April 17, 2023

SENT VIA EMAIL (cwc@water.ca.gov)

Chair Matthew Swanson and California Water Commission Members
California Water Commission
P.O. Box 942836
Sacramento, California 94236-0001

RE: Pacheco Dam Project Reevaluation Request

Dear Chair Swanson and Members of the California Water Commission:

This letter is written on behalf of the Stop the Pacheco Dam Project Coalition, Sierra Club California, and the Sierra Club Loma Prieta Chapter. Our groups are concerned that the Pacheco Dam Project ("project") does not meet public funding requirements under Proposition 1 and has failed to progress in a satisfactory manner.

Based on discussions at the March 15, 2023, California Water Commission ("Commission") meeting and the March 16, 2023, Santa Clara Valley Water District ("Valley Water") Board meeting, we request that the Commission require Valley Water to provide updated information regarding why the project has been delayed several years and whether the project is still technically and financially feasible, and for the Commission to determine whether the project's Water Storage Investment Program ("WSIP") funding should be reconsidered.

New Information Regarding the Commission's Authority and Its Ability to Obtain Updated Information from Project Proponents

Agenda item 9 of the Commission's March 15, 2023, meeting included an update on the progress of the WSIP projects.[1] During the Commission's discussion of the item, several Commissioners requested clarification about what actions could be taken if projects are not progressing in a satisfactory manner. Commissioner Makler stated that he

[1] The meeting agenda can be accessed at: https://cwc.ca.gov/Meetings/All-Meetings/2023/Meeting-of-the-California-Water-Commission-Mar-15-2023.

would like to know whether the Willow Springs Water Bank project is moving forward sooner rather than later in order to reallocate those funds. Commissioner Makler requested additional briefing from the Willow Spring project proponents to discuss the project's progress.

Commissioner Steiner verified with staff that the Commission has the authority to request project proponents to provide an update regarding what has been done, and what is anticipated to be completed.[2] Further, the Commissioner noted that internal deadlines for the project proponents may be provided by the Commission to ensure adequate progress is being made. The Commission's counsel clarified that the Commission may request updates, and could decide at a properly agendized meeting that a project is not appropriately progressing, and make additional recommendations or determinations.

Valley Water's Draft Environmental Review Is Inadequate and Is Nowhere Near Complete

The Pacheco Dam review process is still incomplete and is extremely behind schedule. Apparently in order to maintain funding eligibility under Proposition 1 (see Cal. Code Regs., tit. 23, § 6013, subd. (f)(2)), Valley Water hurriedly released its Draft Environmental Impact Report ("DEIR") on November 17, 2021.[3] The proposed project described in the DEIR was a hardfill dam, even though the Department of Water Resources ("DWR") Division of Safety of Dams ("DSOD") had already rejected the hardfill dam proposal in October 2021; this was formalized in a November 1, 2021 letter. (Exhibit 1, November 1, 2021, DSOD Letter.) The DEIR thus focused its analysis on a proposed project that had already been deemed technically infeasible.

In addition to analyzing an infeasible proposed project, the DEIR's content was woefully inadequate. Numerous public agencies, both state and federal, along with dozens of nonprofit and tribal entities, submitted hundreds of letters describing the document's extensive inadequacies.[4] To rectify these deficiencies, Valley Water now

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[2] The video recording can be accessed at: https://www.water-ca.com/archives.html. The relevant discussion occurs between 1:22:00 and 1:53:20.

[3] The Pacheco Dam Project DEIR can be accessed at: https://www.valleywater.org/node/1898.

[4] Many of the public comments can be accessed at: https://stoppachecodam.org/public-concerns/draft-environmental-impact-report-deir-comments-2022/.

proposes to produce another DEIR in May 2025.[5] Moreover, although the new Dam project would require federal environmental review under the National Environmental Policy Act (42 U.S.C. § 4332 et seq.), that review process has not yet formally begun.

Valley Water should explain why it would take more than two years to produce a recirculated DEIR and a Draft Environmental Impact Statement, along with how it will address the numerous problems that plagued its last round of environmental documentation. Gathering this information is not only important to evaluating the project's feasibility, but is also intertwined with the State's concerns about delays in Proposition 1 funding.[6]

Too Much Funding Has Already Been Wasted on Pacheco Dam

As determined at the March 15, 2023, Commission meeting, the Commission can choose to rescind a project's funding and reallocate those funds to other projects. Valley Water obtained the second-highest funding award at $504,141,383.[7] Valley Water has already spent more than $60 million with only a faulty DEIR, and an infeasible project design to show for it. The Commission should not continue to spend public funds on a project that does not appear to be financially or technically viable.

