

**WSIP Data and Information Summary Table: General Application Questions for Water Quality Priorities**

**Instructions:** This table must be used (only once) for each project. Please provide responses below, regardless of priorities claimed, for the overall project. If the information varies based on the claimed priority(ies), explain the variations. Attach up to three (3) additional pages if more space is needed.

**Check (x) all priorities that the project would address and realize (i.e., check all claimed priorities):**

Priority 1: Temperature	Priority 2: Dissolved Oxygen	Priority 3: Nutrients	Priority 4: Mercury	Priority 5: Salinity	Priority 6: Groundwater	Priority 7: Delta Tributary Flows	Priority 8: Demand on Delta	Priority 9: Basic Human Needs
X					X	X		X

**1. Identify the current conditions date (i.e., year) that is used within the application. Current conditions must be based on the date (year) of the CEQA Notice of Preparation for the project or subsequently revised information used to describe existing conditions. The current condition date must be used consistently throughout the water quality priorities application section.**

An updated CEQA Notice of Preparation for the Sites Reservoir Project was released in February 2017. The current conditions date used in the analyses for the application was based on the DWR Delivery Capability Report and base scenario model released in July 2015. The year 2015 was used for current conditions because the Delivery Capability Report and base scenario model the most recent and best data available for the analysis.

**2. Briefly describe where the project would occur. Attach a map that shows the project area.**

The Sites Reservoir would be constructed in Antelope Valley, approximately 10 miles west of the town of Maxwell. Figure 2-1 in Sites\_A3 Project Description uploaded under the ELIGIBILITY AND GENERAL PROJECT INFORMATION TAB shows the Sites Reservoir footprint. Operation of the proposed reservoir would be in cooperation with the operations of the existing water management system in California, especially the existing Central Valley Project (CVP) and State Water Project (SWP) system facilities, to facilitate delivery and maximize the potential for a wide range of benefits. Water provided by the project would be used and managed within Sites Participant’s service areas. Figures A.6-1 through A.6-3 provided in Sites\_ A6C Groundwater Basins depict the general service areas for Sites Participants under the ELIGIBILITY AND GENERAL PROJECT INFORMATION TAB.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, map number, etc.).

Application Reference:  
See Figure 2-1 in Sites\_A3 Project Description uploaded as an attachment under the ELIGIBILITY AND GENERAL PROJECT INFORMATION TAB.  
  
See Figures 6-1A, 6-1B and 6-1C on pages 6-2 through 6-4 in Chapter 6, “Surface Water Resources” of the EIR/EIS located online here: [\[http://sitesproject.org/information/DraftEIR-EIS\]](http://sitesproject.org/information/DraftEIR-EIS)  
  
Figures A.6-1 through A.6-3 provided in Sites\_ A6C Groundwater Basins under the ELIGIBILITY AND GENERAL PROJECT INFORMATION TAB.

**3. Briefly describe the area that the project would improve. Attach a map that shows the improvement area.**

The improvement areas for the project vary depending on the type of water quality benefit provided. A description of the improvement area by the priorities the project would address is further discussed below:

- **Priority 1: Temperature.** With cooperative operations with Reclamation and DWR, the project would increase coldwater 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 areas of temperature improvement for these waterways are shown on Figures Water Quality P – 1a and P – 1b.
- **Priority 6: Groundwater.** The project would assist with improving chronic lowering of water levels and reduction of groundwater storage within the groundwater basins associated with Sites Participants. Incidental water quality and subsidence improvements may also result with increases in storage and water levels. Figure Water Quality P – 6a show areas that would receive surface water deliveries as a result of the project and the potential groundwater improvement area. Benefits could be identified in areas where surface water would be replacing, or substantially supplementing, groundwater as a source of water supply in areas with groundwater basins in overdraft. It is anticipated that the groundwater basins located within the Sacramento Valley Hydrologic Region would receive the greatest benefits from the project as a result of the volume of water that would be delivered as part of the project.
- **Priority 7: Delta Tributary Flows.** Loss of connection to floodplain habitat on the Sacramento River has affected the food web in the Delta. By making late summer releases to the toe drain for the Yolo Bypass, Sites Reservoir can support phytoplankton/zooplankton populations in the Lower Sacramento River. This would provide additional food for Delta smelt and other Delta species.

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- **Priority 9: Basic Human Needs.** The project would provide supplemental surface water supplies to Municipal and Industrial (M&I) water providers with disadvantaged communities located within their service areas. Incidental water quality and subsidence improvements may also result with increases in storage and water levels. Figure Water Quality P – 6a show the potential groundwater improvement area. It is anticipated that the groundwater basins located within the Sacramento Valley Hydrologic Region would receive the greatest benefits from the project.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, map number, etc.).

