



**Water Storage Investment Program: Los Vaqueros Reservoir Expansion Continuing Eligibility and Feasibility Determination (Action Item)**

**Introduction**

The California Water Commission (Commission) is administering the Water Storage Investment Program (WSIP) to fund the public benefits associated with water storage projects using funds from the Proposition 1 Water Quality, Supply, and Infrastructure Improvement Act of 2014. Currently, seven projects have a WSIP maximum conditional eligibility determination (MCED), which is the amount of Proposition 1 funding available to a given project and are actively working to secure a formal WSIP award amount. The Los Vaqueros Reservoir Expansion Project (LVE), promoted by its applicant, the Contra Costa Water District (CCWD), is one of those seven projects. For this project to remain in the WSIP, it must meet the continuing eligibility requirements described below.

Water Code section 79757 and California Code of Regulations, Title 23, Division 7, section 6013(f)(2) requires a Water Storage Investment Program (WSIP) applicant to complete the following before January 1, 2022 as a condition of continued WSIP eligibility:

- Draft environmental documentation is available for public review.
- The Director of the Department of Water Resources receives commitments for at least 75 percent of the non-public benefit cost shares of the project.
- All feasibility studies are complete.

Additionally, as a condition of continued eligibility, the Commission must, by January 1, 2022:

- Make a finding that the project is feasible and will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta.

The Commission determined final application scores and made nine determinations for each of the projects in the WSIP at its June 2018 meeting. One of the determinations made was that each project *appeared* feasible. This initial limited feasibility determination allowed the Commission to return to the full feasibility determination after each applicant completed its feasibility studies to meet the Water Code section 79757 requirements. Since the June 2018 Commission meeting, applicants continued to work toward completing the interim statutory requirements of Water Code section 79757. The Los Vaqueros Reservoir Expansion Project has reached the stage where the Commission can deliberate on project feasibility.

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This staff report presents the status of the January 1, 2022 requirements and staff's review and recommendation of the feasibility documents for consideration in the Commission's feasibility deliberations.

### **Background**

Through the WSIP, the Commission will invest nearly \$2.6 billion in the public benefits of water storage projects, consistent with the requirements of Proposition 1 (the Water Quality, Supply, and Infrastructure Improvement Act of 2014), Chapter 8. In July 2018, the Commission made MCEDs, decisions that set the amount of Proposition 1 funding available to a given project. Since then, one applicant has withdrawn from the program. In early 2021, the Commission decided to adjust two project MCEDs to their initially requested amounts. Additionally, the Commission made a 2.5 percent inflation adjustment to all seven project MCEDs. The seven remaining applicants are working to complete the Proposition 1 requirements, which include obtaining permits and final environmental documents, contracts for the administration of public benefits, and contracts for non-Proposition 1 funding before returning to the Commission for a final award hearing.

This agenda item implements Goal Four of the Commission's Strategic Plan, which calls on the Commission to carry out its statutory responsibilities for the Proposition 1 Water Storage Investment Program.

### **Meeting Overview**

At the October meeting, Commission staff will present their recommendations regarding Los Vaqueros Reservoir Expansion project's feasibility documentation and a summary of documents received that are responsive to the statutory January 1, 2022 requirements. The Commission will then decide whether to make their feasibility determination. The Commission will have the opportunity to ask questions of applicants and hear public comment before deliberating on their feasibility determination.

This is an action item.

### **Summary of Issues**

January 1, 2022 Requirements. The documents that constitute compliance with Water Code section 79757 are listed below.

Requirement	Status
Draft environmental document available for public review.	CCWD and USBR, 2020. <a href="#">Final Supplemental Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Los Vaqueros Reservoir Expansion Project.</a>