Additionally, as the cost has continued to increase, the cost-benefit analysis provided at the Commission's June 28, 2018 meeting is no longer accurate.[8] The PowerPoint Presentation for that meeting stated that the project's benefit/cost ratio was 1.12. (Exhibit 2, June 28, 2018, Application Scores and Commission Determinations Presentation, p. 14.) This ratio was obtained because the total project benefits were

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[5] The updated timelines for the WSIP projects can be accessed at: https://cwc.ca.gov/-/media/CWC-Website/Files/Documents/2023/03_March/March2023_Item_9_Attach_1_PowerPoint_Final.pdf

[6] Governor's Office Fact Sheet: 6 Ways California is Harnessing Winter Storms to Boost Water Supplies [The Natural Resources Agency established a strike team to help move projects toward completion.] The document can be accessed at: https://www.gov.ca.gov/wp-content/uploads/2023/02/FACT-SHEET_-Winter-Storms-and-Water-Supply-updated.pdf?emrc=63fbfb84899bf.

[7] See Proposition 1, Chapter 8 Conditional Amounts, available at: https://cwc.ca.gov/Water-Storage.

[8] California Water Commission Meeting June 28, 2018, available at: https://cal-span.org/meeting/cwc_20180628/.

claimed to be $1.222 billion,[9] and the project cost was estimated at $1.094 billion. (Exhibit 2, p. 14.) This is no longer the case. Capital costs are now estimated to be roughly $2.7 billion (with a total project cost of roughly $6 billion), and there is no indication that benefits have increased. Thus, the benefit/cost ratio is now roughly 0.45. Therefore, not only has Valley Water failed to provide a feasible project, but the cost has escalated at such a rate that the costs exceed the project's previously calculated benefits.

New Information Regarding Valley Water's Still Unfulfilled 35 Percent Partnership Assumption

The Pacheco Dam project's infeasibility is also illustrated by the lack of partners that have committed to help fund the project. In 2018, the Valley Water Board directed staff to assume that the Pacheco Dam Project would have funding partnerships of at least 35 percent.[10] Since then, all Valley Water budget publications and planning documents have assumed that 35 percent of the project cost would be covered by other partner agencies. To date, however, not a single agency has formally agreed to share in the cost of the project. This situation is in contrast with other WSIP projects, such as the Los Vaqueros Reservoir Expansion Project; as of September 2021, Los Vaqueros had eight member agencies that had signed on to the Joint Powers Authority.[11]

During Valley Water's March 16, 2023, Special Meeting, multiple directors inquired about the 35 percent partnership assumption. In response, Director Estremera provided clarification about the origins of that assumption. He stated, "I made the motion with respect to the 35 percent participation, at least the Board at the time felt that if we did not have partners, we would not do this, we just would not do this project and so having said that to the public, we wanted to make sure that all of our assumptions

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[9] Prior correspondence to the Commission from Stop the Pacheco Dam Coalition explains how the claimed benefits are wildly overstated. Dr. Jeffrey Michael's report titled Review of the Pacheco Dam Feasibility Documentation: New Pacheco Dam is Economically and Financially Infeasible, available at: https://stoppachecodam.org/wp-content/uploads/2021/11/21.11.29-Pacheco-Dam-Feasibility-Review_final-003.pdf.

[10] Valley Water Special Meeting, March 16, 2023, available at: https://scvwd.granicus.com/MediaPlayer.php?view_id=3&clip_id=2078 (discussion of the previous decision regarding the 35 percent partnership begins at 1:54:55).

[11] The Los Vaqueros Reservoir Joint Powers Authority Agreement, available at: https://img1.wsimg.com/blobby/go/b7bc6bb0-42f8-4e51-8df7-1b624c766dd9/downloads/Los%20Vaqueros%20Reservoir%20Joint%20Exercise%20of%20Power.pdf?ver=1679410743109

included that proviso."[12] Currently, there is no indication that Valley Water will have any partnership funding, much less 35 percent partner funding. Therefore, it is possible that Valley Water Board may consider abandoning the project based on a lack of partnerships in the near future.

Conclusion

The new Pacheco Dam Project continues to be mired by deficient planning, increasing costs, and growing questions about Valley Water's desire and ability to complete project milestones, despite expending more than $60 million. Our coalition believes it would be appropriate for the Commission to inquire about the progress and continued feasibility of the Pacheco Dam Project at this time. As this project has become technically, environmentally and/or financially infeasible, no further Proposition 1 funds should be spent on it. (See Cal. Code Regs., tit 23, § 6013, subd. (f).)

Thank you for considering this information and please feel free to contact me (osha@semlawyers.com, 916-455-7300) with any questions.

Very truly yours,

Sierra Club Loma Prieta Chapter

By: Katja Irvin
Katja Irvin, AICP
Conservation Committee

Sierra Club California

By: Molly Culton
Molly Culton
Senior Conservation and Digital Organizer

[12] Valley Water March 16, 2023, Special Meeting, available at: https://scvwd.granicus.com/MediaPlayer.php?view_id=3&clip_id=2078 (Director Estremera clarification begins at 1:55:00).

