targets for residential water use reductions are available, the district is still awaiting information on reduction targets for landscaping and the commercial, industrial and institutional sectors.

The North Marin Water District will also consider adjusting conservation regulations and rebates for water-saving appliances and projects in the coming months, said Ryan Grisso, the utility's water conservation and communications manager.

"We've taken conservation seriously for a long time," said Grisso, whose district serves the Novato area and parts of western Marin. "It's kind of been a way of life in Marin since the late 70s. Now we'll implement as needed what we feel are good measures to improve water use efficiency as time goes on."

But 80 water agencies representing 15% of the population would need to reduce use by up to 10% starting in 2025, the board estimated. They include utilities in Livermore, Hollister, Newport Beach and Ukiah.

Another 51 water agencies representing 8% of California's urban population would need to reduce their water use by 10% to 20% starting in 2025, the state board estimated. They include agencies in Tracy, Martinez, Fresno, Modesto and Beverly Hills.

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State water board officials say the initial targets are their best estimate. The targets could still change because cities and water agencies will be allowed to get credit under the law if they use recycled water, have significant population changes, or other factors.

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"When you talk about building new water supplies, they are generally more expensive than water you get from conservation," Quinn said. "Reservoirs and desalination plants are multibillion dollar projects, and somebody has to pay for those."

Opponents of the laws say that the decisions are best left to local water agencies, and tough state-imposed urban water budgets could harm smaller, less wealthy communities.

"This regulation could have a really significant cost impact on water suppliers and their customers," said Chelsea Haines, regulatory relations manager for the Association of California Water Agencies. "We want to make sure the standards are feasible and are going to be attainable. We want to set California up for a successful water-efficiency future."

Some independent analysts say the rules could spark a major controversy as the state water board imposes them over the next year.

"Why would the state want to get into this business?" said Jay Lund, a professor of civil and environmental engineering at the University of California, Davis. "Most of the urban water agencies are doing a pretty good job. They understand that droughts are getting worse, and seem to be preparing for that in their own ways."

Public hearings on the draft rules are scheduled to begin in October. A final vote by the state water board is expected next summer.

# # #

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MID will sell excess river water to farmers who rely on wells. Price is more than expected
Modesto Bee | August 9, 2023 | John Holland

The Turlock Irrigation District demonstrated how it diverts city storm runoff to farms for groundwater recharge on Jan. 18, 2023.

The Modesto Irrigation District has approved a plan to sell excess Tuolumne River water to farmers just outside its boundaries who rely on wells.

The board voted 5-0 on Tuesday to charge $200 per acre-foot for this water, more than double an earlier proposal.

The supply will allow these farmers to reduce groundwater pumping as part of a state mandate for sustainable aquifers. It is expected to be available in seven out of the 20 years in the contracts.

MID has been selling excess water via board votes based on a single year's conditions. It happened this year as well as in 2019 and 2017.

Tuesday's vote allows farmers to make long-term investments in pipes and other devices for tapping MID canals.

"Groundwater is one of our treasures in this community," Director Robert Frobose said, "and we need to protect it for our next generations."

The staff estimated that up to 15,000 acres could get the water each year. MID's core service area is about 58,000 acres.

The Main Canal diverts the Tuolumne near La Grange, but most of the district lies well to the west. This bypassed zone has an aquifer long stressed by farm pumps.

The program allows out-of-district sales in years defined as wet or above normal. They will not happen when conditions are average or worse.

INITIALLY PROPOSED PRICE DREW CRITICISM

The board had earlier discussed charging $80 for the first acre-foot and $60 for each of the next three. An acre-foot is enough water to cover one acre a foot deep. Typical crops need three to four acre-feet over a growing season.

Critics said the price was too low. Many cited the adjacent Oakdale Irrigation District, which charges $200 for an acre-foot of excess water from the Stanislaus River. It has been available in nine out of 10 years, much more often than MID's plan.

Frobose made the motion to bump the price to $200 and got unanimous support.

The vote was 3-2 to approve the overall program. Directors John Boer and Janice Keating favored postponing the matter to the next meeting so other details could be fleshed out. Those details include the contract duration and whether some excess water should be held back to later in each irrigation season.

CALIFORNIA CONTENDS WITH MASSIVE FLOWS

Groundwater recharge has been much discussed as California deals with this year's massive runoff. It also is being done in restored river floodplains and in artificial percolation ponds.