Requirement	Status
	<p>CCWD and USBR, 2017. <a href="#">Draft Supplemental EIS/EIR for the Los Vaqueros Reservoir Expansion Project.</a></p> <p>CCWD and USBR, 2010. <a href="#">Final EIS/EIR for the Los Vaqueros Reservoir Expansion Project.</a></p> <p>CCWD and USBR, 2009. <a href="#">Draft EIS/EIR for the Los Vaqueros Reservoir Expansion Project.</a></p> <p>Mitigation Monitoring and Reporting Program (Appendix B of the Final EIR)</p> <p><a href="#">Statement of Overriding Considerations</a></p>
<p>75% of non-public benefit cost share submitted to the Director of DWR.</p>	<p><a href="#">Support document containing:</a></p> <ul style="list-style-type: none"> <li>• <a href="#">Letter from Investing Agencies</a></li> <li>• <a href="#">Los Vaqueros Reservoir Joint Powers Authority (JPA) Agreement</a></li> <li>• <a href="#">Summary of the JPA Agreement</a></li> <li>• <a href="#">Summary of the Los Vaqueros Expansion Project</a></li> </ul> <p>Delivered to the DWR Director October 7, 2021</p>
<p>Completed feasibility documents</p>	<p>2017 WSIP Application. Los Vaqueros Reservoir Expansion.</p> <p>2017-2018. WSIP staff technical review, PBR review, appeal, appeal response, and scoring recommendations</p> <p>CCWD, 2021. <a href="#">Response to the California Water Commission (CWC) staff review of the Final Federal Feasibility Report for the Los Vaqueros Reservoir Expansion Project September 2021.</a></p> <p>Bureau of Reclamation, 2020. <a href="#">Final Feasibility Report Los Vaqueros Reservoir Expansion Investigation.</a></p> <p><a href="#">Bureau of Reclamation, 2021. Construction Cost Trends, 2016 to 2019</a></p>

Feasibility Document Review. California Code of Regulations, Title 23, Division 7 incorporates by reference the Technical Reference for the WSIP. The Technical Reference specifies criteria to establish technical, environmental, economic, and financial feasibility as well as constructability as follows:

- Technical Feasibility – the applicant must demonstrate that the project is technically feasible consistent with the operations plan, including a description of data and analytical methods, the hydrologic period, development conditions, hydrologic time

step, and water balance analysis showing, for the with- and without-project condition, all flows and water supplies relevant to the benefits analysis.

- Constructability – the applicant must demonstrate that the project can be constructed with existing technology and availability of construction materials, work force, and equipment.
- Environmental feasibility – the applicant must demonstrate the project is environmentally feasible. The applicant must describe how significant environmental issues will be mitigated or indicate if the California Environmental Quality Act (CEQA) lead agency has or will file a Statement of Overriding Considerations (SOOC).
- Economic feasibility – the applicant must demonstrate the expected benefits of the project equal or exceed the expected costs, considering all benefits and costs related to or caused by the project.
- Financial feasibility – the applicant must demonstrate that sufficient funds will be available from public (including the funds requested in the application) and nonpublic sources to cover the construction and operation and maintenance of the project over the planning horizon. It must also show that beneficiaries of non-public benefits are allocated costs that are consistent with and do not exceed the benefits they receive.

**Technical Feasibility and Constructability Review.** Staff reviewed the project operations, engineering designs and costs, and construction methods for the Los Vaqueros Reservoir Expansion Project. The project operations, engineering designs and costs, and construction methods demonstrate that the Los Vaqueros Reservoir Expansion Project can be technically and physically constructed and operated.

The Los Vaqueros Reservoir Expansion Project would be operated to provide incremental Level 4 refuge water supplies, municipal and industrial (M&I) water supplies to local partner agencies, increasing Central Valley Project (CVP) operational flexibility, and increasing agricultural water supplies. The project would utilize CCWD's existing Delta intakes at Old River, Middle River, and Rock Slough to divert surplus water from the Delta to store in the reservoir or deliver directly to beneficiaries. The project would be operated to provide approximately equal water deliveries to both local agency partners and refuges, thus balancing the Project's two primary objectives. The refuge water supply would be delivered through the Transfer-Bethany Pipeline to the California Aqueduct, and water delivered to local agency partners would be direct diversions from the Delta, rediversions from the Delta, or releases from Los Vaqueros Reservoir storage. In addition, an expanded Los Vaqueros Reservoir would provide a reliable, local source of emergency water supply during emergencies when Delta water deliveries are disrupted by floods, earthquakes, or other long-term outage.

Design criteria, and engineering designs and cost estimates for the dam raise and associated appurtenant structures, and conveyance and pumping facilities developed for the feasibility

study were based on previously accepted criteria identified for the Los Vaqueros Reservoir Expansion Project, industry practice, codes and standards, and professional judgment. Engineering designs and costs were developed at a feasibility-level. Construction of the expanded reservoir would involve the dam raise and construction of the appurtenant facilities. Most of the materials for the dam raise would be obtained from sites within the watershed from designated borrow areas. Other materials required for construction of the dam raise and associated facilities would be transported to the project site. The dam raise and appurtenant facilities can be constructed with existing technologies.