Stop the Pacheco Dam Project Coalition

By: Osha R. Meserve

Attachments:
Exhibit 1, November 1, 2021, DSOD Letter
Exhibit 2, June 28, 2018, Application Scores and Commission Determinations Presentation

cc (sent via email):
Members of the California Water Commission
Matthew Swanson, Chair (Matthew.Swanson@cwc.ca.gov)
Fern Steiner, Vice Chair (Fern.Steiner@cwc.ca.gov)
Samantha Arthur (Samantha.Arthur@cwc.ca.gov)
Daniel Curtin (Daniel.Curtin@cwc.ca.gov)
Kimberly Gallagher (Kimberly.Gallagher@cwc.ca.gov)
Alexandre Makler (Alexandre.Makler@cwc.ca.gov)
Jose Solorio (Jose.Solorio@cwc.ca.gov)
Joe Yun, Executive Director (joseph.yun@water.ca.gov)
Holly Stout, Legal Counsel (holly.stout@water.ca.gov)

EXHIBIT 1

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

November 1, 2021

Mr. Christopher Hakes, Deputy Operating Officer
Dam Safety and Capital Delivery
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, California 95118

Pacheco Dam, Proposed
Santa Clara County

Dear Mr. Hakes:

This is the Division of Safety of Dams' (DSOD) response to the Santa Clara Valley Water District's (Valley Water) design concept submittals for the proposed Pacheco Dam. Valley Water's submittals, dated March 1, 2021, March 16, 2021, and August 25, 2021, sought DSOD's review and approval of the feasibility of constructing a "hardfill" dam at the preferred upper dam site. For the reasons set forth below, DSOD is unable to approve Valley Water's concept.

DSOD has completed its review of the submitted documents (list enclosed). These submittals define a hardfill dam as a symmetrical gravity dam constructed of cemented materials utilizing construction methods similar to Roller Compacted Concrete (RCC). Hardfill materials generally do not meet industry requirements for RCC mixtures, such as using lower quality aggregates with greater fines content (0.075 mm and smaller particles). According to the submittals, Pacheco Dam would be of similar design.

As proposed, Pacheco Dam would be the largest hardfill dam in the United States, standing at a height of 326-feet with 140,000 acre-feet of storage. A key aspect of DSOD's review has been the design, construction, and performance history of hardfill dams in the United States and elsewhere. However, given the short history (less than 20 years) and limited documentation for this type and size of dam, sufficient information is not readily available. With this limitation, DSOD cannot agree with Valley Water and its consultants that hardfill dams have proven adequate performance based on the lack of documented negative performance.

As discussed in a meeting with you and your staff on October 27, 2021, DSOD has identified major issues that lead us to reject the hardfill dam concept. A complete list of major comments is enclosed. The most critical issue, which was identified during your consultant's (AECOM) Probable Failure Mode (PFM) workshop, is the potential degradation of hardfill over time in the presence of water. This negative factor is identified numerous times in the screening of PFMs, but it was considered remote. However, a lack of research and limited performance history leave large uncertainties as to whether this factor is remote. This compounds the risk since the potential for water to interface with the hardfill cannot be fully mitigated, especially at the interface between the dam and foundation.

Although risk reduction measures could be incorporated into the design, the adequacy and longevity of any risk reduction measure would be unknown. The ability to monitor the dam's performance would be limited in areas such as at the contact between the dam and its foundation. As such, if deficiencies do manifest after significant progression, intervening actions may not be adequate to prevent a catastrophic failure of the dam.

Additionally, the lack of well-documented case histories, cohesive design standards, and independent research regarding hardfill dams and their long-term performance poses unacceptable risks for public safety. Finally, the suitability of the hardfill as a robust dam design cannot be accepted by DSOD based on these factors and assumptions that may prove incorrect in time as the performance of this dam type is better understood.

The upper dam site preferred by Valley Water remains a feasible site to construct a dam, such as an earthfill dam, but this site does have noted geologic issues that will need to be addressed for any dam type. The concern of site-specific fault rupture and the associated unknowns will remain until the foundation is excavated or fully explored via a trench. Additionally, the adverse bedding in the right abutment and potential for differential settlement between the adjacent geologic units will need to be further evaluated. Any dam constructed at this site will need to be designed to accommodate all uncertainties reliably to mitigate the risks associated with the extremely high downstream consequence associated with a dam of the proposed size.

If you have any further questions or comments, please contact Design Engineer Ashley Moran at (916) 565-7850 or Project Engineer Christopher Dorsey at (916) 565-7846.

Sincerely,

Sharon K. Tapia

Sharon K. Tapia, P.E.
Division Manager
Division of Safety of Dams

Enclosures

California Natural Resources Agency
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS
November 1, 2021

Enclosure 1

The list of documents submitted by Valley Water that DSOD reviewed for determining the acceptability of a hardfill dam at the proposed Pacheco Dam site follows:

1. Hardfill Dam Workplan Pacheco Reservoir Expansion Project, by AECOM, Inc., Stantec, and GEI Consultants, dated March 11, 2021.

2. Evaluation of Hardfill Dam Technical Memorandum Pacheco Reservoir Expansion Project, by AECOM, Inc., Stantec, and GEI Consultants, dated March 15, 2021.

