

State Water Resources Control Board

TO: Joseph Yun, Executive Officer
California Water Commission
901 P Street, Room 314
Sacramento CA

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]

Amy Young, Program Manager
California Water Commission
Amy.Young@water.ca.gov

Gordon Burns, Undersecretary
California Environmental Protection Agency
Gordon.Burns@calepa.ca.gov

Felicia Marcus, Chair
State Water Resources Control Board
Felicia.Marcus@waterboards.ca.gov

Michael Lauffer, Chief Counsel
State Water Resources Control Board
Michael.Lauffer@waterboards.ca.gov

Eric Oppenheimer, Chief Deputy Director
State Water Resources Control Board
Eric.Oppenheimer@waterboards.ca.gov

George Kostyrko, Director
Office of Public Affairs
George.Kostyrko@waterboards.ca.gov

Lily Weaver, Staff Counsel
State Water Resources Control Board
Lily.Weaver@waterboards.ca.gov

James Nachbaur, Director
Office of Research, Planning, and
Performance
State Water Resources Control Board
James.Nachbaur@waterboards.ca.gov

Katheryn Landau, Senior Environmental
Scientist
Office of Research, Planning, and
Performance
State Water Resources Control Board
Katheryn.Landau@waterboards.ca.gov

Water Quality Relative Environmental Value Assessment Sites Project Authority – Sites Project

Project Description

The Sites Project will be an off-stream reservoir independently owned, constructed, governed, and operated by the Sites Project Authority under its own water rights and other regulatory requirements, but in coordination with the U.S. Bureau of Reclamation and the California Department of Water Resources (DWR). The stated objective for the Sites Project is to make California's water system more efficient, flexible, and reliable. The reservoir would provide additional water storage that could be used to provide public benefits. The public benefits for the Sites Project are to improve the survival of anadromous fish and other aquatic species, provide additional water to support wetland habitat development, provide opportunities for recreation, and reduce flood damage.

Sites Project Authority claimed the project would address four of the State Water Resources Control Board (State Water Board) water quality priorities:

- Priority 1: Improve water temperature conditions in surface water bodies that are not meeting water quality standards for temperature;
- Priority 6: Protect, clean up, or restore groundwater resources in high- and medium-priority basins designated by the Department [of Water Resources];
- Priority 7: Achieve Delta tributary stream flows that resemble natural hydrograph patterns or other flow regimes that have been demonstrated to improve conditions for aquatic life; and
- Priority 9: Provide water for basic human needs, such as drinking, cooking, and bathing, in disadvantaged communities, where those needs are not being met.

The Sites Project Authority did not monetize the claimed water quality benefits.

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 project an overall water quality REV project score of 52.5%. This score is based on the four claimed non-monetized priorities. The Board believes the project could result in water quality improvements, however not all claimed benefits were quantified nor was adequate documentation provided to support all applicant claims. The project could improve temperatures, particularly in critical years. As presented in the application, however, the magnitude of the improvement is believed to be relatively small in most years. Similarly, the project's stream flow benefit is believed to be minor and intermittent; the application does not fully support the stated claims that the project would increase Delta smelt food sources and thereby increase Delta smelt abundance over time. Documentation supporting claims that the high-quality surface water generated by this project would be dedicated for groundwater restoration or as a supplemental water supply for disadvantaged communities (DACs) with unsafe drinking water was also required.

Additionally, staff believe the project's stated timeline may not be achievable given the time it will take to obtain necessary approvals, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. For these reasons, the overall water quality REV project score was reduced from 100%.

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 1: Improve temperature conditions

Based on the technical review of the information provided in the application, staff assigned Priority 1 a priority score of 26 points out of a maximum possible 36 points. As described in the application, the project would increase cold water pool storage in Shasta Lake, Lake Oroville, and Folsom Lake and improve temperatures in the Sacramento and American rivers during certain months at specific compliance points, particularly in Below Normal, Dry, and Critical water years. The project's temperature benefits would help to achieve compliance with the 56°F water quality standard in August and September during critical water years for the Sacramento River.

While the temperature benefit is sufficiently supported and generally complete, based on the information provided in the application and State Water Board staff expertise, the score was reduced for several reasons (which are described in more detail in Table 2). First, while the temperature benefit may be significant in critical years, it will be relatively small in most other years. Second, the information provided failed to respond completely to the application question regarding resilience to climate change. Providing additional supporting information may have increased the score. Finally, the stated time

frames to realize initial and full benefits (by 2028 and 2030, respectively) may not be achievable given the time it will take to obtain necessary approvals for the project and the time it will take to construct and fill the reservoir.

