Topic: **Joint Authority Board and Reservoir Committee Meeting Agenda Item 2.3** **2020 September 17**

Subject: **Preferred Project for the Purposes of the CEQA Analysis and Federal/State ESA Analysis**

Requested Action:

Designate Alternative 1, based on VP-7 of the Sites Project Value Planning Alternatives Appraisal Report (Value Planning Report), as the Authority's preferred project for the purposes of the Revised Draft Environmental Impact Report (EIR) analysis and for the purposes of the Biological Assessment and State Incidental Take Permit applications.

Detailed Description/Background:

In April 2020, the Authority accepted the Value Planning Report and its findings and directed staff to analyze the environmental effects of the new alternatives in the Value Planning Report, including VP7. The Authority also directed that a revised and recirculated Draft EIR be prepared for public review[1]. Staff began development of the revised Draft EIR and is at the point where the Board needs to identify a preferred alternative based on a more complete project description (see attachment A).

During the Reservoir Committee and Board meetings in June, staff provided an overview of the alternatives under consideration as well as revised draft objectives for the project, requesting review and input in order to focus efforts in developing a more complete project description. At that time, staff presented Alternatives 1 and 2 which combined components of VP5, VP6, and VP7 from the Value Planning Report. Staff recommended these two alternatives as they define the reasonable range of alternatives given the previous analyses of the project and potential alternatives.

Staff is returning to the Reservoir Committee and Authority Board with a Preliminary Project Description (Attachment A), and revised objectives (Attachment B). Changes have been made to both the alternatives and objectives in response to Reservoir Committee and Authority Board input and in further development of project details and information by the project team. The key changes to the alternatives are as follows:

- Transportation/circulation components have been clarified. Both alternatives provide access to residents at the south end of the reservoir via a realigned Huffmaster Road. To provide access to the west side of the reservoir, Alternative 1 crosses the reservoir with a bridge on Sites Lodoga

[1] Staff has worked cooperatively with the Bureau of Reclamation to identify the appropriate approach to proceed with the Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act, and a Supplemental EIS will be prepared as part of the joint California Environmental Quality Act/National Environmental Policy Act documentation.

Road. Alternative 2 includes a south road continuing from Huffmaster Road around the west side of the reservoir to Ladoga, with no bridge.

- The Dunnigan pipeline alignment and proposal to release into the Colusa Basin Drain has been further assessed and confirmed as the proposed component for conveyance release under Alternative 1.

Key changes to the objectives are as follows:

- All objectives have been revised to focus on the statewide benefits of the Project and the needs of all Participants.

- Objective 1 addresses the amount of water supply required to meet participants' water demands and the need for an affordable, cost-effective Project.

- Objective 2 addresses the Water Storage and Investment Program public benefits.

- Objective 3 addresses federal participation and clarifies the intent of the Project to provide operational flexibility to the Central Valley Project.

- Objective 4 addresses intended benefits to the Delta ecosystem beyond the requirements of the Water Storage and Investment Program public benefits.

- Minor changes have also been made to Objective 5 regarding roadway connectivity.

Due to the project schedule, staff is preparing the Revised EIR at the same time as the engineering team is conducting preliminary design activities. The following assumptions represent the variations being taken from the project described in VP7 of the Value Planning Report and have been incorporated in the development of Alternative 1 to allow the EIR/EIS and engineering activities to move forward simultaneously and achieve the project schedule:

- Bridge – The EIR/EIS will move forward with Bridge Option 1B, Shorter Bridge with Fill Prisms, including the Cast-in-Place Prestressed Concrete Box Girder bridge type. This option was identified as a lowest cost bridge alternative in the Value Planning Report while meeting the functional requirements for efficient traffic flow.

- Dam Fill materials – The EIR/EIS will move forward with Dam Fill Option 1A, Earth and Rockfill, which is anticipated to be preferred by California Division of Safety of Dams and will assist in meeting the schedule and affordability goals; it also provides maximum coverage for potential environmental effects as the rockfill involves blasting associated with rock quarrying.

- Terminal Regulating Reservoir – The EIR/EIS will continue to analyze the original proposed location for this reservoir and carries forward additional potential locations as more is learned in the coming months regarding soils conditions.

- Glenn-Colusa Irrigation District and Colusa Basin Drain Facility Improvements – The EIR/EIS will address the type and magnitude of improvements needed to convey Sites water through existing facilities, pending future agreements on any specific improvements that may be warranted by the Project.

- Emergency Releases – In the rare and unanticipated condition that the Sites Reservoir has to conduct emergency releases, these releases are currently planned to be made into Funks Creek, Stone Corral Creek, and into the Hunters Creek watershed via Saddle Dam 3, 5, and 8b. Emergency release locations and the extent of potential impacts will be evaluated in further detail as part of the on-going feasibility study.

- Dunnigan Release – Based on preliminary hydraulic study, the EIR/EIS will assume release to the Colusa Basin Drain under Alternative 1 and will carry forward an extension to the Sacramento River under Alternative 2.

- Hydropower Generation – Based on the current Project information, the EIR/EIS will address incidental in-line conduit hydropower generation at a level that is below the threshold for Federal Energy Regulatory Commission license.

- Temporary Water Supply for Construction – Based on the current Project information, the EIR/EIS will evaluate obtaining water temporarily for construction supply on site via existing groundwater or surface water facilities or existing or new groundwater wells, including any onsite treatment that may be warranted depending on water quality.

It is important to note that the engineering team will continue to consider and analyze options for various facility components in order to optimize design and reduce costs, including potentially considering alternatives to account for reduced participation levels to maintain affordability. In the event that the final project facilities are different than the assumptions above, staff will consider appropriate modifications to the process and documents consistent with the California Environmental Quality Act, National Environmental Policy Act, and the Federal and State Endangered Species Acts. The goal is to make any modifications on a timeline that does not impact the ability to deliver the EIR/EIS documents for public review any later than July 2021.

The California Environmental Quality Act Guidelines require that an EIR analyze a reasonable range of alternatives to the project which would feasibly attain most of the basic objectives of the project while avoiding or substantially lessening significant effects of the project. While an EIR must analyze reasonable alternatives, it also needs to identify a proposed project, which is also referred to as the preferred alternative. At this time, staff is recommending the designation of Alternative 1 as the Authority's proposed project based on its meeting the intent and the goals of the Value Planning effort, its close alignment with VP-7, and its ability to meet the project objectives. The EIR/EIS will also analyze Alternative 2 and the No Project/No Action Alternative.

