Sent via Electronic mail to WSIPComment@cwc.ca.gov

December 6, 2021

Members of the California Water Commission
P.O. Box 942836
Sacramento, CA 94236

RE: WSIP Pacheco expansion, December 15, 2021; unjustifiable costs, impacts

Dear Commissioners:

Thank you for the opportunity to comment on the proposed expansion of Pacheco Reservoir (PRE) being considered by the CWC (December 15 meeting) for funding through the Water Storage Investment Program (WSIP). The project arose as one of the alternatives suggested to correct the San Luis Reservoir low point/algal bloom problem.

In early studies, however, Pacheco Reservoir Expansion was eliminated from consideration "related to the acceptability and effectiveness criteria, because it had more potential for environmental effects and the greatest costs."[1] Both PRE costs and environmental impacts are indeed greater than can be justified, making the project infeasible, as subsequent information has shown.

Cost-benefit doesn't compute

PRE's projected cost has risen to over $2 billion (more than twice the original estimate). A recent cost-benefit analysis (dated Nov. 29, 2021) by Dr. Jeffrey Michael reported on the infeasibility of the project:

> The vast majority of monetized benefits are unsupported and severely overstated in the [Santa Clara Valley Water District, Valley Water, VW], Feasibility Documentation. It is apparent that an accurate benefit-cost analysis is not even close to supporting the $2.12 billion cost to Valley Water ratepayers and the State of California, and the public benefits are far too low to justify the nearly $500 million award Valley Water seeks from the WSIP.

Dr. Michael determined that "Valley Water's claimed public benefits are more than twenty times the maximum plausible value of public benefits." After identifying findings that pointed to ignored data and risks, VW's overstatement of water supply and ecosystem benefits, etc., Dr. Michael further stated: "In conclusion, as a result of multiple fatal errors in the Feasibility Documentation, there is an insufficient basis for the Commission to find that the Pacheco Dam project is economically and financially feasible."

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[1] San Luis Low Point Improvement Project Environmental Impact Statement / Environmental Impact Report, Appendix A1, Alternatives Development, A1-5 DRAFT – July 2019, accessed 12/6/2021, available at: https://files.ceqanet.opr.ca.gov/37062-3/attachment/i3oqCBqEZPa1STmO-6HJwnEsGCnHx3-RZARylnNGqNq_61xx9ACgryTPauUNyGezwKpBF7LofcT7maMV0

Environmental and other resources would suffer indelible harm

Moreover, the basis for the claim of downstream benefits to steelhead should be re-evaluated in view of a University of California at Davis (UCD) study[2] that recognizes that dams do not adequately support cold-water ecosystems—critical in view of the VW claim that the new Pacheco Dam and Reservoir would benefit downstream steelhead, a unique form of native trout. As a UCD publication explained the study's results: "Dams poorly mimic the temperature patterns California streams require to support the state's native salmon and trout—more than three-quarters of which risk extinction."[3] Ann Willis, one of the study's authors, said: "It is no longer a good investment to put all our cold-water conservation eggs in a dam-regulated basket."[4]

As the U.S. Fish & Wildlife service has noted, dam removal (not construction) allows natural flow patterns, to which native plants and animals are accustomed, to return to their original configuration. Benefits accrue as the environment returns to the pre-dam conditions in which those fish evolved.[5]

Significant negative impacts on water quality, paleontological resources, air quality, greenhouse gas emissions, visual resources, noise, traffic conditions, hazards, terrestrial resources, and cultural resources would occur with Pacheco Dam Expansion, as identified in the Draft EIS/EIR. Altered streamflow downstream of the dam along Pacheco Creek, and land use and aquatic resources would also be harmed. These impacts are serious and cannot be adequately mitigated. The project should be found infeasible due to significant identified problems. Other projects under consideration would better meet WSIP, Water Code and California Code of Regulations requirements.

We include below, attached as part of this document, our previous letters regarding Pacheco Reservoir Expansion (October 19, 2021 to CWC, and March 12, 2021 to SCVWD) for your consideration in preparation for your December 15 meeting considering Pacheco feasibility.

Thank you for considering this information.

Best regards,

Alan and Meg Giberson

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[2] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0256286
[3] https://www.ucdavis.edu/climate/news/dams-ineffective-cold-water-conservation
[4] Ibid.
[5] https://www.fws.gov/southeast/pdf/fact-sheet/dam-removal.pdf)

[Please see next page for October 19, 2021 Giberson letter to CWC]

Sent via Electronic mail to WSIPComment@cwc.ca.gov

October 19, 2021

Honorable Members of the California Water Commission
P.O. Box 942836
Sacramento, CA 94236

RE: Water Storage Investment Program, Pacheco expansion

Dear Commissioners:

We write out of concern about the proposed expansion of Pacheco Reservoir (PRE) under consideration by the CWC for funding through WSIP. With continuing climate change, other changed circumstances, and new information, the selection of this alternative to the San Luis Low Point Improvement Project (SLLPIP) appears unreasonable.