Priority 6: Restore groundwater conditions

According to the application, the project would improve groundwater conditions by providing high quality surface water to Sites Participants. The water used to replenish groundwater would come from surface water deliveries, and direct or in-lieu recharge. The quality of the source water would depend on the location of the Sites Participant and the conveyance system used to deliver the water. In-lieu recharge activities would not alter the natural composition of the underlying aquifer water quality. In general, the water quality of the surface water deliveries is considered to be of good quality with low concentrations of salts when compared to underlying groundwater. Utilizing supplemental surface water supplies from the Sacramento River in areas of agricultural production and in-lieu of groundwater would support salt management practices and help reduce groundwater quality degradation.

Based on the technical review of the information provided in the application, staff assigned Priority 6 a priority score of 18 points out of a maximum possible 44 points. The point score was reduced from the maximum for several reasons. First, with respect to improvement in groundwater conditions, the applicant does not control whether the delivered water would be used for groundwater improvement, nor are there assurances that the entities receiving water would be obligated to use it for a specific purpose. In addition, the applicant failed to quantify the benefit in relationship to groundwater conditions. Instead the applicant quantified water based on surface water flows. Assurances from Sites Participants that water would be dedicated for this benefit were required. Since the applicant did not provide the necessary assurances, the benefit was not sufficiently supported. The applicant should have also quantified the groundwater improvement, not the surface water deliveries. Because it failed to do so, it did not earn all available points.

Priority 7: Improve Delta tributary stream flows

As described in the application, the operation goal for the Sites Reservoir Project is to benefit Delta smelt in the lower Cache Slough and lower Sacramento River areas by delivering water through the Yolo Bypass in the late summer and early fall. The Cache Slough area receives water from the Yolo Bypass; it is the only place in the Delta estuary where the Delta smelt population has recently increased. The project's flow regime is intended to increase the desirable food sources which should help improve Delta smelt growth and condition as they mature into adults, thereby increasing Delta smelt abundance over time. Two pulses of flow of at least 400 cubic feet per second each over a two- to three-week period would be made into the Yolo Bypass via the Colusa basin and drain out into the Sacramento River. Pushing water with a high population of phytoplankton and zooplankton directly into an area of good Delta smelt habitat may benefit the Delta smelt population.

Based on the technical review of the information provided in the application, staff assigned Priority 7 a priority score of 19 points out of a maximum possible 36 points. The score was reduced because stream flow benefit is believed to be minor and

intermittent, and the applicant's supporting documentation was not fully responsive to several application questions. (See Table 2 for further discussion.) Providing additional supporting information for several of the application questions may have increased the priority score.

Priority 9: Provide water for basic human needs to disadvantaged communities

The project would provide supplemental surface water to municipal and industrial Sites Participants serving disadvantaged communities (DACs) whose drinking water supplies exceed California maximum contaminant levels (MCLs) for various naturally occurring and human-caused contaminants (including arsenic, nitrates, hexavalent chromium, bacteria, radionuclides, and disinfection by-products). Many of the DACs in the project area are primarily dependent on groundwater for their drinking water supply. The project could generate high-quality surface water, which could then be made available to supplement DACs with unsafe groundwater drinking water supplies.

Based on the technical review of the information provided in the application, Priority 9 was assigned a priority score of 17 points out of a maximum possible 44 points. Like Priority 6, the applicant did not provide an assurance that entities receiving water would be obligated to use it to supplement drinking water for DACs. While there is a potential for the basic human needs benefit to be achieved, the applicant did not indicate that it would be or could be responsible for providing that benefit. Rather, the entities receiving water from the Sites Project Authority would be responsible for providing the benefit. Assurances from Sites Participants that water would be dedicated for basic human needs were required. The applicant's failure to provide such assurances resulted in a reduced point score.