If designated by the Reservoir Committee and Authority Board, Alternative 1 would also be used as the proposed project for the purposes of the Biological Assessment under the Federal Endangered Species Act and State Incidental Take Permit applications under the California Endangered Species Act.

Prior Action:

April 22, 2020: The Authority directed staff to revise and recirculate a Draft Environmental Impact Report (EIR) to analyze the environmental effects of the options identified in the Final Sites Project Value Planning Alternatives Appraisal Report dated April 2020, including VP7.

April 22, 2020: The Authority accepted: the final report titled "Sites Project Value Planning Alternatives Appraisal Report, dated April 13, 2020" and the recommendations presented within, and; a recommendation to the Sites Project Authority to approve the final report titled "Sites Project Value Planning Alternatives Appraisal Report, April 13, 2020" and the recommendations presented within.

February 26, 2020: The Authority approved a recommendation to re-start efforts on the EIR for the Sites Reservoir Project and assess the most appropriate approach for completing the EIR pursuant to the California Environmental Quality Act.

July 20, 2017: The Reservoir Committee approved a recommendation to forward the Draft EIR/EIS to the Authority Board for its consideration to formally receive and adopt the document for inclusion in the Authority's Water Storage Investment Project application.

July 31, 2017: The Authority approved the release of the Draft EIR for public and agency review, in connection with the Authority's application to the California Water Commission by August 14, 2017. The document was published as joint Draft EIR/EIS by the Authority under the California Environmental Quality Act and Reclamation under the National Environmental Policy Act.

December 19, 2016: The Authority approved release of a Supplemental Notice of Preparation (released February 2, 2017) to transfer the California Environmental Quality Act lead agency status from the Department of Water Resources to the Sites Project Authority. Public scoping meetings were conducted on February 14 and 15, 2017.

Fiscal Impact/Funding Source:

Actual costs to prepare the project description and the supporting evaluations were within the amounts budgeted in the Phase 1B Work Plan which was approved by the Sites Project Authority at its January 22, 2020 Board meeting.

Sufficient funds to complete the recirculated Draft EIR/EIS and begin preparation of the Final EIR/EIS are included in the Amendment 2 Work Plan (Budget), which was approved by the Authority at its August 26, 2020 Board meeting.

Costs to complete and circulate the Final EIR/EIS will be considered in a future Work Plan.

Staff Contact:

Ali Forsythe

Attachments:

Attachment A – Sites Reservoir Project, Preliminary Project Description – September 8, 2020.

Attachment B – Revised Recommended EIR Objectives.

Sites Reservoir Project
Preliminary Project Description
September 2020

On April 22, 2020, the Sites Project Authority (Authority) directed staff to revise and recirculate a Draft Environmental Impact Report (EIR) consistent with the California Environmental Quality Act (CEQA) to analyze the environmental effects of the facility options identified in the Sites Project Value Planning Report (Value Planning Report), dated April 2020. Since that time, Authority staff and environmental, engineering and modeling consultants have been developing and refining alternatives. In June, staff recommended that the Draft Revised EIR[1]/Supplemental Environmental Impact Statement (EIS)[2] (Revised EIR/Supplemental EIS) evaluate two action alternatives, Alternative 1 and Alternative 2, and provided an initial overview of the two alternatives.

This preliminary project description summarizes the alternatives presented in the preliminary Revised EIR/Supplemental EIS Chapter 2, Alternatives Description, which was completed on August 31, 2020. That preliminary draft Chapter 2 reflects preliminary design efforts, including the preparation of technical memos and preliminary drawings, and coordination between the service providers and staff. Modeling and engineering efforts are ongoing, and additional information related to operations and construction means and methods will likely supplement the preliminary Draft Chapter 2 in the coming weeks.

1.0 Overview of Alternatives

The following table compares facilities and operational considerations under Alternatives 1 and 2. This table is an updated version of a table provided at the June 24 Authority Board meeting (Agenda Item 3.3 Attachment B) and identifies existing as well as new facilities that will be constructed to implement each alternative.

Table 1. Revised Alternatives Summary Table

Facilities/Operations	Alternative 1	Alternative 2
Diversion/Reservoir Infrastructure Details		
Reservoir Size	1.5 million acre feet (MAF)	1.3 MAF
Dams [Scaled to the size of the reservoir]	2 main dams, Golden Gate Dam and Sites Dam 7 saddle dams 2 saddle dikes	2 main dams, Golden Gate and and Sites Dam 6 saddle dams 2 saddle dikes
Spillway	One spillway on Saddle Dam 8b	Similar to Alternative 1
Funks Reservoir and Funks Pumping Generating Plant	Funks Reservoir excavated to original capacity; same footprint as existing Funks Reservoir. New Funks Pump Generating Plant (PGP). New Funks pipeline alignment with 2 pipelines.	Similar to Alternative 1

[1] The Revised EIR/Supplemental EIS will also address the No Project/No Action Alternative.
[2] A Supplemental EIS will be prepared to comply with the National Environmental Policy Act (NEPA).