Even with all of that, the Tuolumne and other rivers carried plenty of water out to the Pacific Ocean. This was noted at the MID meeting by Julia Stornetta, general manager of the much smaller Stanislaus Mutual Water Co.

"This is water that is not being used right now," she said. "... It is going out toward the Golden Gate Bridge and into the ocean right now."

# # #

MID did well to raise water sale price. But that's about all they got right
Opinion: Modesto Bee | August 8, 2023 | Garth Stapley

Some orchards outside Modesto Irrigation District boundaries may buy its surface water in 2024. ANDY ALFARO aalfaro@modbee.com

The Modesto Irrigation District board met the absolute minimum needed to sell water to outsiders without devaluing its own customers. But the vote did little to reassure those whose confidence was shaken by a chaotic lead-up to Tuesday's rush job.

Right away, the board's Bob Frobose suggested setting the price at $200 an acre-foot for surface water offered to growers just outside MID boundaries. That's what I — and several others in various meetings, letters and emails — recommended as a starting point.

It's a sight better than the original June proposal of $80 an acre-foot for the first 12 inches, dropping to $60 after, which would represent an illegal gift of public funds and an affront to all district ratepayers, I argued in two previous columns. Both questioned who had come up with such an asinine below-market price, and why.

I also recommended that Board President Larry Byrd "cleanly, publicly and transparently explain all connections — business, political and otherwise — between himself and prospective buyers," including his neighbors and business partners on the east end of Stanislaus County. Such transparency should come easy to someone with nothing to hide. Some orchards outside Modesto Irrigation District boundaries may buy its surface water in 2024. Andy Alfaro aalfaro@modbee.com

That didn't happen Tuesday. Nor did anyone explain the origin of the ridiculous $80-$60 price. Nor did Frobose give any basis or justification before changing it to $200 an acre-foot.

A packed board room and all watching remotely were left to speculate about all three things. That's not what we want or expect from public servants.

The motivation behind the third point — upping the price — comes down to public pressure. The Modesto Chamber of Commerce, attorneys and others sent letters demanding that MID charge market value. Modesto Councilman Nick Bavaro on Tuesday asked the same, as did a Stanislaus County environmental resources representative and others in the audience.

Board members said they received numerous calls and emails, and they responded accordingly. They get points for recognizing how concerned people were at the prospect of selling water at less than the market price, particularly if there were unanswered concerns over who might benefit from a collective loss to the district of more than $7 million a year — the difference between the lower initial price and the one settled on Tuesday.

MODESTO IRRIGATION FUMBLES CONTRACT

But numerous other aspects of the proposed contract remained unsettled, including its duration and concerns for small growers who might find it difficult to compete against large farms on a first-come, first-served basis.

Bob Fores, a Modesto attorney litigating business contracts for 38 years, called this “one of the weaker ones I’ve reviewed” in terms of protecting MID and its customers. He asked that the district take more time to tighten the language of the contract. So did others, including board members Janice Keating and John Boer.

When you take the time to do things right the first time, Keating noted, you reduce the chance of getting sued. “I seriously think we should pump the brakes,” Boer agreed.

Nothing could stop the good ol’ boys’ freight train, though. Nick Blom initially favored postponement but eventually joined Byrd and Frobose for a 3-2 win over Keating and Boer on everything but the price.

Time will tell whether this risky business with a precious community resource — called the Groundwater Replenishment Program — does anything to replenish our groundwater. Thanks to intense public pressure, at least MID will get something closer to a fairer price.

# # #

Modesto Irrigation District Sales Proposal Roils the Waters
The Valley Citizen | July 25, 2023 | Eric Caine

Modesto Irrigation District Directors Nick Blom, Robert Frobose and Larry Byrd 22 Oct 2022
MID Directors Nick Blom, Robert Frobose and Larry Byrd (l to r)

For years, Oakdale Irrigation District (OID) water sales seldom caused more than a flicker of public interest. Let nearby Modesto Irrigation District (MID) even think about a sale, however, and the hue and cry are heard for miles around. That was the case in 2011, when MID proposed selling water to the City of San Francisco. Angry protests followed and the public uproar ended with a resounding defeat for those who would sell “our water” to San Francisco.

