UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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JAN 12 2018

David G. Murillo
Regional Director
U.S. Bureau of Reclamation
Mid-Pacific Regional Office
12800 Cottage Way
Sacramento, CA 95825

Subject: Draft Environmental Impact Statement/Report for the Sites Reservoir Project, Glenn and Colusa Counties, CA (EIS No. 20170160)

Dear Mr. Murillo:

The U.S. Environmental Protection Agency has reviewed the Sites Reservoir Project Draft Environmental Impact Statement (DEIS) pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. EPA is a cooperating agency for this DEIS and provided comments on the Administrative DEIS on May 30, 2017.

According to the DEIS, the Sites Project Authority proposes to construct and operate a new off-stream surface storage reservoir ten miles west of Maxwell, California, and the Bureau of Reclamation is participating in the development of the project to consider the environmental impacts of coordinating the use of federal facilities that would be used to supply water to the reservoir. Reclamation is also examining the possibility of federally funding certain aspects of the project, such as hydropower, and utilizing Sites reservoir storage for federal conservation activities. EPA recognizes the need for additional water storage in California, and welcomes the opportunity to assist Reclamation in ensuring that federal decision making regarding new water storage facilities appropriately considers the environmental impacts associated with siting, design, construction and operation of such facilities.

The DEIS does not identify Reclamation's Preferred Alternative. It is EPA's policy to rate each alternative when a preferred alternative is not identified. Based on our review, we are rating all the alternatives evaluated in the DEIS as *Environmental Concerns- Insufficient Information* (EC-2) (see enclosed "Summary of EPA Rating Definitions"). EPA is concerned about the lack of information regarding impacts to wetlands and other waters, and about water quality impacts; particularly, potential temperature impacts to beneficial uses and fishery resources in the Sacramento river. Our concerns and recommendations are discussed further in the enclosed detailed comments.

EPA appreciates the opportunity to review this DEIS. When the Final EIS is released for public review, please send one copy to the address above (mail code: ENF-4-2). If you have any questions, please

contact me at (415) 972-3521, or contact Stephanie Gordon, the lead reviewer for this project, at 415-972-3098 or gordon.stephanies@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosure: Summary of EPA Rating Definitions

cc: Mike Dietl, U.S. Bureau of Reclamation
Brian Hughes, U.S. Bureau of Reclamation
Matt Kelly, U.S. Army Corps of Engineers
A. Leigh Bartoo, U.S. Fish and Wildlife Service
Lori Rinek, U.S. Fish and Wildlife Service
Evan Sawyer, NOAA Fisheries
Rob Thomson, Sites Reservoir Authority

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment

Wetlands and Other Waters

The proposed project would require a permit, under section 404 of the Clean Water Act (CWA), from the U.S. Army Corps of Engineers (Corps). A section 404 permit can only be issued for the Least Environmentally Damaging Practicable Alternative (LEDPA). The information provided in the DEIS provides an insufficient basis upon which to determine whether the project, as proposed, would satisfy the requirements for such a permit or to identify appropriate measures to mitigate the project's impacts to waters if the proposed reservoir is determined to be the LEDPA. The DEIS indicates that the wetlands and other waters in the project footprint have not been evaluated in nearly 20 years (p. 15-5). Section 15.2 of the DEIS provides qualitative assessments of wetland condition (e.g., "heavily degraded," p. 15-9, "disturbed alkaline wetlands," p. 15-10, etc.), but does not support these assessments with empirical evidence. A verified delineation and jurisdictional determination will be needed before the CWA section 404 permitting process can proceed, and a scientifically defensible assessment of wetland conditions is needed to fully evaluate the potential impacts of the project, as well as to identify potential opportunities to mitigate such impacts.

Recommendations:

- In the FEIS, disclose steps taken to achieve compliance with the CWA Section 404(b)(1) Guidelines.
- Work with the Corps to obtain a formal jurisdictional delineation of waters of the U.S. in the project area and include, in the FEIS, a map of the delineated waters and the anticipated impacts to those waters, to streamline future Section 404 compliance efforts.
- Conduct a formal and reproducible assessment of the aquatic resources in the project footprint, using a scientifically defensible method, such as the California Rapid Assessment Method (CRAM), and include the results in the FEIS.
- In the FEIS, disclose the ecosystem functions provided by the specific wetland and other waters areas that could be impacted by the reservoir and ancillary project facilities.