Table 1. Revised Alternatives Summary Table

Facilities/Operations	Alternative 1	Alternative 2
Terminal Regulating Reservoir (TRR); TRR Pumping Generating Plant; TRR Pipeline	New TRR facilities (TRR and TRR PGP) adjacent to the Glenn Colusa Irrigation District (GCID) Main Canal. New TRR pipeline alignment with 2 pipelines.	Same as Alternative 1
Hydropower	Power generation incidental upon release.	Same as Alternative 1
Diversion(s)	Diversion from Sacramento River into existing Tehama-Colusa Canal at Red Bluff and the existing GCID Main Canal at Hamilton City. Adding 2 pumps in existing bays at the plant at the Red Bluff Pumping Plant.	Same as Alternative 1
Emergency Release Flow	Releases into Funks Creek via Inlet/Outlet Works. Releases into Stone Corral Creek via Site Dam permanent discharge outlet. Emergency outflow pipeline and structures in Saddle Dam 3 and 5 to release north to Hunters Creek Watershed. Release from spillway on Saddle Dam 8b.	Similar to Alternative 1
Flood Control	Flood damage reduction benefit for local watersheds from reservoir storage.	Same as Alternative 1
Reservoir Management	Reservoir Management Plan and Reservoir Operations Plan.	Same as Alternative 1
Electrical Facilities	Transmission Lines, substations, switchyards; interconnection with Western Area Power Administration or Pacific Gas and Electric.	Same as Alternative 1
Recreation		
Multiple Facilities Consistent with WSIP Application	Two primary areas with infrastructure (with phased construction): 1. Peninsula Hills Area 2. Stone Corral Creek One day-use boat ramp w/parking located on the west side of the reservoir and south of the bridge.	Same as Alternative 1
Transportation/Circulation		
Provide Route to West Side of Reservoir	Bridge crossing the reservoir as a result of the relocation of existing Sites Lodoga Road. Relocation of Huffmaster Road with gravel road to residents at the south end of the reservoir terminating at the south end of the reservoir.	No bridge. Relocation of Sites Lodoga Road to residents at south end of the reservoir continues to Lodoga. Huffmaster Road is integrated into Sites Lodoga Road and is paved the entire way.
Mulitple Maintenance and Local Access Roads	Approximately 46 miles of new paved and unpaved roads would provide construction and maintenance access to the proposed facilities, as well as provide public access to the proposed recreation areas.	Similar to Alternative 1

Table 1. Revised Alternatives Summary Table

Facilities/Operations	Alternative 1	Alternative 2
	Approximate number of roads related to the reservoir: 5 local/construction roads 2 construction/maintenance roads 7 local roads 4 maintenance roads Approximate number of access roads related to conveyance facilities: 1 to the TRR 1 to Funks complex Multiple within pipeline easements	
Operations		
Operational Criteria	Option based on Value Planning Report, Table 3.1 Scenario B, anticipated to be modified by future modeling efforts.	Same as Alternative 1
Reclamation Involvement	Two Options: 1. Funding Partner 2. Operational Exchanges a. Within Year Exchanges b. Real-time Exchanges	Same as Alternative 1
State Water Project (SWP) Involvement	Operational Exchanges with Oroville and storage in SWP facilities South-of-Delta.	Same as Alternative 1
Bypass Releases into Funks Creek and Stone Corral Creek	Develop specific bypass criteria to protect downstream water right holders and ecological function.	Same as Alternative 1
Conveyance Dunnigan Release	Release 1,000 cubic feet per second (cfs) into new pipeline to Colusa Basin Drain to meet member participant demands and Proposition 1 needs.	Release into new pipeline to Sacramento River to meet member participant demands. Partial release into the Colusa Basin Drain to fulfill the Proposition 1 needs.

2.0 Facilities

The project will utilize both existing and proposed new facilities, all of which will be located within northern California in Glenn, Colusa, Tehama and Yolo Counties (see Figures 1 and 2 at the end of this document). As summarized in the Table 1 above, most facilities are the same or similar under Alternatives 1 and 2 although features may differ in scale or location due to the size of the reservoir. Facilities that have substantial differences between alternatives, such as the proposed dams, Dunnigan Pipeline and the Sites Lodoga Road realignment/relocation, are described in more detail below.

2.1 Existing Facilities

The project will utilize certain existing water supply infrastructure, including:

- Existing Bureau of Reclamation infrastructure operated by the Tehama-Colusa Canal Authority (TCCA):
  - Red Bluff Pumping Plant
  - Tehama-Colusa Canal

    - Funks Reservoir located approximately 65 miles south of the Red Bluff Pumping Plant
- Existing GCID Hamilton City Diversion and the GCID Main Canal
- Colusa Basin Drain (CBD)

Both action alternatives would require pumping capacity that exceeds the existing total installed capacity of 2,000 cfs of the Red Bluff Pumping Plant to convey flow to Funks Reservoir and ultimately Sites Reservoir. Both action alternatives would require installation of two additional 250-cfs vertical axial-flow pumps into existing concrete pump bays at the pumping plant.

Both action alternatives would also require a new 3,000-cfs GCID Main Canal headgate structure about 0.25 mile downstream of Hamilton City Pump Station. The existing headgate structure would be inadequate for proposed winter operation during high river flows. To streamline maintenance during the winter shutdown period (i.e., reduce it from the current shutdown window of 6 weeks to 2 weeks), smaller improvements would be required to integrate Sites Reservoir into the GCID system.

Use of the existing Funks Reservoir would require excavation of sediment to return it to its original capacity. The bottom of Funks Reservoir would be reshaped to allow large, unimpeded flows to and from the new Funks PGP.

Proposed access during construction will avoid the town of Maxwell, utilizing County Roads 68 and 69, McDermott Road, Maxwell Sites Road and Sites Lodoga Road. Several of these existing roads would require improvement to support construction activities. Other local roads would need to be relocated or developed to accommodate access due to the construction of reservoir facilities. These include portions of Sites Lodoga Road, Huffmaster Road, and Communication Road.

2.2 Proposed Conveyance Facilities

Implementation of either Alternative 1 or 2 would require various facilities to control the conveyance of water between Sites Reservoir and the Tehama-Colusa Canal and GCID Main Canal. These facilities would include regulating reservoirs, pipelines, PGPs, electrical substations, and administration and maintenance buildings.

The two regulating reservoirs would be the existing Funks Reservoir and the new Terminal Regulating Reservoir (TRR). Both regulating reservoirs would have two 12-foot-diameter pipelines extending to and from Sites Reservoir just below Golden Gate Dam. At each regulating reservoir, the pipelines would be connected to a pumping generating plant that pumps water from the regulating reservoir to Sites Reservoir, as well as turbines that would generate power when flows were released from Sites Reservoir. There would also be energy dissipation equipment adjacent to each PGP (e.g., fixed cone valve[s]) to throttle the flow of water into each regulating reservoir when the turbines are not being used.

A transition manifold would be constructed at the base of Golden Gate Dam to connect pipelines from Sites Reservoir to Funks Reservoir and the TRR pipelines. In

addition, a point of interconnection to a high-voltage electric transmission line would be required to power the facilities at the proposed TRR and Funks electrical substations.