The latest proposed sale would send excess MID surface water to out-of-district farmers in eastern Stanislaus County, where thousands of groundwater-dependent acres of grazing land were replaced with almond orchards about the same time MID was considering selling water to San Francisco. The almond orchards depleted the aquifer on Stanislaus County’s east side, one of the last viable aquifers in the San Joaquin Valley.

Today, after an almond boom that made the Valley’s AG giants even bigger and sprouted multi-millionaires like waves of grain, Valley cities suffer hollowed out centers, rising homeless numbers,

and punitive wages to housing ratios. Water made nut farmers wealthy but the money didn't trickle down. Meanwhile, most every Valley aquifer is too drawn down for economical use and much of the land above is sinking as subsidence causes damage in the billions.

If there's any lesson to be learned from this recent history, it's that the overriding interest in water sales should be the public interest. Water sales in general serve too few parties, as evidenced by water wars featuring Stewart Resnick, the Boswell Company and John Vidovich, private parties whose fundamental business principle is, "socialize the costs and keep the profits." All three water powers have profited immensely from the commodification and sales of water, not to mention farming itself. None live in the Valley.

If MID were to sell water in wet years to out-of-district buyers on Stanislaus County's east side, the first priority should be to bring the east side aquifer back up to the level it held prior to the almond boom. East side farmers should be required to show sustainability, with the state of the aquifer the first metric.

The depleted aquifer in the Mehrten Formation should be restored to levels before that rolling hills rangeland was turned into tree-bearing export crops and limits should be placed on how much it can be tapped. Unless the aquifer is restored and protected, the argument to send water east fails completely.

The current focus of the controversy among those for and against selling water to east side farmers is the cost. According to the Modesto Bee, "Selling something like surface water that by definition belongs to all of us — a community resource — at a deep discount amounts to a gift of public funds." The problem with that argument is that both MID and OID have been selling water "at a deep discount" for decades. In-district farmers received water at below-cost-of-delivery prices for years and still pay in the low double figures for irrigation water.

If east side farmers can show a clear public benefit in the form of a restored aquifer, so-called "market prices" for water won't matter as much as the current controversy suggests. Market prices are a moving target in any case; in southern California, water prices have sometimes risen to $2000 an acre foot. Those are the kinds of prices that encourage water predators like John Vidovich to try to corner the market and become an independent broker.

Pumping water in eastern Stanislaus County

With its highly permeable black sands composition, Stanislaus County's east side Mehrten Formation is a natural water bank. In this era of climate change featuring extreme drought years and intense wet years, water security has become a paramount issue worldwide. We already know that underground aquifers are the best way to store water; they act as safe deposit boxes for our most precious asset other than air.

If it can be shown farming above the Mehrten formation is truly sustainable, then we should farm, but that almost certainly means some of the thousands of acres orchards planted there will have to revert to grazing land. With almond prices currently below profitability for many farmers, that decision may already be in the works. Meanwhile, when it comes to water, the paramount interest should and must be the public interest.

Long-term water security in the form of a viable local aquifer is a prime public benefit. It's not just money in the bank, it's priceless savings against another long-term drought and worth more than any price anywhere. MID Directors should base their decision to sell on the viability of our local aquifer, not on someone's idea of "market prices." The best price for MID water is one that puts money in the (water) bank.

# # #

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My City Has Run Out of Fresh Water. Will Your City Be Next?
New York Times | July 19, 2023 | Guillermo Garat, Guest Essay

A vast field of dark brown mud with a shallow river running through it.
The Santa Lucía River at Paso Severino reservoir in Florida, Uruguay, in July.Credit...Ernesto Ryan/Getty Images

MONTEVIDEO, Uruguay — For at least 80 days, ever since drought and mismanagement sapped the drinking water supply of my country's capital, the water that has come out of our taps has tasted terribly of salt and smelled awfully of chemicals. Those of us who can afford bottled water use it for everything. We cook pasta, wash lettuce and make coffee with it, buying more and more plastic water containers that wind up in the dump. When we shower, we keep it short and keep the windows open, because trihalomethane compounds in the steam may be carcinogenic. Washing machines don't foam, and the electric water heaters are failing from a buildup of sodium. Dishwashers leave salty streaks on glasses and plates. Brushing your teeth tastes like taking a gulp of pool water.