**Environmental Feasibility Review.** Staff reviewed the 2017 application materials, 2020 Final Feasibility Report (Bureau of Reclamation, 2020), and the Supplemental EIS/EIR (CCWD and USBR, 2020) to determine whether the applicant demonstrated environmental feasibility and described how significant impacts would be mitigated or whether the CEQA lead indicated they would file a SOOC. These materials demonstrate the project is environmentally feasible.

The 2020 Los Vaqueros Reservoir Expansion Investigation Final Feasibility Report indicated that Alternative 1B, also known as the Recommended Plan within the Report, was evaluated in the 2020 Supplemental EIS/EIR, which included detailed discussion of possible effects of Alternative 1B and proposed mitigation measures. The Report indicated that there were no significant and unavoidable impacts identified in Alternative 1B. The Report described that some of the adverse effects would be temporary, construction-related effects that would be less than significant or would be reduced to less-than-significant levels through mitigation. Environmental commitments and best management practices to avoid or minimize potential effects would be incorporated into the design and construction, and operations and maintenance phases of the project in coordination with applicable resource agencies. The project would have impacts reduced to less-than-significant with mitigation specifically tied to the dam raise.

In 2010, CCWD and the USBR jointly prepared the Draft and Final EIS/EIR for the Phase 1 expansion of Los Vaqueros Reservoir to 160 thousand acre-feet (TAF) and in 2020, prepared the supplement to the 2010 Draft and Final EIS/EIR for the Phase 2 expansion of Los Vaqueros Reservoir to 275 TAF. The 2020 Draft and Final Supplemental EIS/EIR indicated that there would be one significant and unavoidable environmental impact related to the permanent conversion of Important Farmland from the implementation of the East Bay Municipal Utility District (EBMUD)-CCWD Intertie Pump Station. However, EBMUD-CCWD Intertie Pump Station is a related improvement to the Local Agency Partners' infrastructure that would be constructed in conjunction with the proposed project but is not part of the proposed project eligible for WSIP funding. Potentially significant but mitigable impacts include adverse impacts to air quality; local hydrology, drainage and groundwater; biological resources; cultural and paleontological resources; hazardous materials and public health; transportation and circulation, utilities and public service systems, and visual/aesthetic resources. In 2020, CCWD adopted a Mitigation

Monitoring and Reporting Program (MMRP) and a Statement of Overriding Considerations that the improved water supply reliability, environmental, water quality, statewide water system integration, and recreation benefits outweigh the significant and unavoidable environmental impact resulting from the implementation of the EBMUD-CCWD Intertie Pump Station, which is not part of the proposed project eligible for WSIP funding.

**Economic Feasibility Review.** Economic feasibility is concerned with the economic benefits associated with physical benefits in comparison to all costs. Staff has reviewed the economic benefits analysis in the Final Feasibility Report, including any changes since the Maximum Conditional Eligibility Determination (MCED). Staff has reviewed all cost estimates. Non-monetized and qualitative benefits and costs have been considered, including those described or monetized in the 2017 application but not included or monetized in the Final Feasibility Report. These cost estimates and benefits demonstrate the project is economically feasible.

Staff considered how the project may have changed from the 2017 application. The Technical Reference states: An applicant must identify and explain differences in assumptions, procedures, and results between its feasibility study and its application, and how those differences could affect project feasibility. The applicant provided an explanation of differences in its response to CWC staff's review of the final federal feasibility study, CCWD, 2021. These changes have small effects on expected benefits. Therefore, information from the 2017 application is still relevant. However, the more recent Feasibility Report includes some different benefit types and quantities based on revised modelling. Therefore, the economic and financial feasibility reviews rely primarily on the Final Feasibility Report for physical benefits.

Refinements in water system modelling caused some changes in physical benefits estimates.

- CCWD now estimates annual average refuge deliveries south-of-Delta (SOD) of 54.6 TAF, up from 46 TAF in 2017.
- The Final Feasibility Report reduces the emergency response physical benefit to 148.4 TAF/year, a 11.6 TAF (7%) reduction, due to differences in the CalSim baseline that affects reservoir storage.
- The 2017 application showed 2030 and 2070 critical year M&I deliveries of 39.5 and 37.5 TAF respectively. The Feasibility Report Appendix B, Table 4-1 shows Alternative 1B average critical year M&I supplies of 36 TAF.
- The project is now expected to supply an average of 8.7 TAF of south-of-Delta agricultural water supply.
- The Final Feasibility Report estimates a Central Valley Project operational flexibility benefit that was not included in the 2017 application, at an annual average of 6 TAF.