The SLLPIP was proposed to improve water quality in San Luis Reservoir (SLR), which suffers from algal bloom, especially during low water events. The Bureau of Reclamation released an environmental study looking at several options—among them: raising the height of the dam at San Luis, building lower intake pipes, changing the way the district (Santa Clara Valley Water District/District/SCVWD/Valley Water) filters and treats its water, and building the new Pacheco Reservoir.

Several problems, outlined below in summary fashion, indicate that the PRE would not be an advisable option for addressing the SLLPIP.

Cost: Total project cost has risen to $2.5 billion, far above the initial estimates, and could rise more. https://www.mercurynews.com/2021/01/12/2-5-billion-pacheco-dam-project-moves-forward-despite-cost-increase/ This likely renders the project less than cost effective. (The CWC staff had previously found: "The maximum eligibility amount for this project is $484.55 million and the project's total capital cost is $969.10 million."

No net water quality or habitat improvement:

- HABs: Diversion of water from SLR for the Pacheco Reservoir Expansion (PRE) had been determined not likely to affect water quality in SLR because of San Luis' "regular refill during fall and winter".
https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=39561
However, San Luis Reservoir is currently at 12% capacity (25% of average as of October 3, 2021). And climate change has been recognized as including "increased average temperatures, more extreme hot days, fewer cold nights, … shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year (California Natural Resources Agency 2009)".

https://www.parks.ca.gov/pages/21299/files/sanluisrmp-gp_feis-feir_chap_2.pdf The past water year clearly showed that increased temperatures combined with less rainfall and dry ground mean less runoff occurs to surface reservoirs. With uncertain snowmelt and less water to refill reservoirs, the 140,000+ acre-feet that Pacheco would drain from SLR could have a significant negative impact on HABs in SLR. Average summertime temperature highs at San Luis Dam in 2012 ranged from 86+ degrees F to 91+ degrees. Inexorably, those numbers will increase with climate change.

• Harm from SCVWD's diversion of CVP water: According to Bureau of Reclamation's 2019 DEIS/EIR, "SCVWD would be able to fully divert its CVP allocation" earlier in the year to avoid interrupted delivery of CVP deliveries from San Luis Reservoir in low point years." SCVWD could therefore take more water from SLR, leaving SLR more susceptible to algal blooms and other identified low-point problems, exacerbating those problems. As we have seen this year, the early diversion of water to agriculture in California's south has not left enough for cities and other uses.

• Local creeks not primary water source for PRE: "The primary water sources to fill the expanded reservoir would be natural inflows from the North and East Forks of Pacheco Creek." https://cwc.ca.gov/-/media/CWC-Website/Files/Documents/2018/WSIP/DeterminationsPacheco.pdf CVP water (SCVWD's and SBCWD's) was to be a supplemental source from San Luis Reservoir. (See above URL.) But, those creeks, inland in a dry landscape, also suffer from the same drought that affects all watersheds in the area. Further, SCVWD Director Gary Kremen commented in an open Board meeting that he didn't know what they would fill Pacheco with if they didn't have the Delta tunnel(s).

• **Adverse effect on Pacheco Creek**: It was determined previously that PRE "would not adversely affect beneficial use of Pacheco Creek" and that it would "provide Ecosystem Improvement to Steelhead habitat" (monetized public benefits determined by SCVWD). But, according to a study published in the journal PLOS ONE by the University of California, Davis, "Dams poorly mimic the temperature patterns California streams require to support the state's native salmon and trout — more than three-quarters of which risk extinction." https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0256286 The purported benefits of PRE on Pacheco Creek stream habitat should be reevaluated in view of this UCD study. It appears unlikely that proposed project will advance the long-term objectives of restoring ecological health.

Floods: A new Pacheco Dam was touted in 2020 as a flood mitigation measure (non-monetized flood control benefit), yet few parcels in Santa Clara County are subject to flooding from Pacheco Creek, which drains to the Pajaro River and Monterey Bay. Instead of installing a new $2 billion-plus dam on Pacheco Creek, land in the Soap Lake Basin, which straddles Santa Clara and San Benito County boundary, could— like the 937 acres recently acquired that provide flood protection in Coyote Valley— be used to contain flood waters.

Thank you for considering these points. The Pacheco Reservoir Expansion project makes less and less sense as details of the likely costs and dwindling benefits accrue. We attach to this email our 3/12/2021 comment letter sent to Valley Water regarding its Environmental Impact Report for the Pacheco Reservoir Expansion Project. We would be pleased to be notified of further opportunities to comment on this proposed reservoir expansion.