At the height of the crisis, sodium and chloride levels rose to double and triple the maximum values allowed by our national drinking water regulations. A few weeks ago, I visited a poor neighborhood on the outskirts of the city, where people had no other option than to drink the tap water. People complained of belly pain and diarrhea. The government warned that children under 2 years of age, pregnant women and people with high blood pressure, kidney failure or heart problems should limit their consumption of the water or, in some cases, avoid it altogether. Supposedly, poor people will now be getting a subsidy to buy bottled water. But that's not enough.

Here in Uruguay, clean water is part of our national identity. Schoolchildren are taught that the country is blessed with abundant and high-quality water, thanks to many large rivers and six great aquifers. For most of our history, we could count on rain to fill these rivers and aquifers. And in 2004, we became the first country in the world to write access to safe drinking water into the Constitution.

But the most severe drought in 44 years, coupled with aging infrastructure and gross mismanagement of the Santa Lucía reservoirs, has rewritten that comforting story. Now the metropolitan area around Montevideo, home to about 60 percent of the nation's 3.4 million people, is living through the consequences.

The Santa Lucía River, which provided a steady flow of fresh water to the capital for more than 150 years, has almost disappeared for some stretches. In February, a reservoir that until recently contained up to five billion gallons of water was sucked nearly dry. Another dwindled, at one point, to just 2 percent of capacity. As the sweet waters from Santa Lucía have emptied, the salty water from the Río de la Plata, an Atlantic Ocean estuary, has intruded into its riverbed. Our main water purification plant doesn't have the technology to remove the salt, so it enters our pipes, our homes, our bodies.

The government has no plan B for this crisis, which could last until October. One senator has tweeted to pray for rain.

As bad as it is here, Montevideo's water crisis is not unique. In 2018, Cape Town started making plans for the chaos that would ensue in the very real scenario that it could run out of water entirely. In Brazil, which owns a significant fraction of the world's fresh water, numerous cities have restricted its use. In Mexico City, 70 percent of the population has access to water for only 12 hours a day, according to a 2017 United Nations study.

The 2023 U.N. World Water Development Report shows that one in four people lacks access to clean water. "We cannot claim surprise at the next drought," Pedro Arrojo-Agudo, the U.N.'s special rapporteur on human rights and drinking water, told me. "No matter how strong and long it may be," he said, "there must be alternative, complementary, supplementary sources," and there must be a plan to "establish priorities during the emergency."

Last week, Mr. Arrojo-Agudo, in a statement with other experts, told Uruguay it "must put human consumption at the forefront, as indicated by international human rights standards," ranking the demand "with an ethical priority." The government took issue with his statement, saying the chemical levels were not as alarming as he claimed and that helpful measures were underway. But the rapporteur knows the problem all over the world is about the same and that rationing people's consumption while leaving industrial or agricultural use unchecked will, as he told me, "wear down more water and generate a greater risk of contamination."

It’s not just our health that’s at risk. The agricultural sector, which is the largest industry in the country, has suffered losses of about 2 percent of Uruguay’s G.D.P. Six in 10 of our companies are now facing production issues. Pharma, food, construction, chemical industries — all of them are in a scramble for water, leaving their employees as anxious at work as they are at home.

How did we get here? Over the past four decades, the nation allowed the agricultural and mining industries to pollute the Santa Lucía and interrupt its natural cycles, damaging the supply that continued to dwindle over three years with little rain. And despite obvious population and economic growth, our country did not invest in drinking water reservoirs, even when the problem started to come into view. Since March 2020, the government declared several emergencies for agricultural producers, granting tax waivers and grace periods. But it waited until June 19 of this year to declare an emergency for the rest of the population.

Now it’s left to scramble. The government is trying to build reservoirs in tributaries and is planning a plant to desalinate water from the Río de la Plata, but that is unlikely to come online in the next three years. The public water company recently started operating new wells in the heart of the city, hoping to load tanker trucks with water from an aquifer and distribute it to hospitals.

Many of my neighbors are drilling, too, hoping to find groundwater for their families. One of them showed me the results of the water quality test. They are scary. My neighbor’s well contained a bacterium called Pseudomonas aeruginosa, which is associated with blood, lung and urinary tract infections. It’s too late for us to engineer our way out on our own.