3. Project Alternatives Assessment Technical Memorandum Pacheco Reservoir Expansion, by AECOM, Inc., Stantec, and GEI Consultants, dated March 2021.

4. DRAFT Assessment of Regional and Local Faulting, Pacheco Reservoir Expansion Project, Santa Clara County, California, by Lettis Consultants International, Inc., dated September 10, 2020.

5. Assessment of Local and Site-Specific Faulting, Pacheco Reservoir Expansion Project, Santa Clara County, California, by Lettis Consultants International, Inc. dated February 12, 2021.

6. Reservoir Rim Landslide Inventory Mapping near the Proposed Pacheco Reservoir Expansion Project, Santa Clara County, California, by Lettis Consultants International, Inc. dated March 2, 2021.

7. Pacheco Reservoir Expansion Project (PREP): Workshop materials from PFM workshop, by AECOM, Inc., Stantec, and GEI Consultants, dated August 25, 2021.

California Natural Resources Agency
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS
November 1, 2021

Enclosure 2

The following is DSOD's list of major comments with respect to the proposed hardfill dam at the Pacheco Dam site (upper or lower):

1. Long-term performance data for hardfill dams of the proposed size are not available to adequately support the proposition of a hardfill dam of such extreme consequence. The dynamic properties of hardfill are not well studied or known, and there are no records showing that the select hardfill dams of a similar or larger size have been subjected to dynamic loading close to their design loads. The documentation by AECOM regarding seismic history are based on estimates rather than direct measurements. The conclusion that hardfill dams have adequate performance because there has been no documentation of negative performance is potentially unconservative given the limited history (less than 20 years) for dams of this type and size under extreme loads.

2. In AECOM's review of potential failure modes (PFMs), a negative factor for many of the PFMs is the possibility that hardfill can degrade over time in the presence of water. We find this to be the most critical issue because water may be able to access the hardfill in multiple locations, and some locations may not be detectable. To date, thorough and complete research on this issue has not been performed, and it would take significant time to completely understand. However, this issue cannot be disregarded and is the crux of further issues below.

3. A grout curtain will not fully prevent seepage below or around the dam, and seepage is likely to permeate the dam at the foundation contacts and potentially cause hardfill degradation. The degradation of hardfill in existing dams is currently unknown and the appropriate research would need to be conducted to mitigate any potential risks.

4. The aggregates will be variable on site, which would increase the potential for hardfill to degrade over time if areas of concentrated seepage occur. While multiple mix designs will be developed, not every property of the hardfill will be understood, and the global variability may cause internal flaws or fractures that cannot be predicted or analyzed before construction. Additionally, adequate mixing will be a challenge with many aggregates exceeding 10-percent fines content. While a liner as proposed would protect the dam, we note that liners do degrade with time and environmental conditions (reservoir cycling, weather, etc.).

Enclosure 2

5. The potential for larger units of shales to abut sandstone units creates a potential for differential settlement below the dam. While structurally, the dam may be able to adequate bridge this condition, water would be more likely to access the interface reducing friction resistance, increasing uplift on the dam, and providing a pathway for seepage into and possible degradation of the hardfill or erosion of the foundation that may be undetectable.

6. Considering the adverse bedding and zones of open fractures in the proposed right abutment and the relatively narrow footprint of the hardfill dam, there is a risk of instability and seepage that could result in failure at that abutment. A dam with a larger footprint, like an earthfill dam, would better mitigate the risk of abutment failure by increasing seepage path lengths and improving the ability to capture and monitor for seepage.

7. The site-specific fault rupture evaluation does not adequately demonstrate absence of active faults in the dam foundation. Any planar, laterally continuous bedrock faults or shear zones exposed in the foundation during construction will be considered conditionally active and a possible rupture hazard if their attributes are reasonably consistent with the current tectonic regime. If a shear is encountered, conclusive proof of inactivity will be difficult to achieve given the apparent absence of Quaternary deposits greater than 35,000 years old.

EXHIBIT 2

California Water Commission

Pacheco Reservoir Expansion

Unique Opportunity for Fisheries Recovery, Flood Risk Reduction and Emergency Water Supply