Water released from Sites Reservoir would be conveyed south of Sites Reservoir using the existing Tehama-Colusa Canal and a new Dunnigan pipeline. The water would flow south about 40 miles to the end of the Tehama-Colusa Canal, where it would be diverted into the proposed Dunnigan Pipeline. Under Alternative 1, the flows would subsequently be conveyed to the CBD and released through the proposed CBD Outlet Structure, eventually reaching the Sacramento River at Knights Landing or to the Yolo Bypass/Cache Slough complex through the Knights Landing Ridge Cut. Under Alternative 2 water would flow south to the end of the Tehama-Colusa Canal but would be diverted into an extended Dunnigan Pipeline, with release directly to the Sacramento River with some flows released to the CBD to flow into the Yolo Bypass/Cache Slough complex through the Knights Landing Ridge Cut for environmental benefits under Proposition 1.

2.3 Proposed Reservoir Facilities

Under either alternative, water would be impounded by the Golden Gate Dam on Funks Creek and the Sites Dam on Stone Corral Creek; a series of saddle dams along the eastern and northern rims of reservoir would close off topographic saddles in the surrounding ridges to form Sites Reservoir. Two saddle dikes are also needed at topographic saddle low points along the northern end of the reservoir. These components of the reservoir would be scaled according to the alternative.

Under Alternative 1, the proposed 1.5-MAF reservoir would have a Normal Maximum Water Surface (NMWS) elevation of 498 feet. Under Alternative 2, the proposed 1.3-MAF reservoir would have an NMWS elevation of 482 feet. Nominal crest would be at elevation 517 feet for all dams for 1.5-MAF capacity, and at elevation 500 feet for 1.3-MAF capacity. Table 2 presents a summary of dam heights required to impound Sites Reservoir for the 1.5-MAF capacity and 1.3-MAF capacity.

Table 2. Dam Heights for 1.5-MAF and 1.3-MAF Sites Reservoir Alternatives

Dam/Dike	1.5-MAF Reservoir Maximum Height Above Streambed (feet)	1.3-MAF Reservoir Maximum Height Above Streambed (feet)
Golden Gate Dam	287	270
Sites Dam	267	250
Saddle Dam 1	27	None
Saddle Dam 2	57	40
Saddle Dam 3	107	90
Saddle Dam 5	77	60
Saddle Dam 6	47	None
Saddle Dam 8A	82	65
Saddle Dam 8B	37	5
Saddle Dike 1	12	10 (near Saddle Dam 1)
Saddle Dike 2	12	10 (near Saddle Dam 6)
Saddle Dam 10 [a]	Not required for 1.5-MAF Reservoir	30

[a] For the1.3-MAF Reservoir, Golden Gate Dam would be reconfigured and Saddle Dam 10 added to close off a topographic saddle in the ridge that is closed in the 1.5-MAF Golden Gate Dam configuration.

The engineering team is continuing to evaluate different options for dam fill that would be utilized under either Alternative 1 or Alternative 2. One option is an earth- and rockfill dam and another option is an earthfill dam. The proposed inlet/outlet works for an earthfill dam would be located to the south of Golden Gate Dam and would be used both to fill the reservoir through conveyance facilities located to the East and to make releases from Sites Reservoir. The inlet/outlet works include:

1. A multi-level intake tower including a low-level intake.
2. Two 23 foot inside diameter inlet/outlet tunnels through the ridge on the right abutment of Golden Gate Dam.

2.4 Proposed Recreational Facilities

As specified in the Sites Water Storage Investment Program application, either alternative would include two primary recreation areas and a day-use boat ramp which are to be phased in over a period of time. Located on the northwest shore of the proposed Sites Reservoir, to the north of the existing Sites Lodoga Road, the Peninsula Hills Recreation Area would include approximately:

- 200 campsites (car and recreational vehicle)
- one group camp area
- 10 picnic sites (with parking at each site)
- hiking trails
- electricity
- potable water
- one kiosk
- 19 vault toilets

Located on the eastern shore of the Sites Reservoir, north of the existing Maxwell Sites Road and proposed Sites Dam, the Stone Corral Creek Recreational Area would include:

- 50 campsites (car and recreational vehicle)
- electricity

- 10 picnic sites (with parking at each site)
- six-lane boat launch site
- hiking trails
- potable water
- one kiosk
- 10 vault toilets

Each alternative would also include a Day-Use Boat Ramp/Parking Recreation Area, located on the western side of the reservoir where the existing Sites Lodoga Road intersects with the proposed inundation area for the reservoir. Facilities would include:

- one kiosk
- one vault toilet
- potable water
- parking area

2.5 Proposed Roads and South Bridge

In addition to modifying existing roads for construction access, the project will require up to 46 miles of new paved and unpaved roads to provide construction and maintenance access to the proposed facilities, as well as public access to the proposed recreation areas. Sites Lodoga Road provides access to and from the town of Maxwell, which is adjacent to Interstate 5. Sites Lodoga Road becomes Maxwell Sites Road east of the rural community of Sites that is within the inundation area. The reservoir would eliminate east-west access to Interstate 5 (east of the reservoir) from the rural communities of Stonyford and Lodoga (west of the reservoir) because it would inundate the current route of Sites Lodoga Road. The current Sites Lodoga Road is an east-west, two-lane rural collector road and provides an emergency and evacuation route to and from these rural communities. Because construction of the Sites Dam would eliminate access on the Sites Lodoga Road, this collector road would need to be relocated/realigned prior to project construction.

Under Alternative 1, the realigned Sites Lodoga Road would include the construction of a bridge across the reservoir. Various bridge types and options have been evaluated. One option for a bridge is a full-length bridge that would offer navigational passage along the entire width of the reservoir. Another option for a bridge is a causeway with partial fill, which would limit the navigational passage within the reaches of the shorter bridges; however, the approach to implementing fill prism in the reservoir would significantly reduce construction cost. Alternative 1 would also include the realignment of the existing Huffmaster Road to provide access to properties otherwise inaccessible due to reservoir construction.

Under Alternative 2, the realignment of Sites Lodoga Road would result in a road that ultimately extends from Maxwell to the community of Lodoga around the southern end and western side of the proposed Sites Reservoir. This road, referred to as the Maxwell Lodoga Road, would include the realignment and repavement of the existing Huffmaster Road.

2.6 Project Buffer

The proposed project buffer would consist of the total amount of land that would be acquired beyond the facility footprints for each alternative. The preliminary approach to the buffer is outlined below.