Over the past two weeks, it rained three inches, and that helped, for the moment. But local weather forecasts, global climate change and irresponsible land use are all pointing us in the same direction. It’s not just Montevideo: Every city in the world needs to start prioritizing its drinking water now, while there’s still half a chance for better outcomes. Water is our most precious resource. Keeping it safe and available must be our first priority. Enough is enough.

# # #

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Officials Hold Ribbon-Cutting For New Advanced Groundwater Treatment Facility
SF Gate | September 14, 2023 | Ruth Dusseault

Standing on top of the largest groundwater well in eastern Alameda County, and flanked by twenty-foot cream-colored water vessels, five board members of the Zone 7 Water Agency, a water wholesaler for the tri-valley, cut the ribbon on an advanced groundwater treatment facility Wednesday in Pleasanton.

The new technology is called Ion Exchange, which uses positive and negative particles to remove PFAS from ground water.

PFAS, or polyfluoroalkyl substances, are widely used, long-lasting chemicals, the components of which break down very slowly over time. Thousands of different PFAS are found in many different consumer, commercial, and industrial products, like hiking gear and non-stick cookware.

According to Zone 7, the new system at the Stoneridge Well in Pleasanton is the first of its kind in Northern California, but it will not be the last.

The Stoneridge well provides 25% of the total groundwater production for the Zone 7 district, which includes Pleasanton, Livermore and the Dublin and San Ramon region. About 15% of the water goes to agriculture, wine growers and olive orchards in Livermore Valley.

In Pleasanton, they have three contaminated wells that are shut down right now, said the city's Mayor, Karla Brown.

There are also three other Zone 7 wells shut down for PFAs in an unincorporated county east of El Charro called the Chain of Lakes. Similar treatment facilities are planned for those wells, said Valerie Pryor, general manager for Zone 7, and a contract has been awarded.

The price tag for the new Stoneridge facility was $16.3 million, with $16 million coming from the California Department of Water Resources through a grant Sustainable Groundwater Management Act.

In 2022, the clean water watchdog organization Riverkeeper Alliance found PFAS present in most of the surface waters of the United States. Since 2021, the U.S. Environmental Protection Agency has enacted new strategies for addressing the chemicals, including measuring their presence and proposing new policies to safeguard the public.

Exposure to some PFAS may be linked to harmful health effects, according to the EPA. Because of their widespread use and persistence, PFAS are found in the blood of people and animals all over the world.

Troubles for the tri-valley region began October 31, 2022, when Zone 7 found high enough levels of PFAS in the area's groundwater for the board of directors and the city of Pleasanton to voluntarily shut the wells.

Mayor Mahoney said the well was shuttered during the drought and the city began thinking about treatment systems that could remove the harmful PFAS.

"This is the culmination of that project," she said.

Zone 7 is contracting with a company that specializes in the disposal of PFAS once they are filtered out, which could happen every twelve to eighteen months.

Zone 7 General Manager Pryor said her agency uses a mix of groundwater and surface water to supply clean water to the region. When it's rainy, they distribute surface water, which has not tested positive for PFAS chemicals.

"During a dry year, everybody can be getting water from the wells," said Pryor.

Zone 7 monitors have found no sole source of the pollution, they said. In addition to urban sprawl and nearby agricultural lands, the residential city of Pleasanton is wrapped around several quarries, and it lies eight miles from the Lawrence Livermore National Lab, which historically tested nuclear and chemical weapons.

"There are some toxic sites around the lab, but we've been monitoring them, and they are contained," said Pryor. "It's just the forever chemical. It's in your pizza box. It gets in the air. It's in rainwater."

# # #

Why Modernizing Infrastructure Will Benefit Our Future Water Supply
California Department of Water Resources | September 7, 2023

The State Water Project (SWP) moves life-sustaining water across the state for 27 million Californians and 750,000 acres of farmland. It supplies families, businesses, crops, and industries with safe and affordable water.

Without modernization of our infrastructure, climate-driven weather extremes and seismic threats will affect how we can deliver this water, risking human health and safety, urban and agricultural economies, and the cost of water to communities.

The modernization work required includes physical infrastructure improvements to how we capture and move water during high flow weather events to store for later use during dry periods. Improving the way we move the water with a proposed tunnel system, called the Delta Conveyance Project, will help protect against interruptions in water deliveries due to earthquakes and the effects of climate-driven weather extremes like rising sea levels and other unanticipated extreme weather.

