

State Water Resources Control Board

TO: Joseph Yun, Executive Officer
California Water Commission
901 P Street, Room 314
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FROM:  Eileen Sobeck
Executive Director

DATE: May 21, 2018

SUBJECT: WATER STORAGE INVESTMENT PROGRAM (WSIP) - RECOMMENDATIONS
FOR RELATIVE ENVIRONMENTAL VALUES OF WATER QUALITY BENEFITS

With this letter and attached project assessments, the State Water Resources Control Board (State Water Board or Board) submits to the California Water Commission (Commission) the recommended overall water quality relative environmental value (REV) project scores for the eligible Water Storage Investment Program (WSIP) Proposition 1 applications with claimed water quality benefits.

The State Water Board recognizes the value of additional surface water and groundwater storage in California. The WSIP represents an important opportunity to invest in California's water future, ensure a more reliable and resilient water supply, and restore important species and habitat. The Board continues to acknowledge the complexity of the task before the Commission. These scores reflect the significant work completed by the Commission, technical review teams, and applicants to date. They are an important step towards ensuring the WSIP-funded water storage projects achieve their stated water quality and public benefits.

Per the language of Proposition 1 and the Commission's WSIP regulations, the State Water Board is tasked with determining a project's relative environmental value for water quality improvements as they relate to the State Water Board's nine water quality priorities.¹ (The water quality priorities focus on water quality improvements associated with surface water, groundwater, and conjunctive use projects.) Applicants aligned their claimed water quality benefits with one or more of the priorities. The State Water Board fully evaluated and scored the claimed monetized and non-monetized water quality benefits.

State Water Board staff used the water quality REV criteria² to assess the extent to which each claimed priority would be achieved, as supported by the application. Projects were evaluated based only on claimed priorities to (1) ensure an equitable comparison across

¹ Listed in California Code of Regulations, title 23, section 6007, subsection (c), Table 3.

² Listed in California Code of Regulations, title 23, section 6007, subsection (c), Table 4.

project types (i.e., surface water, groundwater, or conjunctive use), and (2) not penalize projects addressing a limited number of priorities.

The enclosed project assessments summarize the include the State Water Board's technical review score packages for the WSIP applications. The State Water Board calculated an overall water quality REV project score for each project based on the claimed water quality priorities and REV criteria.

Enclosures: Water Quality REV Assessments

cc: [via email only]

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Water Quality Relative Environmental Value Assessment Inland Empire Utilities Agency – Chino Basin Conjunctive Use Environmental Water Storage/Exchange Program

Project Description

The proposed Chino Basin Conjunctive Use Environmental Water Storage Program (proposed Program) would construct an advanced water treatment facility and distribution facilities that would store up to 15 thousand acre-feet per year (TAF/y) of unused new local water supply in the Chino Basin Water Bank. The bank would be operated in a way that dedicates blocks of water of up to 50 TAF/y towards ecosystem benefits north of the Delta. The State Water Resources Control Board (State Water Board) only evaluated the benefit of the Chino Basin Water Bank. The ecological benefits associated with the dedicated blocks of water were evaluated by the California Department of Fish and Wildlife (CDFW).

Inland Empire claimed that the proposed Program would address one State Water Board water quality priority:

- Priority 6: Protect, clean up, or restore groundwater resources in high- and medium-priority basins designated by the Department [of Water Resources].

Scoring Process

The State Water Board staff calculated a Relative Environmental Value (REV) for the water quality improvements of each project, as required by California Code of Regulations, title 23, section 6007, subsection (c). This calculated score is referred to as the Overall Water Quality REV Project Score in this document. Water quality priorities are listed in Table 3 of the regulation; water quality REV criteria are listed in Table 4 of the regulation. Staff independently evaluated the information provided in the application for each claimed priority and assigned REV criteria points using the following scoring guidance:

- 4 points: claimed improvement would be fully provided by the project, and is fully supported by the application.
- 1 to 3 points: claimed improvement would be partially provided by the project, and is partially or fully supported by the application.
- 0 points: claimed water quality improvement associated with a priority would not be provided by the project, and is not supported by the application.
- n/a: REV is not applicable to the claimed priority for this project.

A priority score was calculated for each claimed priority; it is the total REV criteria points for that priority. One additional point was assigned for each claimed priority (REV 1 Points). Together, the priority scores and REV 1 Points sum to the project's Total Priority Score. The Total Priority Score was divided by the Total Maximum Points Possible to calculate the Overall Water Quality REV Project Score.