- The buffer would include 100 feet around all buildings and most ground facilities (e.g., substations, any aboveground pipelines) along with 100 feet around the Sites Reservoir Complex and recreation areas.
- The buffer may be less than 100 feet if the facility is near a property boundary and the proposed uses do not conflict with the adjacent land uses.
- No project buffers are anticipated for underground or buried facilities (i.e., Dunnigan Pipeline), overhead power lines, or roads (both public and project maintenance access roads).
- The Authority would evaluate the need for the buffer (and if implemented, an appropriate width) on a case-by-case basis in coordination with adjacent landowners. The buffer would likely be acquired in fee title by the Authority; however, acquisition of buffer areas in an easement may be feasible under certain circumstances.
- The lands within the buffer would generally remain undeveloped. Limited features may be installed to reduce future maintenance activities and fire hazards. These features may include limited fencing, regrading to construct fire breaks or fire trails, or similar actions.
- The lands within the buffer would be maintained by the Authority. Maintenance activities that are proposed to be undertaken within the project buffer include vegetation maintenance and periodic fire break maintenance. Such activities may include grazing, periodic tilling or disking, and performing limited controlled/prescribed burns. Where appropriate, the buffer may be managed as wildlife habitat. Fence maintenance would occur within the buffer.

3.0 Operations

The operation of the project under each alternative will be defined in upcoming months as the modeling and development of diversion criteria are further advanced. The member participants of the Authority have a collective demand of approximately 240,000 acre-feet, of which 192,892 acre-feet is needed by participating public water agencies[3]. Reclamation is also a participant through funding and/or operational exchanges with Shasta Lake. The State would also be involved through operational exchanges with Oroville Reservoir and storage in State Water Project facilities south-of-Delta.

Sites Reservoir would be filled by diverting unregulated/unappropriated flow in the Sacramento River. This water originates during winter storm events, which increase flows in the tributaries to the Sacramento River below Keswick Dam and avoiding any effects on the Trinity River. Water would be available for diversion after senior water rights are met, in-river aquatic species protection requirements are met, and delta water quality requirements have been met. Diversions would occur at the fish screened Red Bluff Pumping Plant and the GCID Hamilton City location when applicable regulatory requirements are met and existing pumping and conveyance capacity is available to convey water through the canals to the reservoir. TRR and Funks Reservoir, PGPs, and pipelines connect directly to the inlet/outlet works and would be operated in parallel to

[3] April 2020 Sites Project Value Planning Alternatives Appraisal Report.

pump water into and out of Sites Reservoir. Water would enter (and be released from) the reservoir through the inlet/outlet works.

Reservoir releases include releases to meet participant demands and to deliver water for a range of environmental benefits that will be finalized during project development and permitting.

- Sites Reservoir would be operated in cooperation with Central Valley Project (CVP) and SWP operations to coordinate with releases made with the CVP and SWP from Shasta Lake, Lake Oroville, and Folsom Lake. Sites Reservoir releases could supplement and/or allow reduced releases from other reservoirs while maintaining minimum instream flow objectives, Sacramento River temperature requirements, and Delta salinity control requirements assigned to CVP and SWP.
- Releases would be made mostly in dry and critical water years. Water users north of the Delta would mostly receive deliveries from the TCCA canal and GCID canal. Water users south of the Delta would receive water primarily via SWP pumping facilities.
- Using the CBD for conveyance of Sites Reservoir water would include coordination with the local landowners regarding the project operation and timing of the additional flows.

Releases would also be made to Funks and Stone Corral Creeks for downstream water right holders and to maintain ecological function in the sections of these creeks affected by the project. A proposed Reservoir Operations Plan would describe the management of water operations, including releases to Funks and Stone Corral Creeks.

Operation of either alternative would require power to run facilities and pump water. The identification of a power source and the location of transmission facilities is pending coordination with Western Area Power Administration and/or Pacific Gas and Electric. Each of the alternatives would also generate incidental power when water is released from Sites Reservoir at the Funks PGP and TRR PGP. The capacity of the project power generation facilities is anticipated to be below the threshold such that no license would be required from the Federal Energy Regulatory Commission and the facilities would satisfy the criteria for a "Qualifying Conduit Hydropower Facility" under the Hydropower Regulatory Efficiency Act of 2013, as amended by America's Water Infrastructure Act of 2018.

4.0 Maintenance and Management

Under either alternative, maintenance activities for the project facilities would include debris removal, dredging, vegetation control, rodent control, erosion control and protection, routine inspections (dams, tunnels, pipelines, PGPs, inlet/outlet works, fencing, signs, and gates), painting, cleaning, repairs, and other routine tasks to maintain facilities in accordance with design standards after construction and commissioning. Routine visual inspection of the facilities would be conducted to monitor performance and prevent mechanical and structural failures of project elements. Maintenance activities associated with proposed river intakes could include

cleaning, removal of sediment, debris, and biofouling materials. These maintenance actions could require dewatering; suction dredging or mechanical excavation around intake structures; or the use of underwater diving crews, boom trucks, rubber-wheel cranes, and raft- or barge-mounted equipment. Proposed maintenance activities could occur on a daily, annually, periodically (as needed), and long-term basis.

The Authority would also develop and implement a Reservoir Management Plan to define the land uses of project lands controlled by the Authority, fish stocking and vector control practices, and the resources associated with project lands. The Reservoir Management Plan would include the following types of information:

- **Fisheries Management.** This would target species composition for Sites Reservoir, including stocking strategies, habitat enhancement measures, and monitoring efforts.
- **Land Use Management and Recreation.** This would outline how decisions regarding future amenities would be made and what land use considerations would be factored into Authority operations and activities.
- **Easement Management:** Right-of-ways and/or permanent easements would be required for long-term operation and maintenance of all the large-diameter pipelines. This would outline management and maintenance activities for easement areas.
- **Emergency Management**. This would establish protocol on how the Authority would be involved in controlling and resolving emergency situations, including those arising as a result of recreationists.
- **Vector Management.** This would establish protocols and practices for communicating and coordinating with vector control authorities in determining how vector control would be managed at the project facilities.
- **Sediment Management and Removal.** This would consolidate information on the frequency and locations of dredging, testing of sediment before disposal, disposal locations, and procedures to follow if sediment contaminant levels exceed regulatory standards for constituents of concern (e.g., pesticides).

5.0 Best Management Practices

A number of Best Management Practices and environmental commitments are proposed to be included in Project design, construction and operation/maintenance. The following proposed list of Best Management Practices and environmental commitments would be considered part of the Project.

