1. Introduction

1.1 Proposal and Lead Agencies

This Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) has been prepared by the Sites Project Authority (SPA), previously referred to as the Sites Joint Powers Authority, and the U.S. Department of the Interior (DOI), Bureau of Reclamation, Mid-Pacific Region (Reclamation). The SPA is the State of California (State) lead agency for compliance with the California Environmental Quality Act (CEQA) requirements; and Reclamation is the federal lead agency for compliance with the National Environmental Policy Act (NEPA) requirements. This DEIR/EIS evaluates potential direct, indirect, and cumulative effects on the environment that could result from implementation of alternative plans for the Sites Reservoir/North-of-the-Delta Offstream Storage (NODOS) Project (also referred to as the proposed Project). The proposed Project described in this document has been developed as part of the Sites Reservoir/NODOS Investigation. The Sites Reservoir/NODOS Investigation includes preparation of this EIR/EIS and a feasibility report.

This chapter contains background information that has led to preparation of this DEIR/EIS by the SPA and Reclamation; describes the Project objectives and purpose of and need for the proposed Project; describes the authorizations for the SPA and Reclamation to complete this DEIR/EIS; summarizes the CEQA and NEPA requirements for this DEIR/EIS; and provides an overview of the environmental evaluation and review process for this DEIR/EIS.

The SPA was originally formed in August 2010 as a result of the adoption of Senate Bill 7X 2 (SB 7X 2), which allows for the formation of local joint powers authorities by irrigation districts and other local water districts and local governments within the applicable hydrologic region to design, acquire, and construct water infrastructure, ecosystem, and water supply reliability projects. SB 7X 2 also authorized sale of up to $11.14 billion in bonds to help fund those types of projects. Under the authorization of SB 7X 2, the SPA was formed and comprises the County of Colusa; County of Glenn; the Tehama-Colusa Canal Authority (TCCA) and member districts Orland-Artois Irrigation District, Westside Water District, and Colusa County Water District; Glenn-Colusa Irrigation District (GCID); Reclamation District 108; and Maxwell Irrigation District.

The SPA is working with numerous water entities throughout California that are interested in participating in the Sites Reservoir/NODOS Project to receive water supplies through the operation of the proposed Project. The SPA is currently developing an application to the California Water Commission for partial funding of the public benefits of the Project under the Water Storage Investment Program (WSIP) developed as part of the implementation of the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (also known as Proposition 1 of 2014 [Proposition 1]). The SPA intends to use funds made available through the WSIP and funds from other interested water entities to construct and operate the proposed Sites Reservoir and associated facilities included in the proposed Project. The SPA contact person for the proposed Project is as follows:

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California initiated a comprehensive water plan for the State more than 100 years ago to provide water conservation, flood control, water storage, and water distribution. In 1933, the California Legislature, Governor, and electorate approved construction of the Central Valley Project (CVP). Because of difficulty in marketing bonds to finance construction, the project could not be constructed by the State, and the federal government was requested to construct the CVP. The first federal authorization of the CVP was by the Rivers and Harbors Act of August 30, 1935. The CVP was reauthorized for construction, operation, and maintenance by the Secretary of the Department of the Interior (Secretary), pursuant to the Reclamation Act of 1902, as amended and supplemented by the Rivers and Harbors Act of August 26, 1937. The 1937 act also provided that the dams and reservoirs of the CVP "… be used, first, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses; and, third, for power." In 1992, the Central Valley Project Authorization Act of August 26, 1937, was amended by Section 3406(a) of the Central Valley Project Improvement Act (CVPIA), Public Law 102-575. The CVPIA modified the 1937 act and specified that the dams and reservoirs of the CVP be used "first, for river regulation, improvement of navigation, and flood control; second for irrigation and domestic uses and fish and wildlife mitigation, protection and restoration purposes; and third for power and fish and wildlife enhancement." The CVP is composed of more than 18 reservoirs with a combined storage capacity of more than 11 million acre-feet (MAF), more than 10 hydroelectric power plants, and more than 500 miles of major canals and aqueducts. Several of the CVP reservoirs (e.g., Shasta Lake and Keswick Reservoir) regulate flows in the Sacramento River upstream of the proposed Project. The CVP Red Bluff Pumping Plant, which diverts water from the Sacramento River into the CVP Tehama-Colusa (T-C) Canal, could be used to convey water in the proposed Project. The CVP facilities are generally operated as an integrated project, although they are authorized and categorized in more distinct units or divisions; and not all facilities are operated to meet each of the above-identified Project purposes. The Reclamation contact person for the proposed Project is as follows:

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The proposed Project has been investigated by the SPA and Reclamation, as well as the California Department of Water Resources (DWR) in predecessor studies, in coordination with cooperating and responsible agencies, other resource agencies, stakeholders, and the public. This DEIR/EIS has been prepared in accordance with CEQA, NEPA, and other pertinent federal, State, and local laws and policies. The feasibility study (a study separate from the EIR/EIS) has been prepared in a manner that is consistent with the 1983 U.S. Water Resources Council (WRC) *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* (P&Gs) (WRC, 1983). The Sites Reservoir/NODOS Investigation includes both this DEIR/EIS and the accompanying feasibility report. While the DEIR/EIS describes the potential effects of proposed Project alternatives, the draft feasibility report highlights the potential costs and benefits of the alternatives.

1.2 Project Objectives and Purpose and Need

The CEQA Project objectives are important elements of an EIR to document the reasons for undertaking the proposed Project and to define the objectives that are to be achieved by the proposed Project. The NEPA purpose and need statement describes the underlying purpose and need to which the NEPA lead

agency is responding by proposing alternatives for the action. This section describes the CEQA Project objectives and the NEPA purpose and need of the proposed Project.

1.2.1 Overview of Issues, Needs, and Opportunities

An initial step in the planning process is to identify and then define problems, needs, and opportunities. Consistent with the requirements of CEQA and NEPA, needs and objectives were considered and developed in an iterative manner so that a more thorough understanding of each need and objective could be developed. The SPA and Reclamation relied upon several sources of information during the initial needs and objectives development process.

1.2.1.1 Previous Studies of Reservoirs in the Western Sacramento Valley

The need for northern California reservoir storage has been identified for more than 100 years to reduce potential flood damage in the Sacramento Valley and to provide water supplies to other parts of California. The U.S. Geological Survey (USGS) proposed a plan in 1919 (known as the 1919 Marshall Plan) to construct reservoirs along both the western and eastern foothills of the Sacramento Valley connected by canals to convey the water to the San Francisco Bay Area and areas located south of the Delta (California State Irrigation Association [CSIA], 1919). The Department of Public Works (DPW) (a predecessor agency to DWR) issued Bulletin No. 25 in 1930, which presented the State Water Plan to address these needs, including construction of a reservoir near Millsite on Stony Creek (located downstream of future proposed locations of Black Butte and Newville reservoirs) (DPW, 1930). However, the Millsite Reservoir was not included in the facilities to be initially constructed. Many facilities that were recommended for the initial construction phase in Bulletin No. 25 were implemented under the CVP by the mid-1950s.

As the CVP facilities were being constructed after World War II, California began investigations to meet additional water needs through development of the State Water Plan. In 1957, DWR published Bulletin No. 3, which identified new facilities to provide flood control in northern California and water supplies to the San Francisco Bay Area, San Joaquin Valley, San Luis Obispo and Santa Barbara counties in the Central Coast Region, and southern California (DWR, 1957). The proposed reservoirs in the 1957 California Water Plan included a 174,000-acre-foot reservoir on Redbank Creek (Schoenfield Reservoir); a 950,000-acre-foot reservoir and power plant on North Fork Stony Creek (Newville Reservoir), which also would store water from a proposed upstream 67,000-acre-foot reservoir on Thomes Creek (Paskenta Reservoir) and water from the existing East Park Reservoir on Stony Creek; and a 48,000-acre-foot offstream storage reservoir on Stone Corral and Funks creeks (Golden Gate Reservoir – now known as Sites Reservoir). The 1957 California Water Plan considered that these reservoirs would operate in an integrated manner with the proposed 50,000-acre-foot Black Butte Reservoir on Stony Creek, which was under development at that time by the U.S. Army Corps of Engineers (USACE).