Summary of Recommendations to the California Water Commission

The State Water Board assigned the proposed Program an overall water quality REV project score of 92.5%. State Water Board staff believe that the project would not only protect groundwater, but would also develop and expand the ability for recycled water to be treated and stored within the Chino Basin. The proposed project meets the objectives, goals, and guidelines of the WSIP. The overall water quality REV project score was reduced from 100% because staff would have liked to have seen additional information to fully support the magnitude of the benefit (REV 2) and more detail on how the benefit would be adaptively managed (REV 5).

The applicant noted that in order to achieve the local benefit, water for recharge purposes must be secured from upstream Santa Ana River dischargers who must agree to maintain instream flows in the river. At the time of submitting this application, these commitments have not been secured. If commitments from the upstream Santa Ana River dischargers are secured, the State Water Board believes the project will provide a worthwhile groundwater benefit and therefore have a high REV. If, however, commitments from Santa Ana River upstream dischargers cannot be secured, the State Water Board does not have a high confidence in the claimed benefit being achieved and it would not be in the Board's best interest to contract for this benefit (assuming the Commission selects this project for WSIP funding).

Table 1 summarizes the water quality REV criteria points assigned to each claimed priority, priority scores, and the overall water quality REV project score. Technical review notes for water quality REV criteria points are summarized in Table 2.

Discussion of claimed priorities:

Priority 6: Restore groundwater conditions

Based on the technical review of the information provided in the application, staff assigned Priority 6 a priority score of 36 points of out a maximum possible 40 points. As described in the application, the proposed Program will protect groundwater quality by producing advanced treated wastewater with a lower concentration of total dissolved solids (TDS) and recharging the basin with the lower TDS water. Advanced treatment facilities that remove salts from the reclaimed water prior to the recharge process would be installed. The lower TDS water will be injected upgradient of the existing high TDS groundwater to promote migration of the high TDS groundwater to a desalter well system for removal from the subbasin. The 15 TAF/y of lower TDS water is not a significant enough volume of recharge water to lower the basin's TDS concentration. It will, however, keep the TDS concentration from increasing over time. Protecting the basin water quality meets the intent of State Water Board Priority 6. As of the time this application was submitted, Inland Empire was in the process of securing upstream discharges of tertiary-treated wastewater and the commitment of those dischargers to maintain instream flows of the Santa Ana River.

Table 1. Scoring matrix for claimed water quality priorities.

Priorities	Water Quality Relative Environmental Value (REV) Criteria											Priority Score	Maximum Points Possible
	REV 2	REV 3	REV 4	REV 5	REV 6	REV 7	REV 8	REV 9	REV 10	REV 11	REV 12		
P1													
P2													
P3													
P4													
P5													
P6	3	4	4	2	4	4	4	3	n/a	4	4	36	40
P7													
P8													
P9													
REV 1 Points											1		
Total											37	40	
Overall Water Quality REV Project Score											92.5%		

Notes:

Water Quality REV Criteria: REV 1: Number of different water quality priorities for which corresponding public benefits are provided by the project; REV 2: Magnitude of water quality improvements; REV 3: Spatial scale of water quality improvements; REV 4: Temporal scale of water quality improvements; REV 5: Inclusion of an adaptive management and monitoring program that includes measurable objectives, performance measures, thresholds, and triggers for managing water quality benefits; REV 6: Immediacy of water quality improvement actions; REV 7: Immediacy of the realization of water quality benefits; REV 8: Duration of water quality improvements; REV 9: Consistency with water quality control plans, water quality control policies, and the Sustainable Groundwater Management Act (2014); REV 10: Connectivity of water quality improvements to areas that support beneficial uses of water or are being managed for water quality; REV 11: Resilience of water quality improvements to the effects of climate change and extended droughts; REV 12: Extent to which undesirable groundwater results that are caused by extractions are corrected. (Cal. Code Regs., tit. 23, § 6007, subd. (c), Table 4.)

Overall Water Quality REV Project Score = Total Priority Score / Total Maximum Points Possible.

Technical reviewers assigned REV Criteria points to each claimed priority using the following scoring guidance:

- 4 = claimed improvement would be fully provided by the project and is fully supported by the application;
- 1-3 = claimed improvement would be partially provided by the project, and is partially or fully supported by the application;
- 0 = claimed improvement would not be provided by the project and is not supported by the application;
- n/a = REV is not applicable to the claimed priority for this project.

Table 2. Technical review application scoring notes for claimed water quality benefits.