Respectfully submitted,

Alan and Meg Giberson
agmglwv@gmail.com

[**Please see next page for March 12, 2021 letter to CWC]**

March 12, 2021

Via electronic mail: PachecoExpansion@valleywater.org

RE: Environmental Impact Report for the Pacheco Reservoir Expansion Project, Comment Letter

Dear Valley Water Board of Directors and staff:

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the Pacheco Reservoir Expansion Project. Pursuant to notice, we are pleased to submit these comments by the March 12, 2021 due date.

The Pacheco Reservoir Expansion alternative is a product of the San Luis Low Point Improvement Project search for ways to address San Luis Reservoir water quality and quantity/access issues ("low point" issue) associated with conditions occurring in summer months when water levels are low and algae can interfere with water deliveries. Extant treatments were judged inappropriate for dealing with the algae problem.

The Pacheco Reservoir Alternative was previously eliminated by the U. S. Bureau of Reclamation "related to the acceptability and effectiveness criteria, because it had more potential for environmental effects and the greatest costs." (https://files.ceqanet.opr.ca.gov/37062-3/attachment/i3oqCBqEZPa1STmO-6HJwnEsGCnHx3-RZARylnNGqNq_61xx9ACgryTPauUNyGezwKpBF7LofcT7maMV0). This finding was subsequently derailed by Santa Clara Valley Water District's (SCVWD, VW) application for funding under the WSIP program along with its claims of environmental benefits from the dam. However, new revelations about increased costs and reconsideration of environmental harm from potential extension of the reservoir into Henry Coe Park should preclude the Pacheco Reservoir expansion project.

The recent huge increase in cost of the Pacheco expansion project—from $1.3 billion to $2.5 billion—should rekindle Reclamation's earlier concerns and focus attention on other water resources that can supply reliability, improved water quality and equal or improved environmental and ecosystem benefits. The "low point" issue can be addressed without the proposed Pacheco new dam and reservoir expansion from 5500 af to 140,000 af capacity, cost over a billion dollars more than original estimates, and with likely further cost escalation, given geologic and construction unknowns.

The proposed expansion of San Luis Reservoir, for instance, via the Sisk Dam raise will provide an additional 130,000 acre-feet (af) of storage in San Luis Reservoir, producing additional water supply for two million people, over one million acres of farmland and 200,000 acres of wildlife refuges, according to the B.F. Sisk Dam Raise and Reservoir Expansion Project's Supplemental Environmental Impact Statement/Environmental Impact Report. This 130,000 af of extra water alone should obviate the need for the proposed new Pacheco dam and reservoir.

The proposed Pacheco Reservoir expansion—really a dam removal to be replaced by a new, much larger dam and reservoir one-half mile upstream on the same tributary—should not be constructed as planned. Instead, other, cost-effective water supply improvement measures

and considerations available to the Santa Clara Valley Water District (SCVWD) should be considered first. Those other resources include, without limitation:

- Groundwater storage: Stanford Water in the West research has noted that surface water storage behind dams is five to nine times as expensive as groundwater. (https://news.stanford.edu/2016/07/21/cost-effective-path-drought-resiliency/, http://waterinthewest.stanford.edu/sites/default/files/Storing_Water_in_CA.pdf)
- Repair of existing dams (Anderson, Almaden, Calero and Guadalupe) could provide 55,000 af reclaimed storage.
- More and better reuse of wastewater from wastewater treatment plants (WWTPs) could supply tens of thousands of acre-feet of water. The total reuse of about 24,000 acre-feet per year (afy) potable water proposed recently by VW does not begin to address the hundreds of thousands of afy discharged to SF Bay from WWTPs. For instance, although the San Jose-Santa Clara WWTP, has a dry weather flow design capacity of 167 mgd (187,040 afy), it is limited to 120 mgd (134,400 afy) dry weather discharge "to control salt marsh conversion and protect endangered species" according to a SF Regional Water Quality Control Board staff report from March 11, 2009. (Ten mgd, or 11,200 afy, is allocated for non-potable reuse, NPR.)
- Capture and reuse of local stormwater would be another important source. As UCB distinguished professor David Sedlak noted in a 2015 TED talk, if the city of San Jose captured and stored just *half* of the stormwater that falls within the city limits each year, it would have enough water for the entire year. (https://www.ted.com/talks/david_sedlak_4_ways_we_can_avoid_a_catastrophic_drought)
- Water treatment enhancement: now that adequate filters have been put in place, local water agencies can use local stormwater flows formerly judged too "turbid" to replenish local aquifers. (http://www.mercurynews.com/2017/03/02/water-district-perc-ponds-pass-on-turbid-water-full-of-sediment/).
- New and enhanced raw water treatment capabilities could treat San Luis Reservoir water and reduce or eliminate interrupted deliveries when algae blooms are in the vicinity of the Pacheco Intake—as well as eliminating the need for a new Pacheco Reservoir. Such treatments have progressed (upgrades to area WWTPs, for instance) but should be given further consideration and review.