Information from the 2017 WSIP application and the 2020 Final Feasibility Report was considered. Important differences exist between economic feasibility standards for the two

sources, due to their different purposes and requirements. A few important differences are noted below.

<b>2017 WSIP Application Standards and 2020 Federal Feasibility Standards</b>		
<b>Difference</b>	<b>2017 WSIP application</b>	<b>2020 Final Feasibility Report</b>
Accounting perspective	State of California	National
Climate Change	2030 and 2070 Future Climate Projections	2015 conditions
Discount rate	3.5%	2.75%
Benefit types	WSIP public benefits versus non-public benefits	Project purposes used to assess federal feasibility and eligibility for funding or financing

Project Costs. The Final Feasibility Report Chapter 7 states:

Project costs in this Federal Feasibility Report do not include costs for local associated facilities planned by individual Local Agency Partners. These local facilities include a new Brentwood Pipeline, a new EBMUD-CCWD Intertie Pump Station, installation of variable frequency drives at EBMUD’s Walnut Creek Pumping Plant, a new East Contra Costa Irrigation District (ECCID) intertie, and relining portions of EBMUD’s Mokelumne Aqueduct.

The costs of these facilities should be included in total project costs for purposes of economic feasibility if any benefits counted in the Feasibility Report rely on or are affected by these facilities.

CCWD, 2021 states:

The City of Brentwood has decided to defer the proposed intertie pipeline as existing interties with CCWD allow it to receive the desired water quality benefits. ECCID has decided not to participate in the Project, and as a result the ECCID Pipeline is no longer included as a Project facility.

Therefore, costs of the Brentwood Pipeline and the ECCID intertie are no longer required. CCWD has also stated that the larger EBMUD-CCWD Intertie is no longer required.

In the 2017 application CCWD estimated a Mokelumne Aqueduct Relining cost associated with LVE of \$18.06 million, and the cost for the Walnut Creek Pumping Plant VFDs was \$5.6 million. These costs are updated to 2018 levels using the Bureau of Reclamation Construction Cost Trends (Reclamation, 2021). The 2018 costs are \$19.8 and \$5.9 million, respectively.

Benefits and Benefit-Cost Ratio. Although staff made several changes to the underlying assumptions for benefits and costs during this feasibility review, under all these cases, the

benefit to cost ratio (BCR) is greater than one, so the project meets the test of economic feasibility considering the quantified benefits and costs. The changes are detailed below.

New water supplies are expected to average 83.4 TAF annually. The project would provide more water in wet years than in dry years. Staff uses the physical water supply benefits as estimated in the Final Feasibility Report for its economic feasibility recommendation.

Staff made the following adjustments to Final Feasibility Report benefits for this economic feasibility recommendation, as described below.

- Municipal (non-public) water quality benefits of \$1.34 million annually were accepted in the 2017 application but were not included in the Final Feasibility Report. Staff has added those.
- Staff previously estimated the non-drought emergency response benefit to be \$248.9 million in present value terms.
- WSIP unit values for 2030 and 2045 are used rather than the 2030-only values used in the Final Feasibility Report.

The staff accepts the Final Feasibility Report’s conveyance losses and costs for each type of water use as calculated in the Report.

The table below shows estimated costs and benefits under different assumptions. First, results from the Final Feasibility Report are duplicated in present value terms. The BCR from the Final Feasibility Report is 1.43. If only the discount rate is changed to the WSIP rate of 3.5% the BCR is reduced to 1.26. If all staff-recommended changes to benefits calculations are included, the BCR is 1.17.

<b>Present value of costs and benefits of Los Vaqueros Expansion Project under different assumptions</b>				
Source of benefits and costs	Final Feasibility Report, federal discount rate	Final Feasibility Report, WSIP discount rate	WSIP Staff-adjusted; all costs and benefits	WSIP Staff-adjusted; include only costs to Calif
Discount Rate	2.75%	3.5%	3.5%	3.5%
Total present value of costs	\$1,645.96	\$1,515.51	\$1,540.57	\$1,266.05
Present value of benefits	\$2,349.41	\$1,916.52	\$1,797.29	\$1,797.29
Benefit-cost ratio	1.43	1.26	1.17	1.42



Considering only the state accounting perspective, the share of costs paid by the federal government is not a state cost. The Final Feasibility Report assigned 100% of costs allocated to CVP operational flexibility to federal funding, plus 75% of construction costs and 25% of operation, maintenance, and replacement (OM&R) costs allocated to refuge supplies. These shares work out to 25% of the total construction cost and 13% of the total OM&R cost.