Subsequent studies completed by DWR evaluated the potential for small reservoirs on several western foothill streams, including Stone Corral Creek and Funks Creek near the Sites Reservoir location, for the purposes of flood control (DWR, 1964). However, both the 1964 study and subsequent studies indicated that small flood control-only reservoirs were not the most economical plan to reduce flooding in the Colusa Basin (DWR, 2001). In 1964, Reclamation evaluated construction of a 1.2-MAF Sites Reservoir to provide water supplies to serve lands located along an extended T-C Canal downstream of Funks Reservoir.

The 1975 progress report prepared by DWR and the 1978 DWR Bulletin No. 76 evaluated several offstream reservoirs in the western foothills to provide additional water supplies to the State Water Project (SWP) and CVP as well as local flood control, irrigation water supplies, recreation, and fish enhancement benefits (CALFED Bay-Delta Program [CALFED], 2000a; DWR, 1978). The 1975 report and Bulletin No. 76 recommended construction of the 8.7-MAF Glenn Reservoir with the 435-foot Rancheria Dam on Stony Creek and the 387-foot Newville Dam on North Fork Stony Creek. Water would be diverted from the Sacramento River at the upstream end of the T-C Canal and from Thomes Creek near Paskenta with integrated storage at the existing Black Butte Reservoir. As an alternative to Glenn Reservoir, the 1975 report and Bulletin No. 76 also considered the 3.2-MAF Colusa Reservoir with 160- to 295-foot dams on Willow, Logan, Hunters, Funks, and Stone Corral creeks. Water would be diverted from the Sacramento River and conveyed to the reservoir in the existing GCID and TCCA canals. Bulletin No. 76 also recommended using storage in the USACE-proposed Cottonwood Project, which would include the 1.1-MAF Dutch Gulch Reservoir and the 900,000-acre-foot Tehama Reservoir on Cottonwood Creek. Development of projects similar to Newville and Sites reservoirs also were analyzed by GCID in 1980 and Colusa Basin Drainage District in 1995.

Federal, State, and local agencies signed the Bay-Delta Framework Agreement in December 1994, which led to the adoption of the Bay-Delta Accord and initiation of the CALFED Program in 1995 (CALFED, 2000b). As described below, the CALFED Program initiated the evaluation of expanded surface water storage in the Sacramento Valley as part of a long-term comprehensive plan to restore the ecological health and improve water management to protect beneficial uses in the Delta and the Delta watershed. Recommendations in the Final EIR/EIS (FEIR/EIS) for CALFED included actions to increase reservoir storage in the Sacramento Valley upstream of the Delta through expansion of Shasta Lake and potential implementation of Sites Reservoir following additional studies.

In 2014, the Governor of California issued the California Water Action Plan as a 5-year roadmap for a comprehensive and practical approach to water resources management in California (California Natural Resources Agency [CNRA] et al., 2015). The 2015 *California Water Action Plan Implementation Plan 2014-2018*, described actions conducted in 2014 under the California Water Action Plan and activities to be completed by 2018 under the 10 major actions in the plan. One of the major actions (Action 6) was to "Expand Water Storage Capacity and Improve Groundwater Management," including use of funds provided by Proposition 1 to expand and/or improve use of existing storage capacity.