Given increasing temperatures from climate change with concomitant increasing toxic algae/cyanobacteria issues (harmful algal blooms, HABS), water quantity and quality are better addressed without construction of yet another large dam in an inland area where daily temperatures *average* over 80 degrees F. from June to September. Also, the area surrounding the proposed Pacheco dam is relatively dry and would not contribute much to the reservoir's capacity.

Similarly, evaporative losses can be considerable, given that "reservoir evaporation in arid and semiarid regions is substantial, and it represents an important consideration for the future of water management in a water-scarce environment." (https://journals.ametsoc.org/bams/article/99/1/167/216151/Reservoir-Evaporation-in-the-Western-United-States) Evapotranspiration in California has been reported at approximately 2 maf/year from reservoirs and canals. (https://californiawaterblog.com/2019/05/12/some-innocent-questions-on-california-water-part-i/) Average urban water use is 7.9 maf/y (average

of annual use 1998-2015) according to a PPIC report based on DWR statistics. (https://www.ppic.org/publication/water-use-in-california/)

The new Pacheco dam/ reservoir has been called a "source" of new water. However, Pacheco is not actually a "source"; rather it would store the rather low-quality water that comes primarily from San Luis Reservoir, which water in turn comes from the Delta. It is important to observe the policy expressed in the Delta Reform Act that California should "reduce reliance on the Delta in meeting California's future water supply needs through…investing in improved regional supplies, conservation and water use efficiency." Cal. Water Code § 85021.

Other water, as mentioned above, could compensate for Pacheco water. US Fish & Wildlife notes: "Safety and environmental benefits of dam removal are priceless. (See discussion of harmful effects of dams, and the benefits of dam removal at: https://www.fws.gov/southeast/pdf/fact-sheet/dam-removal.pdf) Dam removal allows natural flow patterns, to which native plants and animals are accustomed, to return to their original configuration. With Pacheco removal, such benefits could accrue to the federally threatened steelhead as the environment returns to pre-dam conditions in which those fish evolved.

Dam removal, in some instances, has been found to be more economical than allowing the dams to continue, saving between $5.4 billion and $12.4 billion—even where dams are producing hydropower. (https://www.eenews.net/stories/1061355907)

A 2014 survey by Theodore Grantham of UC Davis and Joshua Viers of UC Merced suggested other ways of dealing with California's overallocation of water. The solution, they wrote, is to "bring California's water allocation system into the 21st century. That means innovations in water use, new recycling and storage technology, and a modernization of the legal landscape. *It doesn't mean building multibillion-dollar dams that yield relative droplets of water by taking them away from some users and giving them to others. That's 100-year-old thinking, and we need to move past it.*" "100 years of California's water rights system: patterns, trends… uncertainty", https://watershed.ucdavis.edu/files/content/news/WaterRights_UCDavis_study.pdf. [emphasis added]

Rather than ameliorating the effects of climate change, dams are actually responsible for contributing to climate change by significantly increasing greenhouse gas (GHG) emissions from their operations, according to several studies, including an October 2016 study, which posited reservoirs' production of as much as 1.3% of human-caused GHG. (Greenhouse Gas Emissions from Reservoir Water Surfaces: A New Global Synthesis, available at https://academic.oup.com/bioscience/article/66/11/949/2754271; another discussion of dam/reservoir problems is available at: https://www.sciencedaily.com/releases/2018/11/181113141804.htm, discussing supply-demand cycle and the reservoir effect).

Water storage reservoirs have been found to contribute as much GHG as Canada, significant especially because of the methane component of the emissions. (https://www.newsdeeply.com/water/community/2016/10/25/study-reservoirs-a-significant-contributor-to-climate-change, referencing the Oxford, October 2016 study.)

This is in addition to GHG from new dams' manufacture, transportation, and construction that creates millions of pounds of carbon dioxide. Cement is reportedly responsible for about 8% of the world's carbon dioxide emissions. (**https://www.bbc.com/news/science-environment-46455844)** That report indicated that "[i]f the cement industry were a country, it would be the third largest emitter in the world - behind China and the US. It contributes more CO2 than aviation fuel (2.5%) and is not far behind the global agriculture business (12%)."

We request that the proposal to build a new Pacheco dam and reservoir—with their dubious benefits and increasing costs— be rejected, and that full consideration be given to other solutions and to other water sources that reflect improved technology available here in Silicon Valley, and a 21st century water vision.

Respectfully submitted,

Alan and Meg Giberson
Los Gatos, California

Cc: Todd Sexauer, tsexauer@valleywater.org