A CWA section 404 permit requires compensatory mitigation for unavoidable impacts to aquatic resource functions. The 2008 Mitigation Rule, issued jointly by the Corps and EPA (40 CFR 230.91-98), establishes a preference for compensatory mitigation based on a watershed approach, and EPA recommends that compensatory mitigation be sited appropriately to ensure that potential direct and indirect impacts of the proposed project are offset. Third-party forms of mitigation, such as mitigation bank credits and in-lieu fees, are preferred over permittee-responsible mitigation. The extent and character of the likely impacts of the proposed reservoir are such that it could be difficult to find in-kind compensatory mitigation in the Stone Corral and Funks Creek watersheds, which would be almost completely inundated, or even in the greater Sacramento River watershed. In particular, it could prove difficult to compensate for the extensive impacts to streams (148 miles in the reservoir inundation area), alkaline wetlands (19 acres) and seasonal wetlands (153 acres).

Recommendations:

- In the FEIS, evaluate the feasibility of providing adequate compensation for the considerable impacts to aquatic resource functions that the proposed reservoir represents, and identify specific compensatory mitigation opportunities.
- Include in the FEIS and Record of Decision a commitment to implement mitigation in advance of, or concurrently with, project impacts. Clearly state that compensatory mitigation will be provided for temporary impacts lasting longer than one year.

Water Quality

Temperature

The DEIS states that the temperature in the Sacramento River downstream of Keswick and the Glenn Colusa Irrigation District (GCID) intakes, as well as downstream of the Delevan pipeline, would be between 0.6-0.9 degrees greater than current conditions under all the action Alternatives, and that this would not be a significant impact to the species described in the Aquatic Resources chapter (p. 7-41; p. 12-75). EPA is concerned that the available water volume and cold water pool may have been overestimated, which could have implications regarding whether upstream temperature targets to protect Sacramento River fish species can be met. The DEIS modeling assumes that Sites Reservoir inflow temperatures from the GCID, Tehama Colusa (TC), and Delevan canals are equivalent to Sacramento River diversion temperatures as estimated by the Upper Sacramento River Water Quality Model (Appendix 7E, 7F); however, for the GCID and TC canals, substantial warming would be expected to occur during water conveyance to the Sites Reservoir, due to the long, shallow, exposed canals and holding periods in regulating reservoirs. Thus, water delivered to Sites Reservoir could be significantly warmer than is predicted in the DEIS. In addition, the document states that Sites Reservoir, as proposed, would be considered a less-than-deep reservoir (p. 17-30), with an average carryover storage of 1275 thousand-acre-feet and average monthly storage as low as 348 TAF in some dry years (Table 6-7; p. 6-52). It is unclear whether these numbers were incorporated into the modeling for calculating temperature of releases through the Delevan pipeline into the Sacramento River.

Recommendations:

- Analyze how water temperature may change from the points of diversion until it is pumped into the Sites Reservoir and use these results to more accurately model the cold water pool capacity and yearly conditions in Sites Reservoir, including in drought years.
- Clarify whether or not the average storage volumes presented in Table 6-7 were incorporated into the modeling for temperature of releases through the Delevan pipeline into the Sacramento River.
- Update the discussion of impacts to water supply and affected Sacramento River species, as needed, to reflect the updated modeling results, and update operational scenarios accordingly to reflect any limitations that warmer water releases would necessitate.

Salinity

The Bay Delta estuary is highly impacted by multiple stressors that present challenges for federal and state water managers. The DEIS explains that Delta salinity at Rock Slough, Old River, Clifton Court Forebay, and the X2 location would be impacted by the operation of Sites Reservoir (p. 7-62) under all Alternatives, but would be consistent with the water quality standards set in the State Water Board's Water Right Decision 1641. The document notes that the increased Delta outflow in the fall that would result from the proposed operation of Sites Reservoir could lead to more suitable rearing conditions for delta smelt. While EPA acknowledges this potential benefit, we are concerned about the adverse impacts of the increased salinity that would result from reduced flows in winter months.