- Conform with Applicable Design Standards and Building Codes
- Perform Geotechnical Evaluations and Prepare Geotechnical Data Reports
- Utility and Infrastructure Verification and/or Relocation
- Natural Gas Well Decommissioning
- Water Wells Decommissioning
- Road Abandonment
- Environmental Site Assessment(s)

- Salvage, Stockpile, and Replace Topsoil and Prepare a Topsoil Storage and Handling Plan
- Stormwater Pollution Prevention Plan(s) and Best Management Practices (storm water and non-storm water)
- Stormwater Pollution Prevention Plan for Operation and Maintenance
- Spill Prevention and Hazardous Materials Management / Accidental Spill Prevention, Containment, and Countermeasure Plans and Response Measures
- Minimize Soil Disturbance
- Comply with Requirements of RWQCB Order 5-00-175
- Groundwater/ Dewatering Water Supply
- Construction Equipment, Truck, and Traffic Management Plan
- Visual/Aesthetic Design, Construction, and Operation Practices
- Fire Safety and Suppression / Fire Prevention and Control Plan
- Worker Health and Safety Plan
- Blasting Standard Requirements
- Mosquito and Vector Control During Construction
- Construction Noise Management
- Operation and Maintenance Noise Management
- Construction Emergency Action Plan
- Emergency Action Plan for Reservoir Operations
- Electrical Power Guidelines and EMF Field Management Plan
- Construction Equipment Exhaust Reduction Plan
- Fugitive Dust Control Plans
- Construction Best Management Practices to Reduce Greenhouse Gas Emissions
- Hazardous Materials Management Plans
- Construction Site Security
- Notification of Maintenance Activities in Waterways
- Worker Environmental Awareness Program
- Fish Rescue and Salvage Plans for Funks Reservoir, Stone Corral Creek, and Funks Creek for Alternative 1; for Sacramento River for Alternative 2
- Construction Best Management Practices and Monitoring for Fish, Wildlife, and Plant Species Habitats, and Natural Communities
- Control of Invasive Plant Species during Construction and Operation

6.0 Pre-Construction Activities

In addition to items/activities addressed in the above list of proposed BMPs and ECs, there are other activities that would be required prior to the initiation of construction of the different physical components of either Alternative 1 or Alternative 2. These activities include: finalizing criteria and standards used for final design, including emergency management/release requirements; preparing a Dam Monitoring Program; conducting additional geotechnical and related field investigations to support design; relocation of two private cemeteries (Sites Cemetery and a Rancheria Cemetery); and the development and implementation of a Resident Relocation Program.

7.0 Timing of Environmental Review and Feasibility Report

The current schedule contemplates release of the Revised EIR/Supplemental EIS in July 2021. This is roughly the same timing for the engineering team's finalization of the Feasibility Report for the California Water Commission. As such, preparation of the Revised EIR/Supplemental EIS and Feasibility Report are proceeding simultaneously. To accommodate the project schedule and the simultaneous preparation of the Revised EIR/Supplemental EIS and Feasibility Report, the following project components will be utilized for the analysis:

- Sites Lodoga Road and Bridge – Under Alternative 1, the Revised EIR/Supplemental EIS will include the option of the shorter bridge with fill prisms, including the cast-in-place prestressed concrete box girder bridge type. This option was identified as a lowest cost bridge alternative in the Value Planning Report while meeting the functional requirements for efficient traffic flow.
- Dam Fill Materials – Under Alternative 1 and 2, the Revised EIR/Supplemental EIS will include the option of using earth and rockfill. This option is anticipated to be preferred by the Division of Safety of Dams and will assist in meeting the schedule and affordability goals; it also provides maximum coverage for potential environmental effects as the rockfill involves blasting associated with rock quarrying.
- Terminal Regulating Reservoir (TRR) – Under Alternative 1 and 2, it is anticipated that the Revised EIR/Supplemental EIS will include the current TRR location. Other locations currently are under review due to the extent and costs associated with ground preparation needed for construction at the current site.
- GCID and Colusa Basin Drain Facility Improvements – Under Alternative 1 and 2, the Revised EIR/Supplemental EIS will describe the types of improvements needed to convey water through existing facilities and reduce GCID's current maintenance winter shutdown period from 6 weeks to 2 weeks, pending agreement between GCID and the Authority on any specific improvements that may be warranted due to implementation of the project. Improvements may also be needed to the Colusa Basin Drain to convey Sites water.
- Emergency Releases – In the rare and unanticipated condition that the Sites Reservoir has to conduct emergency releases, these releases are currently planned to be made into Funks Creek, Stone Corral Creek, and into the Hunters Creek watershed via Saddle Dam 3, 5, and 8b. Emergency release locations and the extent of potential impacts will be evaluated in further detail as part of the on-going feasibility study.
- Dunnigan Release – Under Alternative 1, the Revised EIR/Supplemental EIS will evaluate a release to the CBD based on a preliminary hydraulic analysis. Alternatives 2 will carry forward an extension of the Dunnigan pipeline to the Sacramento River.
- Hydropower Generation – Under Alternative 1 and 2, the Revised EIR/Supplemental EIS will evaluate incidental in-line conduit hydropower generation below the threshold for a Federal Energy Regulatory Commission license.
- Temporary Water Supply for Construction – Under Alternative 1 and 2, the Revised EIR/Supplemental EIS will evaluate options for obtaining temporary water supply for construction, such as obtaining water on site via existing groundwater