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	3	3	3	4	2	2	3	3	n/a	3	n/a	26	36
P2													
P3													
P4													
P5													
P6	2	2	2	1	1	1	2	1	2	2	2	18	44
P7	3	1	1	4	2	2	2	1	n/a	3	n/a	19	36
P8													
P9	2	2	1	1	1	1	2	1	2	2	2	17	44
REV 1 Points												4	
Total												84	160
Overall Water Quality REV Project Score												52.5%	

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 1 (Improve water temperature conditions in surface water bodies that are not meeting water quality standards for temperature.)		
REV 2: Magnitude	3	Current with- and without-project 2030 temperature values for each surface waterbody were provided. An overall average temperature improvement of 0.38°F compared to the “without project” conditions was reported across various stretches of the Sacramento and American Rivers (and Trinity River). The application summary table and documentation supported the 0.38°F improvement. However, the model uncertainty of 0.5°F is greater than the average 0.38°F claimed. It is unclear what level of improvement would be achieved.
REV 3: Spatial	3	Improvements are projected for 59 miles of the Sacramento River and 30 miles of the American River. The maps included in the application support the claimed spatial area of improvement.
REV 4: Temporal	3	Provided temperature improvements for the dry months for each surface waterbody. Provided temperature improvements for July through November for select locations. Supporting information for the claimed temperature improvements was provided.
REV 5: Adaptive Management	4	A preliminary Adaptive Management Framework was included. The framework identifies the conditions of concern, objectives, types of monitoring/sampling that would be conducted, and the parties that will make operational decisions (i.e., Sites Reservoir Authority). The framework cites temperature as an “environmental condition of primary concern” and as a “key monitoring element”. While the framework only highlights the general components of adaptive management, it is stated that a “more detailed plan and decision-making process” will be developed during the project’s future phases.
REV 6: Improvement Action	2	Stated the initial benefits are expected to be achieved in year 2028 (6 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. However, the stated time frames may not be achievable given the time it will take to obtain necessary approvals for the project from the State Water Board and other agencies, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. Additional supporting information to verify the stated time frame was not provided.

REV Criteria ¹	Score	Notes
REV 7: Realization of Benefit	2	Stated the initial benefits are expected to be achieved in year 2028 (6 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. However, the stated time frames may not be achievable given the time it will take to obtain necessary approvals for the project from the State Water Board and other agencies, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. Additional supporting information to verify the stated time frame was not provided.
REV 8: Duration	3	Stated the benefit duration will be 100 years. Modeling was performed for 2070 with- and without-project conditions. Supporting information to show that benefits would last for 100 years was not provided.
REV 9: Consistency	3	The project appeared to be consistent with water quality control plans and policies, but not at all times. Per the Operations Plan, meeting water users' demands would be prioritized over providing water for temperature or flow benefits.
REV 10: Connectivity	n/a	n/a
REV 11: Resilience	3	Predicted climate changes were incorporated into the modeling efforts. Provided information failed to respond completely to the application question regarding resilience to climate change at 2030. The question specifically asks for a description of the identified climate risk factors which were part of the project siting and design, and why the identified risk factors were not applicable (if any). Explanation for why particular risk factors were not applicable to this project was not provided.
REV 12: Undesirable Groundwater Results	n/a	n/a
Other Comments	There are outstanding questions regarding the claimed timeframes for realization of this benefit due to the permitting process, including the water right approval process.	
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	2	Stated the project would benefit several hydrologic regions, which are identified. DWR's website for groundwater elevations was referenced; however, the volume of each groundwater basin was not provided. Water quality information is provided for each basin, but it was very general/qualitative and did not answer the application's question "what is the water quality of the water used to restore groundwater". General statements regarding water quality improvements were made that were not adequately supported by documentation.

REV Criteria ¹	Score	Notes
REV 3: Spatial	2	Hydrologic areas where increased surface water deliveries would occur were identified. A map of the identified hydrologic areas was provided. However, surface water deliveries may not be directly proportional to restoration of groundwater quality. This REV asks for the geographic extent of the improvement of groundwater quality. The location of this restoration was not quantified.
REV 4: Temporal	2	Stated the improvement is expected to occur annually, but the timing for when the improvements are expected to occur is not provided.
REV 5: Adaptive Management	1	Based on the adaptive management and monitoring strategies for improved groundwater level and storage conditions have not been developed. Stated these strategies would be incorporated into existing Sites Participant groundwater monitoring programs or those which will be developed as part of Sustainable Groundwater Management Act (SGMA) requirements, but does not provide a guarantee that these strategies will be developed or implemented.
REV 6: Improvement Action	1	Stated the initial benefits are expected to be achieved in year 2028 (6 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. However, the stated time frames may not be achievable given the time it will take to obtain necessary approvals for the project from the State Water Board and other agencies, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. Additional supporting information to verify the stated time frame was not provided.
REV 7: Realization of Benefit	1	Stated the initial benefits are expected to be achieved in year 2028 (6 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. However, the stated time frames may not be achievable given the time it will take to obtain necessary approvals for the project from the State Water Board and other agencies, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. Additional supporting information to verify the stated time frame was not provided.
REV 8: Duration	2	Stated that the benefit duration will be 100 years, with full benefits expected to be achieved in year 2030. Modeling was performed for 2070 with- and without-project conditions. Supporting information to show that benefits would last for 100 years was not provided.