Recommendations:

- Analyze quantitative data from the models described on page 12-64, and support the finding that the benefits from Sites Reservoir could offset the impacts associated with the expected decrease in winter freshwater flows through the estuary.
- In the FEIS, describe the measures that would be employed to ensure that the water quality standards would always be met; for example, temporal or volumetric limitations on diversion

of flows. Explain whether the Coordinated Operations Agreement between the state and federal distribution systems would need to be amended and the process for doing so.

Nutrients

Cyanobacteria blooms are an emerging issue in California and can be caused by numerous factors, including nutrient concentrations in reservoir source waters. Shallow reservoirs and those with fluctuating water volumes may be particularly vulnerable.

Recommendation:

Discuss how nutrient concentrations of the Sites Reservoir source waters may affect the potential for hazardous algae blooms in Sites Reservoir, particularly during low water conditions, and identify any design or operational measures that could minimize this potential.

Sacramento River Sediment

Using sediment rating curves developed from U.S. Geologic Survey gaging data, the DEIS estimates that construction of the project would result in the additional annual diversion of 80,000-112,000 tons of sediment from the Sacramento River (p. 8-20, Appendix 8A). While this is estimated to represent only a 2-5% decrease in Sacramento River suspended sediment load, it could contribute to degradation of the Bay Delta, which is already experiencing a sediment deficit attributed to sediment trapping within reservoirs and deposition in flood bypasses, the impacts of which will be exacerbated by sea level rise.

EPA is concerned about the ultimate destination of diverted sediment. It remains unclear whether this large volume of sediment would remain suspended as water travels from the intakes along the Sacramento River to be stored at the Sites reservoir. The TC canal has experienced localized siltation problems at check-dams and low-gradient areas, which would likely be exacerbated by the 11- to 14-fold increase in diverted sediment. All water diverted to the proposed reservoir must pass through the proposed Holthouse forebay/afterbay, an area that already requires periodically maintenance dredging; the rate of deposition, although not analyzed in the DEIS, is likely to accelerate with increased inflows. Additionally, the fluvial geomorphology of the Colusa Basin Drain has been modified extensively and may be impacted by the increase in diverted sediment. The DEIS calculates that additional truck trips may be needed for dredging activities, but provides limited detail as to when and how many would be needed and why.

Recommendations:

In the FEIS:

- Discuss the effects of diverting sediments from the Sacramento River, as well as the fate of these sediments and how they could affect local and regional hydrology, including how the diverted sediments may affect the transport of water, sediments, and contaminants in the already impaired Colusa Basin Drain.
- Examine the expected maintenance types and cost of sediment management in project facilities that would receive sediment, particularly within the context of developing power generation and calculation of air emissions from dredging equipment.

Impacts to Biological Resources

The DEIS indicates that a reduction in the magnitude, duration, or frequency of intermediate to large flows in the Yolo Bypass would occur as a result of supplying Sites Reservoir, and concludes that this is less than significant (p. 7-71). The basis for this conclusion is unclear. Capturing more water in wet years would

reduce peak flows, which are known to be highly beneficial to fish, as such flows activate floodplains and generally yield good recruitment years for anadromous fish. The reduction in flows in these years and the exposure of fish to additional low water years (as some of the water is diverted into Sites Reservoir) would likely have an adverse effect on juvenile salmonids and other species that rely on floodplain and bypass inundation for foraging.

The DEIS assumes that state-of-the art fish screens would function in a way that results in minimal to zero entrainment, but provides no evidence that these screens would completely or almost completely prevent entrainment of larval, juvenile, or adult fishes. Limited details are provided regarding the design or operation of the proposed fish screens at the Delevan Pipeline (p. 3-107; p. 12-71).

Several threatened or endangered species occur in the study area. EPA understands that Reclamation intends to initiate consultation under the Endangered Species Act.