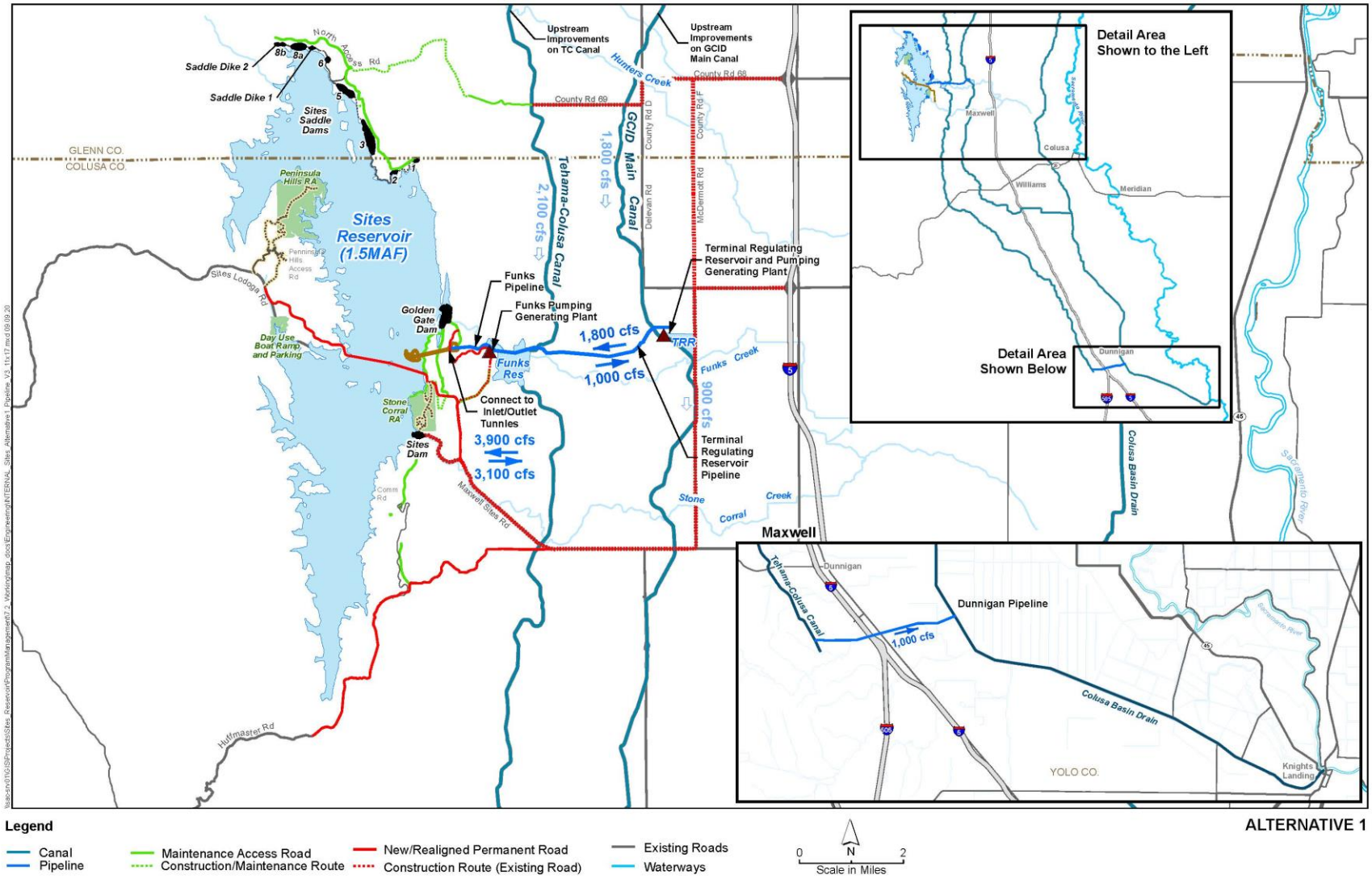
or surface water facilities and/or utilizing existing or drilling new wells, including any necessary treatment depending on the water quality.

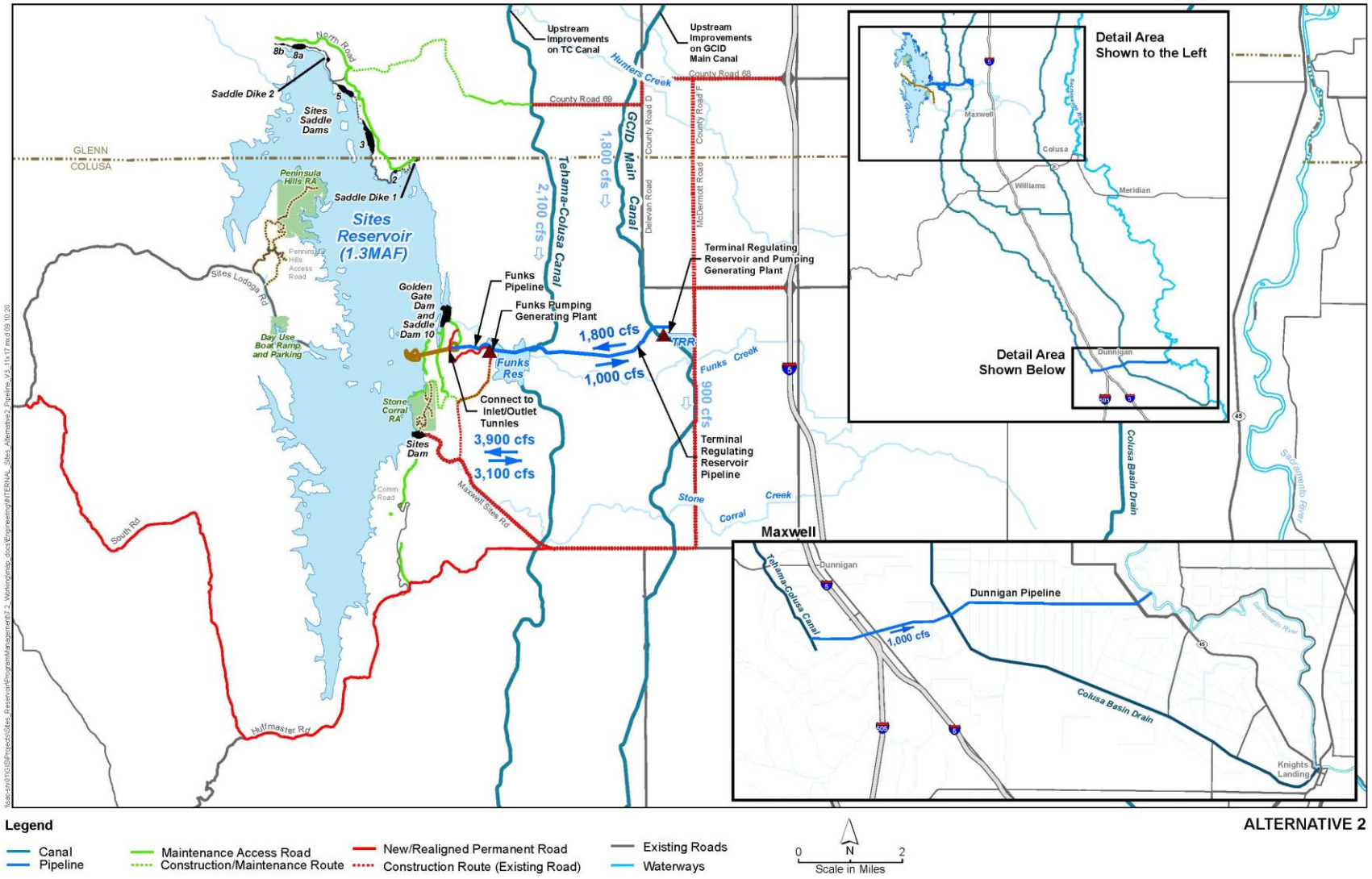
The engineering team will continue to consider and analyze options for various facility components, consistent with CEQA and NEPA requirements, in order to optimize design considerations and reduce costs.

