

CALIFORNIA WATER COMMISSION

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May 25, 2018

Carol Baker
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Marguerite Patil, Special Assistant to the General Manager
Los Vaqueros Reservoir Expansion Project

Andrew Ball
Member

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Joseph Byrne
Member

Dear Ms. Patil:

Daniel Curtin
Member

Joe Del Bosque
Member

Attached please find the Water Storage Investment Program technical review for the Los Vaqueros Reservoir Expansion Project. The technical review contains the preliminary application scores and related reviewer comment. Additional documents including California Department of Fish and Wildlife and State Water Board Relative Environmental Value reviews and public benefit findings of the Department of Fish and Wildlife, Department of Water Resources, and State Water Resources Control Board, as appropriate, can be found at the following link:

Maria Herrera
Member

<https://cwc.ca.gov/Pages/WSIP/LVTech.aspx>

Catherine Keig
Member

Additionally, staff is finalizing summaries of information related to Commission determinations. We will transmit and post this information no later than 5:00 p.m. on June 4.

Staff from the Commission, Department of Fish and Wildlife, Department of Water Resources, and State Water Resources Control Board look forward to engaging with applicants and stakeholders at the scheduled meetings on June 6 and 7. These meetings are intended to focus on the preliminary scores and determination information. Any issues of clarification identified at the June 6 and 7 meetings will be reported by staff to the Commission at the June 27-29 meeting for its consideration in making final application scores and project determinations.

We look forward to your continued engagement in the Water Storage Investment Program.

Sincerely,

A handwritten signature in blue ink that reads "Joe Yun".

Joe Yun
Executive Officer
California Water Commission

Water Storage Investment Program Technical Review

Los Vaqueros Reservoir Expansion Project

Contra Costa Water District

Contra Costa Water District (CCWD) is proposing a surface storage project, the Los Vaqueros Reservoir Expansion Project (LVE Project). The LVE Project would enlarge the existing reservoir, an offstream reservoir located in southeastern Contra Costa County, from 160 thousand acre-feet (TAF) to 275 TAF. The LVE Project would upgrade existing conveyance facilities, construct new conveyance, and re-operate existing facilities to achieve the intended objectives. The LVE Project would divert water from the Sacramento-San Joaquin Delta at CCWD's Rock Slough, Old River, and Middle River intakes, and at the Freeport Intake on the Sacramento River. The LVE Project would deliver water to agencies within CCWD's service area, the Bay Area, the Delta, neighboring regions, and the south-of-Delta wildlife refuges.

Component Scores

The Water Storage Investment Program (WSIP) scoring components were reviewed and scored in accordance with the WSIP regulations section 6007 and 6009¹. The scores are recommendations to the Commission and the Commission will assign final scores at the June meeting.

The raw scores for Public Benefit Ratio (PBR), Relative Environmental Value (REV), and Implementation Risk component scores are in a different number scale than the regulation component score scale. The raw scores are normalized to the regulation scoring scale using the formula contained in section 6009(c)(1) of the regulations. The result is the highest raw score receives the maximum points for the scoring component and all other raw scores are assigned point values relative to where they fall in relation to the highest raw score.

Table 1 contains the staff recommended normalized scores for the various component items and the total score for the project.

Table 1. Preliminary Component Scores		
Component	Max Value	Score
Public Benefit Ratio and Non-Monetized Benefits	33	23
Relative Environmental Value	27	17
Resiliency*	25	22
Implementation Risk	15	14
Preliminary Expected Return for Public Investment Score		76

*Resiliency score is a non-normalized component score.

¹ All references to WSIP regulations refer to California Code of Regulations, title 23, section 6000 et. seq.

Public Benefit Ratio and Non-Monetized Benefit

The Commission determined the monetized value of public benefits at its May 1-3, 2018 meeting. At that meeting, the Commission afforded the applicant an opportunity to modify its funding request prior to final calculation of the PBR. The applicant did not alter its funding request that was contained in its February 2018 PBR Review. The PBR was calculated by dividing the total public benefits provided by the project by the applicant’s funding request and then normalized. The maximum points possible for this category is 33. The monetized public benefits accepted by the Commission for this project are:

- Ecosystem Improvement— Reduced Salmonid Entrainment
- Ecosystem Improvement—Refuge water supply
- Emergency Response—Delta outage
- Emergency Response—Drought emergency
- Recreation

Where applicable, Non-Monetized Benefit (NMB) scores were added to the PBR score, if the normalized PBR score was less than 33. NMB scores are solely for recreation, emergency response, or flood control benefits. Ecosystem and water quality benefits that were not monetized were scored in the REV process. The applicant included NMBs in its application.