Application Scores and Commission Determinations
June 28, 2018

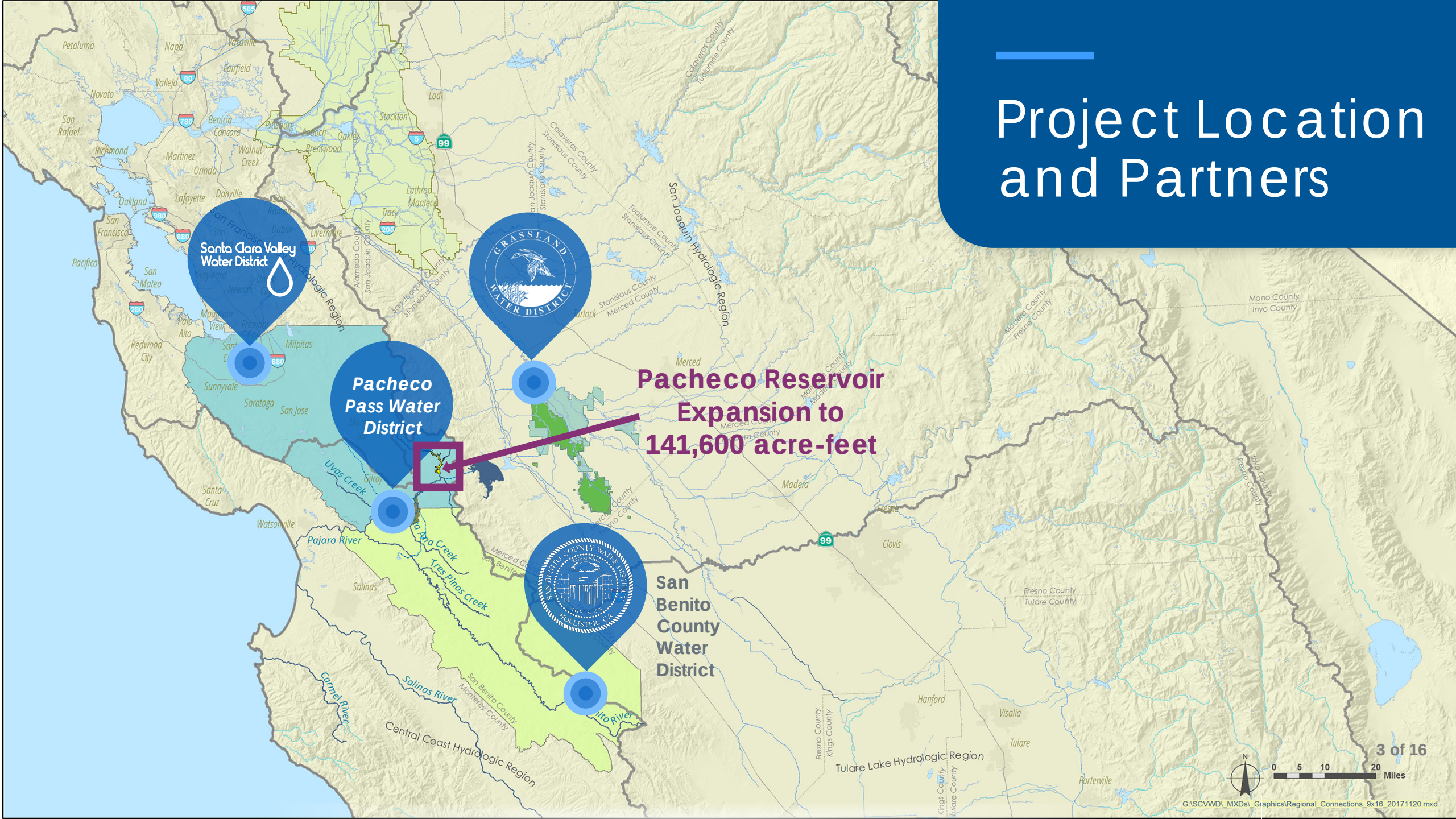
PPWD

Santa Clara Valley Water District

Agenda

1) Review of Component Scores
2) Review of Commission Staff Determinations
3) Determination of Cost Effectiveness

Project Location and Partners



Staff Preliminary Component Scores

Public Benefit Ratio and Non-Monetized Benefits

Relative Environmental Value

Resiliency

Implementation Risk

PPWD | Santa Clara Valley Water District

Staff Preliminary Component Scores

Component	Sub-Component	Score/Possible Points	Comment
Public Benefit Ratio and Non-Monetized Benefits	Public Benefit Ratio	**23**/33	***Focusing on Financial and Environmental Feasibility***
	Non-Monetized Benefit	**4**/4	
Relative Environmental Value		**21**/27	
Resiliency	Integration and Flexibility	**8**/8	
	Uncertainty	**15**/15	
Implementation Risk	Technical Feasibility	**5**/5	
	Financial Feasibility	**3**/4	
	Economic Feasibility	**4**/4	
	Environmental Feasibility	**1**/5	

PPWD

Santa Clara Valley Water District

Focusing on Financial and Environmental Feasibility

PPWD

Santa Clara Valley Water District

SCVWD's Strong Financial Position Reduces Implementation Risk

SCVWD has full capability to finance the Project

- High credit ratings of Aa1 Moody's and AA+ Fitch ensure relatively inexpensive access to long-term debt
- Strong customer base with long term take-or-pay contracts with water retailers
- Strong local economy
  - Median income $101K, 159% of CA state median
  - Largest employers include Cisco, Apple, Google and Intel

PPWD

Santa Clara Valley Water District

With Full Funding, SCVWD Will be Able to Finance Remaining Capital Costs

Seven member elected Board has full authority to set rates to meet future water supply needs