It should also be noted that in the upcoming weeks, there will be further definition of project operations through modeling, clarification of water rights, and consultation with resource agencies. This information and any resulting changes to the alternatives described in the preliminary draft will be incorporated into the complete Chapter 2, Alternatives Description, to be completed by December 2020.

8.0 Identification of the Preferred Alternative for the Revised EIR/Supplemental EIS Analysis

The CEQA Guidelines require that an EIR analyze a reasonable range of alternatives to the project which would feasibly attain most of the basic objectives of the project and avoid or substantially lessen the significant effects of the project. An EIR also needs to identify a proposed project, i.e., a preferred alternative. At this time, Authority staff is recommending the designation of Alternative 1 as the Authority's proposed project based on it meeting the objectives identified in the Value Planning Report and being most closely aligned with Alternative VP-7, and its ability to meet the revised draft CEQA project objectives. The Revised EIR/Supplemental EIS will also evaluate Alternative 2 and the No Project/No Action Alternative.


Upstream Improvements on TC Canal
Upstream Improvements on GCID Main Canal
Detail Area Shown to the Left
Saddle Dike 2
Saddle Dike 1
Sites Saddle Dams
North Access Rd
Hunters Creek
County Rd 69
County Rd 68
GLENN CO.
COLUSA CO.
Peninsula Hills RA
Sites Reservoir (1.5MAF)
Tehama-Colusa Canal
2,100 cfs
1,800 cfs
GCID Main Canal
County Rd D
County Rd F
McDermott Rd
Delevan Rd
Terminal Regulating Reservoir and Pumping Generating Plant
Funks Pipeline
Funks Pumping Generating Plant
Golden Gate Dam
Day Use Boat Ramp and Parking
Sites Lodoga Rd
Funks Res
TRR
1,800 cfs
1,000 cfs
Funks Creek
900 cfs
Detail Area Shown Below
Maxwell
Colusa
Williams
Meridian
Dunnigan
Connect to Inlet/Outlet Tunnles
3,900 cfs
3,100 cfs
Stone Corral RA
Sites Dam
Terminal Regulating Reservoir Pipeline
Stone Corral Creek
Colusa Basin Drain
Sacramento River
Maxwell Sites Rd
Huffmaster Rd
Dunnigan Pipeline
YOLO CO.
Knights Landing
Legend
Canal
Pipeline
Maintenance Access Road
Construction/Maintenance Route
New/Realigned Permanent Road
Construction Route (Existing Road)
Existing Roads
Waterways
N
0
2
Scale in Miles
ALTERNATIVE 1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Hunters Creek
County Road 68
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GCID Main Canal
Tehama-Colusa Canal
2,100 cfs
1,800 cfs
County Road D
County Road F
McDermott Road
Delevan Road
GLENN
COLUSA
North Road
8b
8a
Saddle Dike 2
Sites Saddle Dams
5
3
2
1
Peninsula Hills RA
Saddle Dike 1
Sites Reservoir (1.3MAF)
Peninsula Hills Access Road
Sites Lodoga Rd
Golden Gate Dam and Saddle Dam 10
Day Use Boat Ramp and Parking
Stone Corral RA
Sites Dam
Comm Road
Maxwell Sites Rd
South Rd
Huffmaster Rd
Funks Pipeline
Funks Pumping Generating Plant
Funks Res
Connect to Inlet/Outlet Tunnles
3,900 cfs
3,100 cfs
1,800 cfs
1,000 cfs
900 cfs
TRR
Terminal Regulating Reservoir and Pumping Generating Plant
Terminal Regulating Reservoir Pipeline
Funks Creek
Stone Corral Creek
Maxwell
Colusa Basin Drain
Sacramento River
Detail Area Shown to the Left
Detail Area Shown Below
Maxwell
Colusa
Williams
Meridian
Dunnigan
Dunnigan Pipeline
1,000 cfs
Knights Landing
Legend
Canal
Pipeline
Maintenance Access Road
Construction/Maintenance Route
New/Realigned Permanent Road
Construction Route (Existing Road)
Existing Roads
Waterways
N
0
2
Scale in Miles
ALTERNATIVE 2

Sites Reservoir Project
Revised Recommended EIR Objectives
September 8, 2020

- OBJ-1: Improve water supply reliability and resiliency to meet member participants' agricultural and municipal long-term average annual water demand in a cost-effective manner for all member participants', including those that are the most cost-sensitive.

- OBJ-2: Provide public benefits consistent with Proposition 1 of 2014 and use Water Storage Investment Program (WSIP) funds to improve statewide surface water supply reliability and flexibility to enhance opportunities for fisheries and habitat management for the public benefit through a designated long-term average annual water supply.

- OBJ-3: Provide public benefits consistent with the Water Infrastructure Improvements for the Nation Act (WIIN Act) of 2016 by using federal funds, if available, provided by Reclamation to improve Central Valley Project (CVP) operational flexibility in meeting CVP environmental and contractual water supply needs and improving cold pool management in Shasta Reservoir to benefit anadromous fish

- OBJ-4: Provide surface water to convey biomass from the floodplain to the Delta to enhance the Delta ecosystem for the benefit of pelagic fishes[1] in the north Delta (e.g., Cache Slough).

- OBJ-5: Provide local and regional amenities, such as developing recreational facilities, reducing local flood damage, and maintaining roadway connectivity through modifications.

[1] Pelagic fish are species that spend most of their life swimming in the water column, having little contact or dependency with the bottom.