Recommendations:

In the FEIS:

- Identify appropriate mitigation measures that would protect biological resources, including salmon, and describe any monitoring needed to implement such measures.
- Describe flow regimes that would promote natural geomorphic processes necessary to restore riparian and floodplain habitat with the least negative effects.
- Disclose and weigh the negative impacts of modifying the hydrology such that there are fewer high flow events against the benefits of increasing cold water pool for anadromous fish and flows for Delta smelt.
- Evaluate the potential benefits of the off-stream reservoir to supply excess cold water in the context of all Reasonable and Prudent Measures, Salmon Recovery Program and the Salmon Doubling Goal.
- Explain how the proposed fish screens would prevent entrainment of all life stages of fishes. Disclose the entrainment thresholds that would trigger reduced pumping at the Delevan intakes, and mitigation strategies for minimizing entrainment if the fish screens do not function as anticipated. Discuss the similarities and/or differences of the design criteria at the other Sacramento River intakes.
- Provide an update on the Endangered Species Act section 7 consultation process. Summarize and append any relevant documents, including the Biological Assessment and Biological Opinion. Include any additional mitigation and monitoring measures that result from the consultation. Clarify whether suitable lands are available or a previous management and conservation plan may be utilized that would provide sufficient compensatory lands for impacts to species in the project area.

Project Components Still Undefined

The DEIS acknowledges that much of the project remains in development and largely undefined, pending outcomes of state funding processes and other factors. For example:

- "A final operations plan will be refined based on the findings of the California Water Commission regarding the Sites Project WSIP applications, and the defined related benefits and obligations" (p. 3-102).
- "The operation of Sites Reservoir to provide a variety of ecosystem benefits would allow for the potential development and administration of an ecosystem enhancement storage account, which

could be managed by either the Authority or the State to provide water for ecosystem and water quality purposes" (p. 3-108).

- "If the Project chooses to pursue hydropower generation… it would pursue the approval process required for hydropower generation" (p. 1-5)
- "The ability to release water directly to the Sacramento river would allow Sites Reservoir to respond to Delta conditions, including releasing flows to repel saltwater intrusion following a Delta levee failure. This factor became one of the most important criteria in evaluating conveyance concepts" (p. 2-16). This opportunity is discussed nowhere else in the document and absent from the operations criteria.

Because even minor changes in proposed project design or operation could make a significant difference in the potential environmental impacts, it is important that the environmental impact implications of such changes be anticipated, to the extent possible, and disclosed during the NEPA process.

Recommendations:

- In the FEIS, fully describe the finalized operations of the proposed project and ensure that any changes from the DEIS's operations plan are reflected in the water supply, water quality, and aquatic resource environmental impact chapters.
- Discuss the historical frequency of high-flow and low-flow events in northern Sacramento Valley, as well as anticipated future trends in flows, given climatic changes and any foreseeable changes in State Water Project and Central Valley Water Project operations; discuss how periods of drought may impact the proposed Project.
- Discuss the possibility that excess water may not be available to divert to Sites Reservoir each year and how the reservoir water would be used in low-precipitation years, particularly if there are limited opportunities to refill the reservoir. Describe the benefits associated with the proposed Project under extreme drought conditions.
- Describe the process necessary to obtain approval for hydropower generation in California and clarify whether this process would happen in conjunction with, or independently of, the NEPA/CEQA review for the Sites Reservoir.

Cultural Resources and Tribal Consultation

The DEIS describes the ongoing communications with Native American tribes in the project area (p. 18-24), but later concludes that ethnographic studies and tribal consultations have not been undertaken and have potential to identify traditional cultural properties/tribal cultural resources (p. 18-43).

Recommendations:

In the FEIS:

- Provide an update on consultation between Reclamation and tribal governments. Discuss issues that were raised, how those issues were addressed in relation to the proposed project, and how impacts to tribal or cultural resources would be avoided or mitigated, consistent with Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments,* Section 106 of the National Historic Preservation Act, and Executive Order 13007, *Indian Sacred Sites.*
- Include a draft of the Programmatic Agreement (PA) between the Native American Tribes, Reclamation, the Sites Power Authority, and the State Historic Preservation Officer that would be required to define the steps to be taken to lessen, resolve, and/or mitigate the effects on any historic or tribal properties identified as being adversely affected by the proposed project.