Rather than remove all federal costs from the calculation, staff reduced the federal cost share by 13 percent to account for the share of federal funds paid by Californians. With these assumptions the BCR of the project from the State perspective is 1.42. This BCR is relevant only if the project obtains federal funding as proposed by the Final Feasibility Report.

Non-Monetized Benefits and Costs. The applicant identifies the following non-monetized benefit for this project:

- An increased ability to transfer water from north-of-Delta (NOD) to SOD agriculture, up to 35 TAF annually

This benefit could provide an incremental improvement to the economic feasibility of the project.

The final federal feasibility report, (Bureau of Reclamation, 2020 ) notes that “The Los Vaqueros Reservoir would be out of service for about four years from the time the reservoir was completely drained to allow for construction of the dam expansion through refilling the expanded reservoir.” No cost appears to have been included to account for associated benefits losses.

**Financial Feasibility Review.** Financial feasibility means that financial resources will be available to construct and operate the project as planned. Staff has reviewed all planned cost contributions from all sources to determine if financing appears adequate to build and operate the project over its planning horizon.

Staff’s review indicates:

- Funds from all sources are sufficient to cover all costs. CCWD has applied for federal funding. At the time of the MCED in 2018, this funding was not anticipated, so receiving federal funding would provide extra assurance that all project costs will be covered.
- The applicant hopes to receive funding for refuge water supplies (which provide ecosystem benefits) from both State WSIP and federal funds. The Final Feasibility Report states “Project proponents have expressed a willingness to pay” (conveyance cost to refuge boundaries). “In exchange for upfront Federal construction funding, Reclamation will receive Refuge water supplies at no cost.” If the federal funding cannot be used as contemplated, future refuge OM&R costs may be at financial risk.
- Costs allocated to the non-public beneficiaries do not exceed the non-public benefits that they receive.

- CCWD and other local agencies receiving water supply have substantial and sufficient financial capacity to pay their allocated costs and costs allocated to but potentially not received from federal funds. As public agencies, they have legal authority to charge rates and assessments to their customers to cover project costs which supports financial feasibility.

Staff noted an inconsistency in capital cost allocation and assignment assumed in its Final Feasibility Report versus the capital cost allocation for ecosystem benefits in the 2018 MCED. Nevertheless, WSIP funds must be spent as determined by the MCED - on capital costs allocated to public benefits. The applicant's use of federal funds is a matter for it and Reclamation to decide. Staff also notes that the amount of requested federal funding is not assured, but any that the applicant receives improves the project's financial feasibility relative to its 2017 application.

The applicant's 2017 application (see Attachment 4 of the Admin. Draft Feasibility Report submitted as Tab 5 Section 1, Feasibility and Implementation Risk) demonstrated substantial financial capacity of the project's local beneficiaries to pay for project costs. The local beneficiaries' commitment to pay their cost share is also accepted as evidence of financial feasibility for related non-public benefits.

### **Commission Decision**

The Commission can decide to make a determination that the Los Vaqueros Reservoir Expansion Project is feasible. If the Commission determines that the Los Vaqueros Reservoir Expansion Project is feasible, the project will continue to be eligible for WSIP funds and work toward completing the statutory requirements that could lead to a final award hearing.

Alternatively, the Commission may opt to not make a determination. If the Commission decides not to make a determination by December 31, 2021, the project would no longer be eligible for funding through the WSIP. For projects where no determination is made and the project has an early funding agreement, staff will close the agreement.

Projects must still complete all environmental documentation, have contracts for 100% of the non-public benefit cost share, have obtained all required permits, and contracts for administration of public benefits (Water Code section 79755(a)) before the Commission can conduct a final funding hearing.

### **Staff Recommendation**

Based on information received from CCWD which includes final environmental documentation, feasibility documentation, a letter of commitment from investing agencies and Joint Powers Agreement documentation, staff finds that CCWD has provided documents that meet the requirements of Water Code section 79757 including completed feasibility documents; the Los Vaqueros Reservoir Expansion meets conditions for technical, environmental, economic and

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financial feasibility and constructability defined in the Technical Reference. Staff recommends the Commission make a determination that the project is feasible.

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