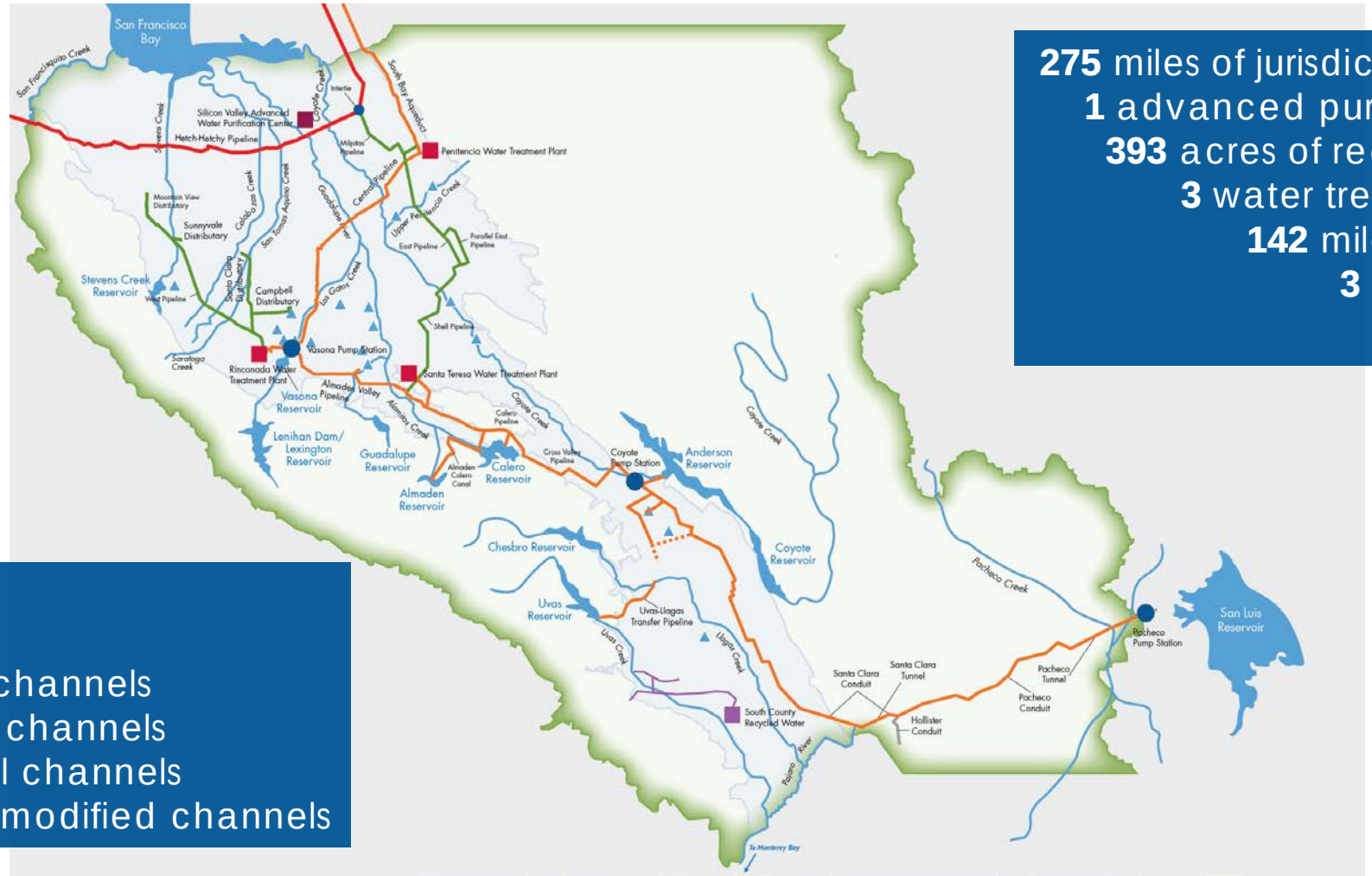
Financing Plan for remaining $485M of $969M capital cost:

- Fund with cash on hand from annual rates/charges (30%)
- Utilize existing Commercial Paper to pay for project costs as incurred
- Issue bonds with fixed-rate long term debt
- Up to 10% cost share by San Benito County Water District