CALFED Bay-Delta Program and North-of-the-Delta Offstream Storage

As described above, potential locations and operations of offstream storage to be located in the western foothills of the Sacramento Valley were identified prior to the CALFED Program. However, during preparation of the CALFED EIR/EIS, information from those prior studies and results from additional analyses conducted under CALFED were considered in the identification of Sites Reservoir as a potential project to increase north-of-the-Delta offstream storage. The following provides a summary of the evaluation process conducted as part of the CALFED Program.

The CALFED Program was established to "develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system" (CALFED, 2000b). The CALFED Program identified the need for up to six million acre-feet of additional storage, including an additional three million acre-feet of storage north of the Delta. The CALFED Program sought to build a framework for managing California's water resources, stating that "expanding water storage capacity is critical to the successful implementation of all aspects of the

CALFED Program. Not only is additional storage needed to meet the needs of a growing population, but, if strategically located, it will provide much needed flexibility in the system to improve water quality and support fish restoration efforts. Water supply reliability depends upon capturing water during peak flows and during wet years, as well as more efficient water use through conservation and recycling" (CALFED, 2000b). The CALFED Program began in May 1995 to address the complex issues that surround the Bay-Delta with a cooperative interagency effort of 18 State and federal agencies with management or regulatory responsibilities for the Bay-Delta. In addition, the CALFED Program was a collaborative effort including representatives of agricultural, urban, environmental, fishery, and business interests, Indian tribes, and rural counties who have contributed to the process.

The CALFED Program objectives were fourfold: 1) to restore the ecological health of a fragile and depleted Bay-Delta estuary; 2) to improve the water supply reliability for the State's farms and growing cities that draw water from the Delta and its tributaries, including seven million acres of the world's most productive farmland; 3) to protect the drinking water quality of the 27 million Californians who rely on the Delta for their supplies; and 4) to protect the Delta levees that ensure its integrity as a conveyance and ecosystem. Surface storage is part of an overall water management strategy that incorporates other CALFED Program actions, such as conservation, water use efficiency, conveyance, transfers, groundwater storage and conjunctive use, and habitat restoration to meet these Program objectives.

The CALFED Bay-Delta Authority and DWR, with technical assistance from Reclamation, initiated the Integrated Storage Investigation in 1997 to develop information to be considered in the evaluation of surface water storage projects in the CALFED EIR/EIS. The Integrated Storage Investigation considered five potential surface water storage projects: expansion of the CVP Shasta Lake, expansion of the Contra Costa Water District Los Vaqueros Reservoir, the In-Delta Storage Program on four Delta islands, the Upper San Joaquin River Basin Storage Investigation, and the NODOS Investigation. The NODOS Investigation under the Integrated Storage Investigation was conducted in coordination with several local entities, including GCID and TCCA, which are members of the SPA.

Preliminary results from the Integrated Storage Investigation were used to inform the analysis of 12 potential surface water reservoir sites and several groundwater storage locations, including Sites Reservoir, in the CALFED EIR/EIS. The range of alternatives considered and the results of the screening analysis conducted in the CALFED EIR/EIS are summarized in Chapter 2 Alternatives Analysis and Appendix 2A Screening of Range of Surface Water Storage Alternatives. The Final CALFED EIR/EIS and the CALFED Record of Decision (ROD) (CALFED, 2000c) recommended that DWR, Reclamation, and other CALFED agencies conduct detailed analyses of the expansion of the CVP Shasta Lake and Contra Costa Water District Los Vaqueros Reservoir, implementation of the In-Delta Storage Program, and implementation of 500,000 to 1.0 MAF of groundwater storage. The ROD also recommended additional studies for the NODOS Investigation and the Upper San Joaquin River Basin Storage Investigation to provide additional engineering and environmental analyses as well as development of fund-sharing agreements. The CALFED ROD indicated that the NODOS Project could enhance water management flexibility and water supply reliability in the Sacramento Valley, improve fish survival, and improve water quality. The Project objectives and purpose and need items support opportunities to address these issues identified in previous studies, including in the CALFED EIR/EIS and the CALFED ROD. While these studies and investigations form the basis for the screening of alternatives (see Appendix 2A) to those evaluated in this document, this EIR/EIS does not tier from the CALFED EIR/EIS.