“Isn’t there another way?” or, “Why can’t we just conserve more?” The proposed Delta Conveyance Project is specifically geared toward protecting and preserving the long-term viability of State Water Project infrastructure.

While alternative supplies and conservation are extremely important for regional sustainability overall, they don’t directly address the functionality of the State Water Project. Alternatives that ignore State Water Project stability, or undermine its future, miss the mark.

Modernizing the State Water Project, by adding new water intakes and creating a new way to move the water, does two important things:

Adapts to climate-driven weather extremes by adding flexibility in how the water moves
Protects against supply disruptions caused by nearby earthquakes
Climate change models indicate that more precipitation will fall as rain in the winter months. The state expects to see more runoff and river flows in the winter than in past years. Infrastructure built to accommodate seasonal patterns of the past cannot accommodate the flashy winter flows that are becoming more common.

Local water agencies across the state are working hard to fortify their respective water supply portfolios, including the 18 State Water Contractors participating in the proposed Delta Conveyance Project. This project neither precludes nor replaces those much-needed efforts.

Californians are no strangers to thinking big and taking on tough challenges, especially when it comes to protecting health and safety. There are many dozens of cities, small towns and retail water agencies across the state that rely in part on the State Water Project, and they are counting on this proposed infrastructure modernization project to help ensure a stable water supply for their families, businesses, and communities into the future.

The proposed Delta Conveyance Project will make the necessary modernizations to the State Water Project to promote sustained reliability. The Department of Water Resources will continue to pursue this and other projects that allow California to prosper and thrive. A future without a functioning State Water Poject is one we can’t afford to accept.

# # #

California water purification facility marks major milestone

Facility to produce 15,000 acre-feet per year of purified water for injection into Southern California's largest groundwater storage basin

Water Finance and Management | September 5, 2023 | Staff Writer

Rendering of the new 13.4 million gallons per day Advanced Water Purification Facility.

The Chino Basin Program (CBP), a program led by the Inland Empire Utilities Agency (IEUA) and partners, has reached a significant milestone as environmental engineering firm Brown and Caldwell completes the preliminary design of a new 13.4 million gallons per day Advanced Water Purification Facility (AWPF), a vital component of the innovative water program.

The preliminary design, developed in partnership with Water Systems Consulting, Inc., provides the technical feasibility, planning-level design, and preliminary costs for the AWPF that can produce 15,000 acre-feet per year of purified water (water for approx. 100,000 people) for groundwater replenishment that meets Chino Basin water quality objectives and integrates the flexibility to meet potential future regulations.

When integrated into IEUA's Regional Water Recycling Plant No. 4 in Rancho Cucamonga, the new AWPF will treat recycled water from three sources, conveying purified water to a new aquifer replenishment wellfield for indirect potable reuse. The purification process will be comprised of equalization, microfiltration, reverse osmosis, ultraviolet/advanced oxidation process disinfection, and product water conditioning. In coordination with stakeholders, the stored water will be extracted over the program's 25-year duration.

This milestone aids in the development of the CBP, a first-of-its kind program that will deliver water security, flexibility, and affordability benefits to both northern and southern California. The CBP is comprised of several water treatment, storage, and delivery projects designed to help increase local supply reliability. Once implemented, the projects will address the immediate needs of the region while unlocking the potential for additional storage and water recycling projects in the future.

Brown and Caldwell Project Management Director Andrew Lazenby commented on the new facility's role within the CBP and integration with IEUA's recycled water program expansion:

"We congratulate IEUA and program partners on this significant milestone vital to the program's success. The AWPF is central to CBP operations and considered key infrastructure for IEUA to diversify its water portfolio while maintaining compliance with local groundwater replenishment and augmentation requirements."

The CBP's network of new infrastructure and upgrades will begin construction in 2026, with operations anticipated to be phased in by 2030.

# # #

Is Water Recycling the Answer to the Bay Area's Drought Woes, Algae Blooms?
KQED | August 22, 2023 | Ezra David Romero

Lakeisha Bryant, a spokesperson for Valley Water, holds a beaker filled with purified water at Silicon Valley Advanced Water Purification Center in San José on Aug. 14, 2023. The facility uses microfiltration, reverse osmosis and ultraviolet light to purify treated wastewater. (Beth LaBerge/KQED)

When recycled for drinking, the millions of gallons of water that Bay Area residents flush down toilets and showers every day could be cleaner than the pristine Hetch Hetchy water that flows from many taps in the region, according to a top California water official.