For Emergency Response, the applicant has engaged in past, and is currently engaging in, pilot partnership projects with other water districts to use existing infrastructure to move water between the existing reservoir and multiple water agencies. The applicant states that by improving the physical system infrastructure for water delivery and by establishing a framework for regional cooperation and coordination among partner water agencies and districts, the proposed project and associated infrastructure could be a public benefit in the event of other emergency types in the region. Staff has verified that the past pilot partnership projects were a viable way to manage operational flexibility and that the project could be a public benefit in the event of an emergency in the region. The applicant did not fully describe the types of non-monetized emergencies and the importance of the benefit to those affected.

Table 2 presents the PBR and associated normalized score, along with the NMB and the staff recommended scores.

Table 2. Public Benefit Ratio and Non-Monetized Benefits			
Public Benefit Ratio, as determined by Commission	Normalized PBR Score	Non-Monetized Benefit Score	Preliminary Component Score
1.81	20	3	23

Relative Environmental Value

There are two types of REV: ecosystem and water quality provided by the California Department of Fish and Wildlife (CDFW) and the State Water Board (SWB), respectively. Each application indicated the CDFW or SWB priorities the project would address. A score was assigned by the degree to which ecosystem and/or water quality improvements associated with each claimed priority would be provided by a project.

An explanation of the REV percentage and how it was calculated can be found in the CDFW and SWB REV analysis documents located on the Commission website. For applications with both ecosystem and

water quality priorities, the score was split 70% ecosystem and 30% water quality. The score was then normalized to a maximum of 27 points. For applications that had only ecosystem priorities, the score is based solely on the ecosystem REV.

Table 3 presents the REV scores, as determined by CDFW, for ecosystem benefits, and the SWB, for water quality benefits.

Table 3. Relative Environmental Value		
Component	Comment	Score
Ecosystem	<p>The LVE project proposes to improve the Rock Slough Fish Screen to reduce entrainment and impingement for the benefit of fall-run Chinook salmon. Consistent with the Central Valley Project Improvement Act, the Project also proposes to provide Incremental Level 4 water to south-of-Delta wildlife refuges for habitat enhancement. The ecosystem priorities identified by the applicant are:</p> <ul style="list-style-type: none"> • Priority 13 – Remediate unscreened or poorly screened diversions to reduce entrainment of fish. • Priority 14 – Provide water to enhance seasonal wetlands, permanent wetlands, and riparian habitat for aquatic and terrestrial species on State and Federal wildlife refuges and on other public and private lands. 	48.80
Water Quality	The applicant did not include water quality benefits that relate to SWB Water Quality priorities in its application. Therefore, a Water Quality Relative Environmental Value analysis was not conducted.	NA

Table 4 shows the normalization calculation for the REV component score.

Table 4. Normalized Relative Environmental Value Calculation				
Total REV Score	Max REV Score	Max Possible Score	Preliminary Component Score	
48.80	÷	77.91	x	27 = 17

Resiliency Score

The resiliency score (total of 25 points) is made up of two pieces: the project’s integration and flexibility (10 points) and its response to an uncertain future (15 points). Applications that demonstrated a high quality of analysis and high level of integration and system flexibility scored higher than those that demonstrated a low quality of analysis or low levels of integration and added system flexibility. Applications with a good quality of analysis, and that demonstrated the project would perform well in future climate conditions including showing water would be available during a drought, scored higher than those that demonstrating a low quality of analysis, public benefits reduced, or low performance during a drought.

Table 5 is the staff recommended score for Resiliency and the evaluation of the two components: a) Integration and Flexibility; and b) Uncertainty.