PPWD

Santa Clara Valley Water District

Nearly a Century of Successful Water Infrastructure Development

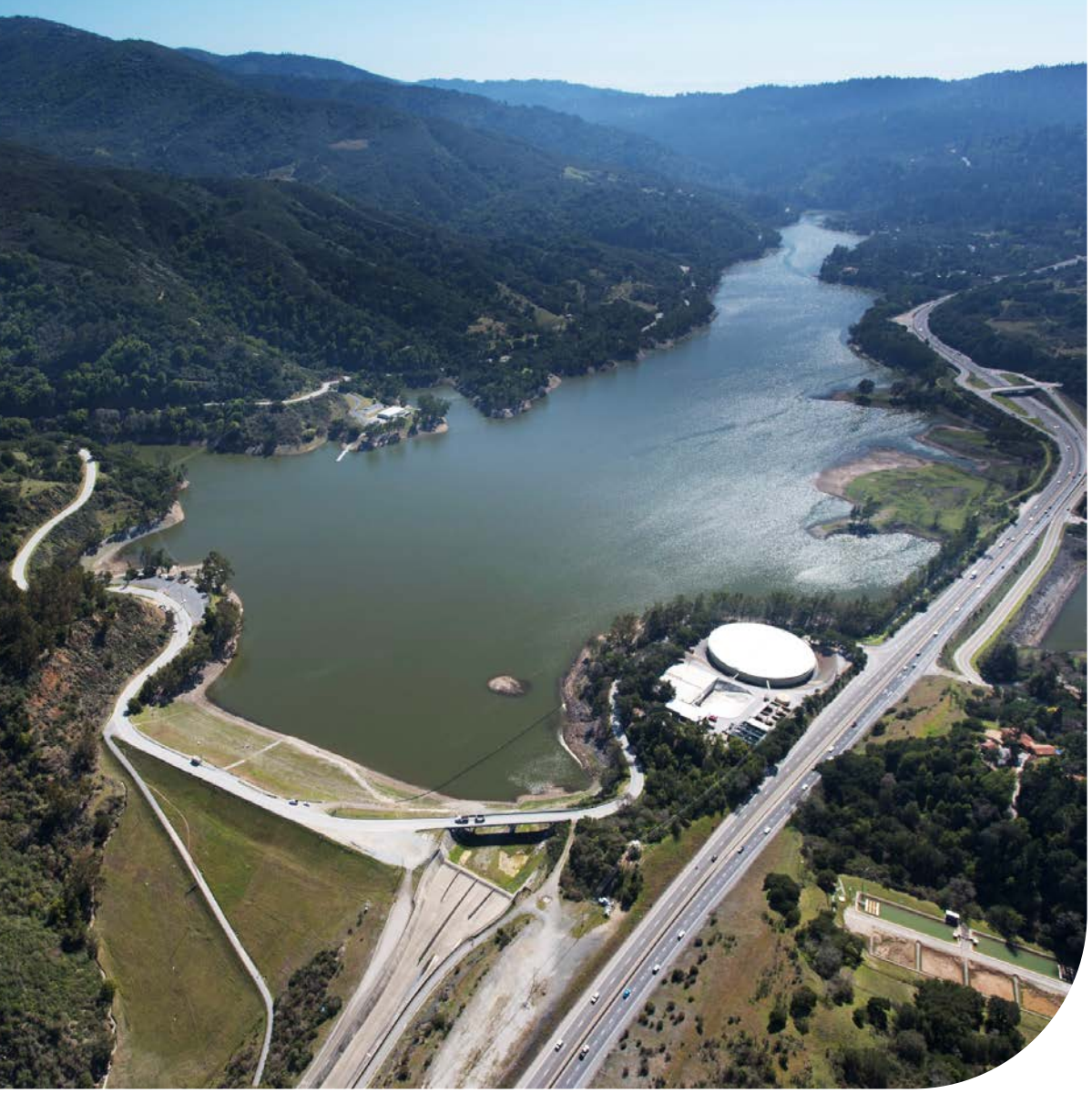


275 miles of jurisdictional streams
1 advanced purification plant
393 acres of recharge ponds
3 water treatment plants
142 miles of pipelines
3 pump stations
10 reservoirs

22 fish ladders
106 miles of levees
2 miles of Gabian channels
13 miles rock-lined channels
188 miles of natural channels
54 miles of natural modified channels

PPWD

Santa Clara Valley Water District



Lexington Reservoir

SCVWD has the Experience and Resources to Deliver this Project

Building on Our Track Record: Implementation of over $1 billion in projects over last 10 years

- 800 Employees serving 1.9 million people
- Managing 10 existing dams/reservoirs, constructed beginning in the 1930's
- Providing water supply, flood protection, and stewardship of streams

PPWD

Santa Clara Valley Water District

Existing Pacheco Reservoir

Implementation Risk – Environmental Feasibility

SCVWD has significant recent experience in implementing large capital programs

- Completed 9 major EIRs in the past 10 years
- Pacheco Reservoir Expansion EIR to build upon San Luis Low Point Improvement Project efforts by Reclamation
- Over 30 environmental planners, biologists and water resource specialists on staff
- Augment staff team with specialized consulting services

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Santa Clara Valley Water District