“Both are drinkable and pure,” said Darrin Polhemus, deputy director of the drinking water division of the state’s Water Resources Control Board. Recycled water for human consumption, he added, will be so clean that workers will have to add minerals to it, because the purification process strips the water of necessary minerals that make it drinkable.

But recycling the region’s used water for drinking, a process called “direct potable reuse,” is not happening anywhere in the Bay Area — at least not yet. Polhemus’ agency, however, is working to change that by drawing up rules for how local water agencies can pump ultra-purified water straight into the pipes that connect to people’s homes.

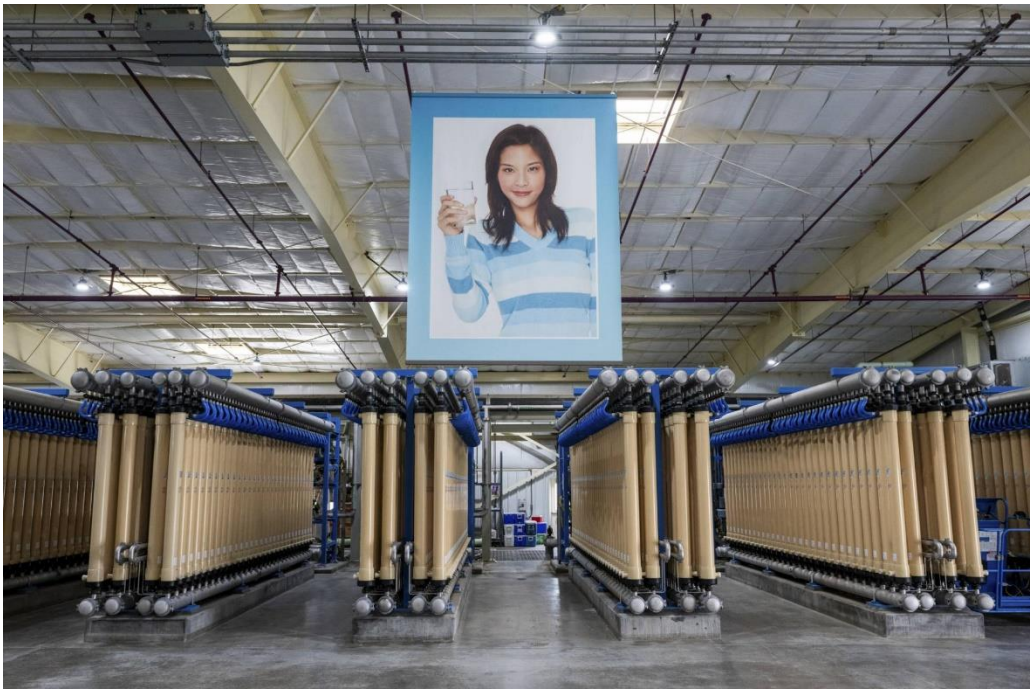
Water agencies that opt in early would either have to build entirely new water recycling plants, join forces with other water companies, or add water reuse capabilities to their operations. The entirely optional regulations could be official next year and, within half a decade, some agencies may be using the technique to help drought-proof their water portfolios.

‘It’s going to be purified water that’s going to have the highest level of treatment ever, and it will be monitored at the beginning, middle and end.’
Darrin Polhemus, deputy director, California’s Division of Drinking Water

“It’s going to be purified water that’s going to have the highest level of treatment ever, and it will be monitored at the beginning, middle and end of the purification process,” Polhemus said. “It is the highest treated water we’re ever going to produce in the state.”

Some water and climate experts believe recycling wastewater for human use is a climate adaptation strategy that, if employed wisely, could be a remedy for both future water shortages and the toxic algae blooms that have begun to perennially plague the San Francisco Bay.

“The impacts of climate change need solutions commensurate to the issue, and water recycling for human use is the reimagining we need,” said William Abraham Tarpeh, an assistant professor of chemical engineering at Stanford University.



A photo hangs above the microfiltration systems at Silicon Valley Advanced Water Purification Center in San José on Aug. 14, 2023. (Beth LaBerge/KQED)

The purification process in a nutshell: Once soiled water swirls down the drain or toilet and reaches a wastewater plant or recycling facility, it is forced through a series of tiny tubes, pipes and filters and hit with ultraviolet light and other treatments like reverse osmosis and hydrogen peroxide, to strain and scrub out bacteria and parasites.