Application Reference:  
 Figures Water Quality P – 1a and P – 1b.  
 (Sites\_A2 WQ Maps)  
 Figure Water Quality P – 6a (Sites\_A2 WQ Maps)  
 Figures Water Quality P – 9a, through P– 9c,  
 (Sites\_A2 WQ Maps)

**4. Briefly describe the existing and potential beneficial uses for the waters affected by the project (cite the appropriate water quality control plan(s) adopted by the California State and Regional Water Boards, or other applicable and reliable sources).**

Water quality objectives for waters affected by the project are specified in the basin plans for the North Coast, Central Valley, Tulare Lake, and the San Francisco Bay regions. Water quality objectives for water temperature are also specified in the SWRCB Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California. SWRCB Water Rights Orders 90-05 and 91 and the 2009 NMFS biological opinion also include requirements related to storage and conveyance facility operations in order to achieve temperature compliance objectives. The water quality objectives and beneficial uses are further described in Table 7.1 on pages 7-1 to 7-3 in Chapter 7, “Surface Water Quality” of the EIR/EIS.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, etc.).

Application Reference:  
 Table 7.1 pages 7-1 to 7-3 in Chapter 7,  
 “Surface Water Quality” of the EIR/EIS located  
 online here:  
[\[http://sitesproject.org/information/DraftEIR-EIS\]](http://sitesproject.org/information/DraftEIR-EIS)

**5. Briefly describe any significant adverse water quality impacts and mitigation measures associated with the project.**

In general, the water quality impacts associated with the Sites Reservoir Project would be similar to those analyses for Alternative D in Chapter 7, “Surface Water Quality” of the EIR/EIS.

Sites Reservoir operations would involve the diversion of Sacramento River water only when flow monitoring indicates that excess bypass flows are present in the river due to storm event flows. Sites Reservoir Project operations would also be coordinated with SWP and CVP operations. Consequently, all water quality compliance obligations would be met as part of operations associated with the CVP and SWP facilities. In general, the Sites Reservoir operational strategy is to maximize the potential benefits of Sites Reservoir while not adversely affecting the CVP and SWP’s ability to meet existing system regulatory requirements including established water quality objectives, biological opinions, water right orders, and instream flow requirements. Several existing and additional proposed Sacramento River bypass flow criteria were assumed at specified locations. These flow criteria are designed to make certain only excess water would be diverted into Sites Reservoir to maintain and protect existing water quality compliance and downstream water uses.

As a mitigation measure to more fully avoid and minimize entrainment and impingement of juvenile salmonids and other poor-swimming aquatic species, Sacramento River diversions to Sites Reservoir would also be restricted to protect fish migration during naturally occurring, storm-induced, pulse flow events in the Sacramento River. The proposed pulse protection period would extend from October through May to address outmigration of juvenile winter-, spring-, fall- and late-fall-run Chinook salmon, as well as steelhead. Pulse flows during this period would provide flow continuity between the upper and lower Sacramento River to support fish migration. It is recognized that research regarding the benefits of pulse flows is ongoing, and further research and adaptive management will be required to develop and refine a pulse flow protection strategy for fish migration. No other significant adverse water quality impacts were identified associated with Sites Reservoir operations.

Under the proposed WSIP application operations plan, enhanced flows to Yolo Bypass would be released through the Colusa Basin Drain and Knights Landing Ridge Cut during summer and fall months to help increase productivity in the Yolo Bypass in the lower Cache Slough and Sacramento River. Adaptive management and monitoring strategies to minimize adversely affect water quality impacts associated with enhanced flows within the Yolo Bypass and its receiving waters in the Sacramento-San Joaquin Delta would also be implemented.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, etc.).

Application Reference:  
 Chapter 7, “Surface Water Quality” of the  
 EIR/EIS.  
[\[http://sitesproject.org/information/DraftEIR-EIS\]](http://sitesproject.org/information/DraftEIR-EIS)

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**6. Identify any impediments or circumstances that may reduce the project’s claimed improvements. Include a description of how those impediments or circumstances may reduce the improvement as evaluated by the applicable REV’s. Impediments may include: waste or wastewater discharges, water rights/overdiversion, or other potential factors.**

Initial water quality improvements are expected in year 2028 and full benefits are expected by 2030 depending on hydrologic condition. Achieving full benefits would require water supplies from one or more of the following:

- State of California Water Rights for “Sites Reservoir”
- Riparian Water Rights in the Inundation Area

Further coordination between the Authority, the State Water Resources Control Board and other cooperating agencies will be required to determine the applicability and feasibility of using any of these water rights approaches. Water rights issues could potentially delay the immediacy of the realization of full benefits (REV 7) of the project by 2030.

Projected groundwater basin benefits are currently an approximation based on interested JPA investors (also referred to as Sites Participants). The actual distribution of water supplies would vary based on the final investors for the project. In addition, each investor may manage supplemental water supplies differently, which may result in greater than expected magnitude and spatial scale of benefits (REV 2 and REV 3, respectively) in one region over another region.