1.2.1.2 Project Objectives, Purpose and Need, and Opportunities

The following Project objectives, developed in accordance with CEQA, and the purpose and need statement, developed in accordance with NEPA, provide opportunities to address the ongoing issues to water supplies, water quality, and biological resources.

The reason for the proposed Project is to build an offstream surface water storage reservoir located north of the Delta. The proposed Project's primary objectives and purpose and needs are to:

- Improve water supply reliability for local Sacramento Valley uses as well as statewide agricultural, urban, and environmental uses.
- Increase survival of anadromous and endemic fish populations.
- Improve environmental and drinking water quality in the Delta.
- Provide flexible hydropower generation to support integration of renewable energy sources.

Secondary objectives for the proposed Project were identified as:

- Develop additional recreation opportunities.
- Provide incremental flood damage reduction opportunities.
- Develop operational flexibility.

Water Supply Reliability for Agricultural, Urban, and Environmental Uses

The California Water Plan Update 2013 (DWR, 2013) identifies methods that provide sustainable and reliable water supplies to support public safety, environmental stewardship of unique ecosystems, and economic stability for the California economy. The California Water Plan Update defines water supply reliability as "the availability or provision of water of sufficient quantity and quality to meet water needs for health and economic well-being and functioning." Water managers and users (including environmental beneficial users) are concerned with the quantity, frequency of availability, and water quality of their total water supplies from one to several water sources. For surface water systems, such as the CVP and SWP, the reliability for a particular user is determined by both runoff and system-specific needs and capabilities. In drier years, there is less water available for delivery than in wetter years. System needs include the total water user demand on the system and requirements such as senior water rights demands, federal and State flow and water quality standards, instream flows for senior water rights users or habitat beneficial uses, and flood operations at the reservoirs. The following issues provide examples of water supply reliability challenges in California.

- Water supply reliability requires the delivery of specified amounts of water at predictable locations and times. A review of DWR's SWP Delivery Reliability Reports since 2002 as well as CVP water availability and ability to meet contracted amounts indicates declining SWP and CVP water supply reliability. For example, long-term average SWP delivery reliability under Schedule A water deliveries declined from 76 percent in 2002 to 62 percent in 2015 (DWR, 2002,2015), or a reduction of 580,000 acre-feet/year. The long-term average CVP delivery (including deliveries to water rights holders, settlement water contractors, and exchange water contractors) was projected as 60 percent in 2000 and 49 percent in 2015, or a reduction of 1,110,000 acre-feet (Reclamation, 1999,2015).
- During prolonged recent droughts (such as 1987 to 1992, 2007 to 2009, and 2012 to 2016) or multiple dry years, water in storage is reduced and water supplies are less reliable. This reliability for

agricultural and municipal water users is exacerbated by increased water demands to support environmental beneficial uses and reduced natural rainfall for agriculture and groundwater recharge.

  - **Opportunity for proposed Project:** A new surface storage reservoir would provide a means of capturing water during wetter periods to improve water supply reliability as well as the potential to improve the ability to provide water to maintain and improve instream habitat (including cold water temperature for anadromous and Delta species), especially during drier periods as described below.

  - **Opportunity for proposed Project:** From a planning perspective, emergency response has been incorporated into the water supply reliability objective of the proposed Project. By improving water in storage at any given time, operators would have additional water available in storage to respond to specific types of emergencies, including emergency water supply for maintenance of Delta salinity following a levee failure.

- Climate change projections would result in California's mountain snowpack melting earlier in spring and decreasing over time. Sea-level rise along the coast is beginning to threaten Delta water supplies and estuarine habitat as seawater intrudes into the Delta. Additional water will be required to be released from SWP and CVP reservoirs to maintain Delta salinity criteria if these criteria established by the federal and State agencies are not modified for climate change. All of these effects tend to diminish water supply reliability.