The Nine Commission Determinations




PPWD | Santa Clara Valley Water District

Request Affirmative Determination on Cost Effectiveness

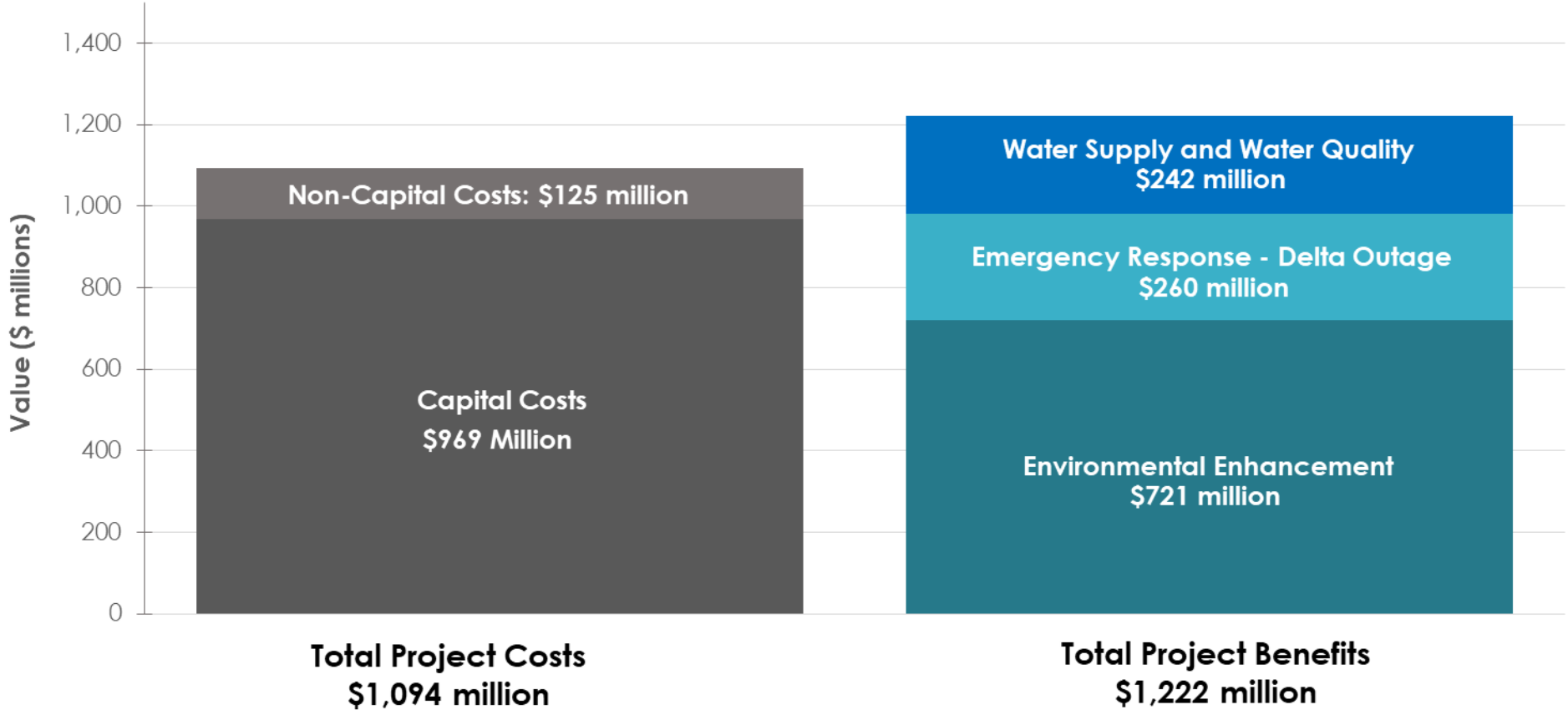
#	Determination	Staff Recommendation	SCVWD Position June 28, 2018
1	The proposed project remains cost effective	--	**Request affirmative determination**
2	The proposed project improves the operations of the state water system	Yes	Concur ✓
3	The proposed project provides a net improvement in ecosystem and water quality conditions	Yes	Concur ✓
4	The proposed project provides measurable improvement to the Delta ecosystem or to the tributaries to the Delta	Yes	Concur ✓
5	The proposed project's program cost share is less than or equal to 50 percent of the proposed project's total capital costs, with the exception of conjunctive use projects and reservoir reoperation projects.	Yes	Concur ✓
6	The proposed project's program-funded ecosystem improvement benefits make up at least 50 percent of the total public benefits funded by WSIP.	Yes	Concur ✓
7	The proposed project appears to be feasible	Yes	Concur ✓
8	The proposed project will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta.	Yes	Concur ✓
9	The proposed project is consistent with all applicable laws and regulations	Yes	Concur ✓

PPWD

Santa Clara Valley Water District

Pacheco Reservoir Expansion is Cost Effective

Benefits Exceed Costs



1.12

Benefit/Cost Ratio

PPWD

Santa Clara Valley Water District

Pacheco Reservoir Expansion Project Remains Cost Effective

"Proposed Project remains the least-cost feasible means of providing the same or greater amount of physical benefits" *Regulation 6004 (a)(4)(E)*

- CWC Staff Concurred with All Physical Benefits; No Changes to Any Physical Benefits
  - Ecosystem Improvement – Steelhead Habitat
  - Ecosystem Improvement – Refuge Supplies
  - Emergency Response – Delta Outage
  - M&I Water Supply
  - M&I Water Quality
- CWC staff reduced Total Project Costs (minor)

PPWD

Santa Clara Valley Water District

Conclusions

- SCVWD has Strong Financial and Delivery Capability
- SCVWD has Significant Project Environmental Experience
- Pacheco Reservoir Expansion is Cost Effective

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