REV Criteria ¹	Score	Notes
REV 9: Consistency	1	Stated the applicant would not be responsible for verifying that the groundwater improvement is consistent with SGMA requirements or water quality control plans. Stated that individual Sites Participants would be responsible for consistency determinations and compliance. Supporting information was not provided.
REV 10: Connectivity	2	Stated the project would allow for greater operational flexibility so support maintaining hydrologic connections between surface water and groundwater. However, it is unclear how the greater operational flexibility would achieve this. Additionally, the application states that Sites Participants would be responsible for implementing conjunctive use practices; it is not clear how the Sites Project Authority can assure this benefit.
REV 11: Resilience	2	Various modeling scenarios were performed to incorporate various climate changes, such as drought, future project and water management actions, ecosystem improvements, and alternatives for intakes. However, the modeling focuses on surface water releases and operational flexibility that can be implemented. Based on the application, modeling was not conducted to evaluate improvements to groundwater. Additional information was needed to quantify this benefit.
REV 12: Undesirable Groundwater Results	2	Stated the Sites Project could potentially assist Sites Participants in achieving compliance under SGMA. However, information regarding 2030 with-project groundwater conditions was not provided nor was information regarding how the project would improve conditions in groundwater basins where undesirable results caused by extractions have occurred. Additional information was needed to quantify this benefit.
Other Comments	There are outstanding questions regarding the claimed timeframes for realization of this benefit due to the permitting process, including the water right approval process.	
Priority Claimed: Priority 7 (Achieve Delta tributary stream flows that resemble natural hydrograph patterns or other flow regimes that have been demonstrated to improve conditions for aquatic life.)		
REV 2: Magnitude	3	Provided pulse flow values and periods that the flows would occur. Stated that “the release would not occur every year”. Additional supporting information was needed to quantify this benefit.
REV 3: Spatial	1	Included a narrative description of the geographic location for expected improvement. Supporting information was not provided nor was the geographic extent quantified.
REV 4: Temporal	1	Stated that the improvement is expected to occur August through October on the lower Sacramento River. Supporting information was not provided.

REV Criteria ¹	Score	Notes
REV 5: Adaptive Management	4	Described monitoring strategies, potential measurable objectives, triggers, and adaptive measures. The Project's preliminary Adaptive Management Framework includes objectives and performance measures that will benefit Delta flows.
REV 6: Improvement Action	2	Stated that initial benefits are expected to be achieved in year 2026 (4 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. Supporting information was not provided.
REV 7: Realization of Benefit	2	Stated that baseline monitoring is expected to be begin in year 2025 with full realization of improvements achieved in the lower Sacramento River by 2030. Supporting information was not provided.
REV 8: Duration	2	Stated the improvement is expected to last 90 years. Supporting information was not provided.
REV 9: Consistency	1	Stated the project is consistent with the California Natural Resources Agency's Delta Smelt Resiliency Strategy. Supporting documentation was not provided.
REV 10: Connectivity	n/a	n/a
REV 11: Resilience	3	Predicted climate changes were incorporated into the modeling efforts. Provided information failed to respond completely to the application question regarding resilience to climate change at 2030. The question specifically asks for a description of the identified climate risk factors which were part of the project siting and design, and why the identified risk factors were not applicable (if any). Explanation for why particular risk factors were not applicable to this project was not provided.
REV 12: Undesirable Groundwater Results	n/a	n/a
Other Comments		There are outstanding questions regarding the claimed timeframes for realization of this benefit due to the permitting process, including the water right approval process.