  - **Opportunity for the proposed Project:** The additional storage provided by the proposed Project would help mitigate and adapt to these reliability trends related to climate change and sea-level rise.

Survival of Anadromous and Endemic Fish Populations

Populations of anadromous and endemic fish species within the Sacramento Valley river system and Bay-Delta are declining. The National Marine Fisheries Service (NMFS) 2009 biological opinion for the long-term coordinated operation of the CVP and SWP found that the anadromous fish species declines appear to be related to implementation of dams and physical barriers to historic upstream habitat; habitat degradation in the rivers and the Delta including reduced instream flows, increased water temperatures, and poor water quality; and predation from introduced species (NMFS, 2009). Additional potential causes of fish species declines in the Bay-Delta have been identified by the Interagency Ecological Program, including a combination of reduced habitat suitability (such as changing salinity), reduced food sources, entrainment, invasive species, predation, and toxins and other water quality degradation (Baxter et al., 2010). Existing onstream dams block many of the native anadromous species from their historic spawning areas, which include stream segments with stream beds to optimize spawning and rearing of salmonids and cold water through the summer months due to snowmelt. Stream segments downstream of the dams are not as optimized for large-scale spawning and rearing as in the upper watersheds, and water temperatures in the foothills and valley floor are warmer than in the upper watersheds. Cold water releases assist in supporting spawning and rearing habitat, but available water is limited in many years due to limited storage volumes and/or climatic conditions.

Similar to water deliveries, water temperature reliability is also based on operations and hydrology. The reliability of cold water in these streams could be increased and temperatures for anadromous fish could be improved by both maintaining additional water in storage year to year and releasing additional water at specific times to improve temperatures. Additional water in storage could also be released to improve Delta outflow in coordination with water releases for water supplies and other beneficial uses.

- **Opportunity for the proposed Project:** Additional storage from the proposed Project would provide a source of additional water within the SWP and CVP systems that could be used to facilitate ecosystem restoration and enhancement actions to improve conditions in the Delta and Sacramento River watershed.

Water Quality

Water quality concerns associated with the Delta include salinity and toxins (e.g., pesticides, dissolved ammonia, and methyl mercury) from point and non-point sources. With respect to salinity, the State Water Resources Control Board (SWRCB) issued Decision 1641 to amend the SWP and CVP water rights to include flow and water quality objectives to protect beneficial uses in the Delta and Suisun Marsh. Several of these objectives include specific minimum flows in the Sacramento River at Rio Vista and Delta outflow requirements in specific months to maintain water quality and flows in the Delta to protect other beneficial uses as the SWP and CVP export water from the intakes in the southern Delta. The SWP and CVP operations release water from SWP and CVP upstream reservoirs to comply with these flow and quality criteria.

- **Opportunity for the proposed Project:** Additional water in storage from the proposed Project could improve Delta water quality by providing additional supplemental flows dedicated to Delta outflow during periods when Delta water quality is impaired. Releases from the proposed Project also could reduce salinity in the south Delta to improve water quality for in-Delta water users, SWP and CVP export water users, and the Bay-Delta ecosystem.

Flexible Hydropower Generation

California Governor Brown's *Clean Energy Jobs Plan* issued in 2011 included a goal to add 8,000 megawatts (MW) of large-scale renewable generation (greater than 20 MW) by 2020 (California Energy Commission, 2015). As of 2014, large-scale renewable generation capacity increased by 7,700 MW. Overall increased use of renewable energy would result in reduction in greenhouse gases in accordance with federal and State laws.