Table 5. Resiliency		
Component	Comment	Score
Integration and Flexibility	<p>The applicant described a high level of integration of the proposed LVE Project with the Central Valley Project (CVP) and State Water Project (SWP) systems as well as regional and local water systems. The source water for this project is the Sacramento-San Joaquin Delta at CCWD's Rock Slough, Old River, and Middle River intakes, and at the Freeport Intake on the Sacramento River. The LVE Project is identified in regional water management planning efforts including the 2013 San Francisco Bay Area Integrated Regional Water Management (IRWM) Plan and the Bay Area Regional Reliability Partnership Drought Contingency Plan. Through integration of the proposed LVE Project operations with local agency partners, other regional water supply projects, and CVP and SWP, the LVE Project provides benefits and increases the flexibility of statewide water operations.</p> <p>The proposed LVE Project would be integrating with the operations of the local agency partners, other regional water supply projects, and with the Delta operations of the CVP and SWP to provide benefits and increase the flexibility of state-wide water operations. Additional storage provided by the LVE Project would be available to store CVP and SWP allocations for local agency partners during wetter periods. The LVE Project operations would also be integrated into the Freeport Intake Operations through agreements with East Bay Municipal Utilities District, Sacramento County Water Agency, and the Freeport Regional Water Intake Facility to allow the applicant to divert water at the Freeport Regional Water Intake Facility and convey to the LVE Project. In addition, the LVE Project operations would be integrated with the Santa Clara Valley Water District's Silicon Valley Advanced Water Purification Center, which is being expanded to produce water for groundwater recharge and/or direct portable reuse. The LVE Project is identified as a potential resource management strategy and climate change adaptation measure in the 2013 San Francisco Bay Area IRWM Plan. The LVE Project and associated facilities were also evaluated together with other potential future projects in the Bay Area Regional Reliability Partnership Drought Contingency Plan to determine how the region may benefit and become more resilient to drought and emergencies.</p> <p>The proposed LVE Project would provide operational flexibility by providing an additional way to store available CVP and SWP supply for local agency partners and wildlife refuges during wetter times for use later, conveying water to local agency partners and wildlife refuges when Delta exports are constrained. The increased operational flexibility would be effective for delivering water supplies during a drought.</p>	10
Uncertainty	The applicant provided quantitative analysis of the two extreme 2070 climate scenarios (2070 Wetter/Moderate-Warming and 2070 Drier/Extreme-	12

Table 5. Resiliency		
Component	Comment	Score
	<p>Warming) provided by WSIP. Under the extreme 2070 climate conditions, the refuge water supply and drought emergency deliveries would be greater compared to the 2070 climate conditions. The applicant did not describe how the recreation benefits would be affected by the extreme climate scenarios.</p> <p>The applicant analyzed the effect of the California WaterFix proposed action and relevant potential future projects and management actions upon the LVE Project’s public benefits. This analysis also included the requirements of the CCWD-Department of Water Resources California WaterFix Settlement Agreement for the mitigation of impacts to CCWD from the construction and operation of California WaterFix. The results of the analysis indicated that the refuge water supply and drought emergency deliveries would be slightly increased with the California WaterFix proposed action. The applicant did not describe how the recreation benefits would be affected by the California WaterFix proposed action.</p> <p>The applicant did not address, as required by section 6004(a)(8)(C) of the regulations, other sources of uncertainty identified by the applicant and describe alternative operational strategies or adaptations that could be adapted to sustain the public benefits.</p> <p>The applicant analyzed and described the performance of the project in providing the public benefits for the 1988-1992 drought period under the 2070 climate conditions.</p> <p>The amount of water stored in the water system due to the project at the beginning and end of the drought is 113 TAF and 122 TAF, respectively.</p>	
Preliminary Component Score		22

Implementation Risk

The implementation risk score is the total of the technical, environmental, economic and financial feasibility scores. One to five points, per category, were assigned depending on whether the information provided in the application showed a high or low risk of the project being built or operated in the timeframes provided, as well as whether the information was or was not well supported. The points total, maximum of 20, was then normalized for a maximum of 15 points.

Table 6 is the staff recommended score for Implementation Risk and the evaluation of the four component factors: Technical Feasibility, Financial Feasibility, Economic Feasibility, and Environmental Feasibility.