REV Criteria ¹	Score	Notes
Priority Claimed: Priority 6 (Protect, clean up, or restore groundwater resources in high- and medium-priority basins designated by the Department [of Water Resources].)		
REV 2: Magnitude	3	Stated the proposed Program will pump 15 TAF/y of reclaimed water into the Chino Groundwater Basin for groundwater recharge. This would help increase groundwater levels and improve the water quality of the groundwater basin by producing a lower TDS water and injecting it into the high TDS groundwater. It was indicated that the TDS concentrations with- and without- the proposed project would be the same. TDS data from 1973 to 2015 was used to calculate the 2030 TDS projections; more recent data could have been used.
REV 3: Spatial	4	Information on the spatial scale of the proposed Program was provided. Geographic and geologic dimensions of the aquifer, rate of water infiltration over time, and substrate porosity in the project area were also provided.
REV 4: Temporal	4	Information on the temporal extent of the proposed Program was provided. The proposed Program would provide year-round (365 days per year) basin injections. As described, the Program would use 20 injecting wells to continuously inject 456 gallons per minute (gpm). If five wells were to undergo long-term maintenance, the flow rate would increase to 619 gpm to make up for lost production. Additionally, it is stated that the proposed Program would provide consistent year-round minimum flow for the Santa Ana River, which would support Santa Ana Sucker Fish habitat.
REV 5: Adaptive Management	2	Stated the proposed Program would enhance the emergency response water supply availability for Inland Empire and other participating agencies during events (e.g., floods, fire, or seismic), that could disable infrastructure. Stated the proposed Program will utilize the existing monitoring network and will take appropriate monitoring measures for the proposed Program. Data provided is both insufficient and out-of-date. The baseline identified in the application is well sampling collected between 1999 and 2001. Data from the Chino Basin Watermaster is referenced, but not provided. More information regarding how the proposed Program would be adaptively managed was needed.
REV 6: Improvement Action	4	Detailed information was provided, including explicitly stating when actions would commence, the number the number of months each action is expected to take, and the when the proposed Program is expected to start (2025).

REV Criteria ¹	Score	Notes
REV 7: Realization of Benefit	4	Information was provided, including the number of months to full realization of water quality benefits. The proposed Program will require 160 months to realize the improvements, including 80 months for permitting and construction, and 80 additional months to store 100 TAF at a recharge rate of 15 TAF/y. Short- and long-term goals are clearly identified and appear to be feasible. This timeline, however, assumes that no groundwater is withdrawn from the Chino Bank. Borrowing/withdrawal from the bank could begin as early as 26 months from the start of the project.
REV 8: Duration	4	Stated the project is expected to have a duration of 50 years of injecting 15 TAF/y of advanced-treated reclaimed water, 6 years at the end of 2030 if injection starts during 2025.
REV 9: Consistency	3	Consistency is documented in the application. Based on the information provided, the proposed Program is consistent with the Water Quality Control Plan for the Santa Ana River Basin. The application also incorporates four of the six sustainability factors identified in the Sustainable Groundwater Management Act (SGMA).
REV 10: Connectivity	n/a	n/a
REV 11: Resilience	4	Stated that the proposed Program would allow an arid region of Southern California to adapt in times of eminent climate change using their own recycled water to recharge the groundwater basin and reduce TDS concentrations. Also stated that the project will provide ecosystem benefits during dry and critical dry years by reserving a volume of water in Lake Oroville. The application identified one climate change factor (drought) that was considered in the project siting and design; it also provided a brief explanation for why the other climate change factors were not applicable.
REV 12: Undesirable Groundwater Results	4	As described, the proposed Program would address four of the six undesirable results (per SGMA) currently present in the basin: low groundwater levels, reductions of groundwater storage, degradation of groundwater quality, and land subsidence (potentially). Due to geographic and geologic basin characteristics, the proposed Program would not address saltwater intrusion or interconnection with surface water. Existing groundwater management authorities within the groundwater basin were identified. The applicant appears to have a comprehensive plan to address TDS, however it is unclear what measures will be taken to address salinity and other constituents.

REV Criteria ¹	Score	Notes
Other Comments		The applicant noted that in order to achieve the local benefit, water for recharge purposes must be secured from upstream dischargers to the Santa Ana River and the dischargers must agree to maintain instream flows in the river. At the time of submitting this application, commitments from these dischargers had not been secured. If commitments from the upstream Santa Ana River dischargers are secured, the State Water Board believes the project will provide a worthwhile groundwater benefit. If, however, these commitments cannot be secured, the State Water Board does not have a high confidence in the claimed benefit being achieved and it would not be in the Board's best interest to contract for this benefit (assuming the Commission selects this project for WSIP funding).

Notes:

¹ See Table 1, Footnote 1 for water quality REV criteria definitions.

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