Projected benefits provided by Sites Reservoir are largely dependent on the capability to divert excess Sacramento River water into the reservoir, which is influenced by changing climate conditions. The operational flexibility of Sites Reservoir allows for the delivery of water for public benefits where and when it is needed most, dependent on changing climate conditions and adaptation to future conditions to provide sustained public benefits. For further information refer to the Sites\_A12 Uncertainty under the BENEFIT CALCULATION, MONETIZATION, AND RESILIENCY TAB.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, etc.).

Application Reference:  
Chapter 6 of the Federal Feasibility Report [<https://www.sitesproject.org/information/FeasibilityReport>]  
  
Sites\_A1 Feasibility under the FEASIBILITY AND IMPLEMENTATION RISK TAB  
  
Sites\_A12 Uncertainty under the BENEFIT CALCULATION, MONETIZATION, AND RESILIENCY TAB

**7. Does the project improve conditions in a groundwater basin where undesirable results (as defined in Water Code 10721(x)(1-6)) caused by extraction have occurred? If yes, describe in applicable priority tables.**

The project would improve groundwater levels and storage in adjudicated basins as well as designated medium and high priority basins under SGMA, including those in critical overdraft. Supplemental water supplies delivered during certain times of the year could result in reduction in decreased use of groundwater through conjunctive use operations by its participants. These operations would increase surface water deliveries and change the timing of available surface and groundwater supplies by providing Sites participants with surface water for storage, use or replenishment (typically in above normal and wet year conditions) and then recovering a portion of the water during periods of water supply shortages (in dry and critical year conditions). These improvements are further discussed under Sites\_A1 WQ Priority 6 under the PHYSICAL PUBLIC BENEFITS TAB.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, etc.).

Application Reference:

**8a. Is there an adaptive management and monitoring plan for the project?  None  Draft  Final**

**8b. Briefly describe the adaptive management and monitoring program framework for the project.**

The Adaptive Management and Monitoring Framework for the project has been developed to identify measurable objectives, performance measures, thresholds, and triggers to meet operational objectives and desired ecosystem benefits. Because uncertainties remain about natural hydrologic variations, project operations, and ecological responses, the Sites Project is being designed with a range of operational scenarios to evaluate the effectiveness of different management actions and evaluate strategies for resilience to climate change. These are further described in the Operations Plan. A monitoring program would also be implemented to collect data necessary to operate and evaluate the Project’s success. Key data monitoring elements would include the following:

- Physical Habitat – diversion (inflow) and release flow rates, reservoir depth, snags, submerged vegetation, and other habitat elements;
- Water Quality – salinity, temperature, dissolved oxygen, nutrients;
- Aquatic Biota – algae, plankton, invertebrates, fish community (species, distribution, abundance);

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- Birds – species, abundance and distribution, use of habitat features, breeding and nesting, sick or dead birds; and
- Contaminants – contaminants of concern concentrations in water, sediment, terrestrial or avian biota.

Monitoring efforts would be guided by the specific Sites Project objectives and desired outcomes and would focus on the most informative, efficient, and cost-effective indicators and methods.

Types of potential indicators include:

- Triggers for real-time diversion and release operations – flow rates, anticipated water year type, storage in Sites and other reservoirs, storm events, fish migration data.
- Performance measures – attributes of target species and their habitat, such as physical habitat conditions, water quality in Sites and elsewhere in the Sacramento River/Delta system, and distribution, abundance and composition of aquatic invertebrates, fish and birds; and
- Threat indicators – potential for floods or droughts, contaminants of concern, mosquitoes and other vectors, disease outbreaks on Sites Reservoir or elsewhere.

A preliminary Adaptive Management Framework is included as part of Sites\_A2 Operations under the BENEFIT CALCULATION, MONETIZATION, AND RESILIENCY TAB. A more detailed plan and decision-making process will be developed in future phases of the Sites Project.

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, etc.).	Application Reference: Sites_A2 Operations under the BENEFIT CALCULATION, MONETIZATION, AND RESILIENCY TAB  Sites_A2 Operations under the BENEFIT CALCULATION, MONETIZATION, AND RESILIENCY TAB. Emphasis on the Adaptive Management Framework section.
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**9. Check (x) the climate change risk factor(s) below that were considered in the project siting and design, and identify any that are not applicable (N/A).**

Sea level rise and storm surge	Temperature changes	Changing precipitation and runoff	Ocean acidification	Low oxygen waters	Wildfires	Hydrologic variability and extreme events	
						Drought	Flooding
N/A	X	X	N/A	N/A	N/A	X	X

Additional locations in the application where data and relevant supporting information, including attachments, are documented (document name, page number, table number, etc.).	Application Reference: Sites_A12 Uncertainty under the BENEFIT CALCULATION, MONETIZATION, AND RESILIENCY TAB.
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