Table 6. Implementation Risk		
Implementation Risk	Comments	Score
Technical Feasibility	<p>The applicant demonstrated that the project can be constructed with existing technology and available construction materials, work force, and equipment. The applicant also demonstrated that the project is technically feasible consistent with the preliminary operations plan, as discussed below.</p> <p>Feasibility level cost estimates, design drawings, and construction schedule indicated the project can be constructed. The preliminary operations plan contains the four required components and are well supported by the information provided. The risk that the project cannot be operated to provide the substantiated public benefits, as described in the preliminary operations plan, is low.</p> <p>Preliminary operations plan components, as required by the regulations, are listed below:</p> <ul style="list-style-type: none"> • Project operations and public benefits under a range of hydrologic conditions, including wettest and driest years and multiple dry years - Well supported • The actions that will be taken to meet the desired public benefit objectives - Well supported • How operations will be monitored to ensure public benefit outcomes - Well supported • Preliminary adaptive management strategies - Well supported <p>The applicant describes in the Preliminary Operations Plan “CCWD_Tab6_BenCalcMonetResil_6-3_PrelimOpPlan” additional operations to be added to the existing and new LVE Project facilities to provide water supply for Local Agency Partners and refuges for a range of water year types.</p> <p>To meet the desired public benefits the applicant describes with well supported information that preliminary operations rules will balance water deliveries to Refuges and Local Agency Partners.</p> <p>The applicant demonstrates in the Preliminary Operations Plan “Section 6-3.3 Monitoring” the benefits and potential monitoring metrics for them.</p> <p>The applicant demonstrates with well supported information in the Preliminary Operations Plan “Section 6-3.4 Preliminary Adaptive Management Strategies” a process for improving performance through real-time adjustments and periodic plan updates.</p>	5

Table 6. Implementation Risk		
Implementation Risk	Comments	Score
Financial Feasibility	<p>The applicant has not fully demonstrated that sufficient funds are likely to be available from public and non-public sources to cover the construction and operation and maintenance (O&M) of the project over the planning horizon</p> <p>The financial analysis provided by the applicant indicates a medium certainty that the applicant can build or operate the project. The monetized non-public benefits are approximately fifty-three percent of the non-public costs.</p> <p>The applicant demonstrates a strong rate base and history of meeting financial obligations, as summarized in the applicant’s supporting documents. The applicant’s feasibility study describes the process needed to proceed from preliminary cost allocation to an implemented financial plan. However, the capacity and willingness of other required participants, such as other municipal water providers and agricultural beneficiaries, have not been fully demonstrated. The applicant has included an ability to pay calculation for municipal and industrial users, which effectively shows mean income in the service area is easily high enough to cover an increased water charge. Similar information was not provided for agricultural users.</p>	3
Economic Feasibility	<p>Considering all benefits and costs quantified and monetized by the applicant and adjusted by staff, the calculated benefit/cost (B/C) ratio is 0.93. Expected monetized benefits of the project are slightly less than expected costs. Public benefits include ecosystem, emergency response, and recreation and are about 60% of total benefits. Non-public benefits include water supply and water quality which are about 40% of total benefits.</p> <p>The applicant’s analysis of total costs relative to total public and non-public benefits, as adjusted by staff, indicates a medium certainty that the applicant can build or operate the project. The economic feasibility information is generally well-supported, and after staff adjustments, is consistent with the methods specified in the regulations and Technical Reference.</p>	3
Environmental Feasibility	<p>The application contains a final environmental document as well as a supplemental document that is specific to the WSIP. The applicant has indicated potential significant impacts that appear mitigatable and has an overall reasonable schedule. Therefore, this project appears to have a low implementation risk.</p> <p>The application included an Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) (2010) and a 2017 Draft Supplemental EIS/EIR, as well as a Notice of Exemption for the Mokelumne</p>	5

Table 6. Implementation Risk		
Implementation Risk	Comments	Score
	<p>Aqueducts Relining Project. The Final Supplemental EIS/EIR is expected to be complete by the end of 2018. Potentially significant but mitigatable impacts include adverse impacts to local hydrology, drainage, groundwater; biological resources; conflicts with land use policies related to airport safety; agricultural resources; transportation & circulation; air quality; noise; utilities; hazardous materials & public safety; visual & aesthetic resources; recreational resources; cultural & paleontological resources.</p> <p>The application included a comprehensive permit list that indicates permits will be acquired by mid-2020. The applicant has begun initial discussions with State Water Board to petition to add point of diversions, diversions to storage in Los Vaqueros Reservoir and/or places of use to their existing water right.</p> <p>The application and environmental document both describe how potential significant environmental impacts will be reduced or mitigated. The application indicated significant and unavoidable impacts to agriculture in the Alternative 4 which was the preferred alternative.</p>	
Preliminary Component Score		16

Table 7 shows the normalization calculation for the Implementation Risk score.

Table 7. Normalized Implementation Risk (IR)			
Total IR Score	Maximum IR Score	Maximum Possible Score	Preliminary Component Score
16	÷	17	x
		15	=
			14