“It is beat up a lot. It’s the same technology used to desalinate ocean water,” said Lakeisha Bryant, a spokesperson for the Santa Clara Valley Water District, which operates the Silicon Valley Advanced Water Treatment Purification Center in San José. Similar to most other agencies in Northern California, the water purified in the facility is currently only used for things like landscape irrigation, cleaning buildings, industrial cooling, some agriculture and toilet flushing — but not human consumption. Some agencies even sell the recycled wastewater to oil refineries to generate steam to make fuel. Others hope to pump it deep into the earth to recharge depleted aquifers.

Valley Water aims to use recycled wastewater for at least 10% of the county’s total water demands by 2025, its website states.

And while none of that will be for human consumption, the agency is also attempting a small-scale pilot project to bottle water for human use over the next year in preparation for the new statewide rules.

Lakeisha Bryant, of Valley Water, samples a bottle of recycled water at Silicon Valley Advanced Water Purification Center in San José on Aug. 14, 2023. (Beth LaBerge/KQED)

“It will be good enough for people to drink, and that will be a huge game changer when it comes to public perception,” said Lei Hong, operations manager at the South Bay plant.

In addition to the state’s impending water recycling guidelines, another impending regulation, set to roll out next spring, will have far-reaching effects in the Bay Area. All 37 wastewater treatment plants across the region will be required, via a permitting process, to reduce the sheer volume of treated wastewater they pump into the bay.

The plethora of microscopic elements — like nitrogen and phosphorus — in that water is a smorgasbord for the single-tailed algae that darkened the water rusty brown in parts of the bay the past two summers, and last year killed thousands of fish.

Eileen White, executive officer of the San Francisco Bay Regional Water Quality Control Board, which will issue the permits, said the new rules could force wastewater agencies to reduce their output of this algae food by as much as 50%, with the goal of eliminating the nutrient “buffet” that algae love feeding on.

That exact percentage, however, is still an open point of debate. White’s team is meeting with water agencies across the region and said they will use the best science to determine the exact percentage.

“We’re looking at very significant reductions given what occurred last summer,” she said.

Just 10% of all the water that flows into wastewater plants in the region today is recycled, White said, noting that while her board has encouraged local water agencies to increase their recycling capacity, there is currently no direct requirement to do so.

Lorien Fono, the executive director of the Bay Area Clean Water Agencies, which represents the five largest wastewater treatment agencies in the Bay Area, said there are significant barriers to turning wastewater into drinking water. The big one: price.

It can cost more than $1 billion to establish one water recycling project, a cost many agencies consider prohibitive, even with the help of available state and federal grants. Space for the new plants and jurisdictional issues are also major roadblocks. Only some wastewater agencies are water suppliers, so there would need to be collaboration across separate agencies and private companies.

“Recycled water is in its infancy in our region,” Fono said. She said the barriers, mostly cost and limited land, don’t make the Bay Area an ideal place for water recycling for human consumption.

For many agencies, geography is also a major limitation for expanding water recycling capacity.

Amit Mutsuddy, director of wastewater for the East Bay Utility District, whose plant is sandwiched between three freeways, said he doesn’t think direct potable reuse is a likely option because of the hefty price tag and limited space.

A sign says, ‘Recycled Water in Use’ outside of the Silicon Valley Advanced Water Purification Center in San José on Aug. 14, 2023. (Beth LaBerge/KQED)

“We are landlocked, so we cannot expand,” he said, adding the agency is experimenting with other practices to decrease nutrients.

‘It will be good enough for people to drink, and that will be a huge game changer when it comes to public perception.’ Lei Hong, operations manager, Santa Clara Valley Water District

Mutsuddy’s site continuously pumps treated wastewater into the bay, several hundred feet from the shore, via a metal pipe 30 feet under the water. Much of that could be returned to the water supply, if recycling became a feasible option.

“This is an incredibly important moment,” said Meagan Mauter, a Stanford University environmental engineering professor, whose lab focuses, in part, on using renewable energy to meet the extensive power demands of wastewater treatment plants.

“We need to move towards the mentality that this is what the region needs to be thinking about in order to ensure the resiliency and affordability of our water supplies,” she said.

# # #