REV Criteria ¹	Score	Notes
Priority Claimed: Priority 9 (Provide water for basic human needs, such as drinking, cooking, and bathing, in disadvantaged communities, where those needs are not being met.)		
REV 2: Magnitude	2	Stated the benefits would vary depending on where supplemental surface supplies would be delivered. DACs within the groundwater basins which could potentially be served by the project were identified. However, it is unclear how the Sites project would transport water to the identified water systems and how it would ensure the transported water would provide basic human needs. Additional information was needed to quantify this benefit. Provided documentation does not explain how surface water from Sites would provide basic human needs of clean drinking water. It is unclear if the identified water systems are willing to accept the water from Sites or what conditions may apply. With- and without-project conditions in 2030 were not provided.
REV 3: Spatial	2	Stated the benefits would vary depending on where supplemental surface supplies would be delivered. Maps are provided to show Site Participant service areas and the geographic extent of DACs in relation to these service areas. Additional information was needed to quantify this benefit. Provided documentation does not explain how the DACs would benefit from potential Sites water or how water to provide basic human needs would be transported. It is unclear if the identified water systems are willing to accept the water from Sites.
REV 4: Temporal	1	Stated that benefits would vary depending on where supplemental surface supplies would be delivered. Specifics regarding the time period in which the improvement would occur was not provided. Rather, it is stated that potential deliveries could vary year to year. Additional information was needed to quantify this benefit.
REV 5: Adaptive Management	1	Described the project's Adaptive Management and Monitoring Framework, which will be used to implement objective-based monitoring focused on specific Sites Project objectives and desired outcomes for ecosystem priorities, and the Operations Plan. While the Operations Plan does list reliability of water supply as an overarching operations criteria, it is unclear how this links to the basic human needs claim. Additional information was needed to quantify this benefit.

REV Criteria ¹	Score	Notes
REV 6: Improvement Action	1	Stated that initial benefits are expected to be achieved in year 2028 (6 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. However, the stated time frames may not be achievable given the time it will take to obtain necessary approvals for the project from the State Water Board and other agencies, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. Additional supporting information to verify the stated time frame was not provided.
REV 7: Realization of Benefit	1	Stated that initial benefits are expected to be achieved in year 2028 (6 years after the grant encumbrance) and full benefits are expected to be achieved in year 2030. However, the stated time frames may not be achievable given the time it will take to obtain necessary approvals for the project from the State Water Board and other agencies, and the time that it will take to construct and fill the reservoir. Project requirements, such as water right approvals, may take several years; potential litigation could extend the time needed before benefits could be achieved. Additional supporting information to verify the stated time frame was not provided.
REV 8: Duration	2	Stated the benefit duration will be 100 years, with full benefits expected to be achieved in year 2030. Modeling was performed for 2070 with- and without-project conditions. Supporting information to show that benefits would last for 100 years was not provided.
REV 9: Consistency	1	Stated the project is consistent with water quality control plans. The project EIR (cited in the application) states that no potentially significant direct water quality impacts associated with the project were identified. However, additional information was needed to quantify this benefit.
REV 10: Connectivity	2	General statements are made regarding the how project will improve operational flexibility and maintain hydrologic connections between surface water and groundwater. However, connectivity related to basic human needs is not provided.
REV 11: Resilience	2	Various modeling scenarios were performed to incorporate various climate changes, such as drought, future project and water management actions, ecosystem improvements, and alternatives for intakes. However, no information was provided regarding how the Sites Project would improve resiliency with regards to providing water for basic human needs. Additional information was needed to quantify this benefit.

REV Criteria ¹	Score	Notes
REV 12: Undesirable Groundwater Results	2	States the project would improve groundwater sustainability by supplying surface water to facilitate increased conjunctive use practices and for replenishment to enhance aquifer storage recovery, and that these practices may result in incidental water quality, salt water intrusion and subsidence improvements. Discussion regarding how Sites may improve storage during drought conditions is included. However, the link to undesirable groundwater results or how it relates to this benefit is not provided.
Other Comments		While the application did not fully support some of the REV's listed above, based on the information provided the project has the potential to assist DACs by providing better quality surface water. DACs partially or entirely reliant on contaminated groundwater could benefit the most from this project. The applicant did not provide an assurance that entities receiving water would be obligated to use it to supplement drinking water for DACs. While there is a potential for the basic human needs benefit to be achieved, it does not seem as though the applicant is responsible for providing that benefit. The entities receiving water from the Sites Project Authority would be responsible for providing the benefit. For this benefit to be considered sufficiently supported, some type of assurance needed to be provided showing that the water would be dedicated for basic human needs.

Notes:

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

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.