- **Opportunity for the proposed Project:** The proposed Project would be built with pumping/generating plants capable of producing hydropower. Electricity would be generated when water is released from the proposed Sites Reservoir into the proposed Holthouse Reservoir, and from the proposed Holthouse Reservoir to the proposed Terminal Regulating Reservoir and into the Sacramento River. The proposed Project would also be capable of daily pump-back operations. In pump-back operations mode, water would be released from the proposed Sites Reservoir into the proposed Holthouse Reservoir during on-peak hours to generate electricity, and water would be pumped back into the proposed Sites Reservoir during the off-peak hours to complete the pump-back operations cycle. Additional storage provided by the proposed Project could facilitate flexible hydropower generation, which could be quickly ramped up or down to complement wind or solar generation to meet power demands and support reliable operation of the power grid. Hydropower provided by the proposed Project could be brought online relatively quickly and would be well suited to provide flexible generation.

Additional Recreation Opportunities

As population increases in the Sacramento Valley, demands for flat water, river, and land-based recreation are expected to increase.

- **Opportunity for the proposed Project:** The planning of any reservoir north of the Delta provides an opportunity to develop new recreational facilities and provide additional

opportunities for recreation activities such as fishing, swimming, camping, boating, and hiking. The proposed Project would provide up to three new recreation areas.

Incremental Flood Damage Reduction

Existing SWP, CVP, and other large reservoirs are an important part of the flood management in the Sacramento Valley. However, as described above, future climate change conditions are projected to increase rainfall volume and intensity during storm events, which could result in the need for additional flood management actions related to storage and levee design.

- **Opportunity for the proposed Project:** Offstream storage can provide incremental flood damage reduction improvements to areas located immediately downstream of the reservoir that are prone to flooding and downstream of the diversions from the Sacramento River. The proposed Project would reduce flood flows on two ephemeral creeks that are known to cause local flood damage and assist in improving local flood control management. Diversions during high stream flow in the Sacramento River also could reduce flood risks downstream of those diversions into the proposed Project reservoir.

Operational Flexibility

Operational flexibility was identified as a need by the CALFED Program, the Sites Reservoir/NODOS Project investigation effort, California Water Plan Update, and the California Water Action Plan. Operational flexibility can be defined as the ability of water systems to adapt and respond to changing or uncertain conditions. Increased water in storage provides increased operational flexibility for a system by allowing system operators and water managers to increase water supply reliability for agricultural and municipal/industrial users, improve ecosystem conditions, and/or improve water quality.

California's water management challenges include climate change response management, declining ecosystems, diminishing water quality, and aging infrastructure (DWR, 2013). An example of the loss of operational flexibility in the State's water systems is the declining trend of end-of-water-year storage in September. Shasta Lake is California's largest reservoir and the largest storage facility of the CVP. The water stored in Shasta Lake represents approximately 41 percent of the total storage capacity of the CVP (Reclamation, 2013). Lake Oroville is the State's second largest reservoir and keystone of the SWP. Figure 1-1 shows the trend in Shasta Lake end-of-water-year storage (i.e. water in storage) from 1953 to 2012. Figure 1-2 shows the trend in Lake Oroville end-of-water-year storage from 1968 to 2012. The trend of long-term average end-of-water-year storage is diminishing, from over 3 million acre-feet to under 2.5 million acre-feet at Shasta Lake, and from 2.4 million acre-feet to approximately 1.8 million acre-feet at Lake Oroville. Generally, there is less water in storage at the beginning of each water year (i.e. end of September) than has been available over the history of either reservoir. There are likely many reasons for these trends[1]. However, consideration of the operational changes over time associated with the State's two largest water systems is helpful to understand these trends. When the CVP and SWP were first constructed, the systems had operational flexibility. Deliveries and regulatory requirements were less; both have increased over time, and system operational flexibility has declined.

Federal and State reservoirs are being required to serve more purposes than they have historically. Due to changing regulatory requirements, the quantities of water needed to meet Delta water quality standards

[1] Fundamentally, water in storage is directly related to two factors: inflow (i.e. hydrology) and releases (i.e. operations). The trend of inflow to the Shasta Lake is essentially flat (i.e. has not varied over time), with a slight upward trend. The Lake Oroville inflow trend is diminishing, but at a slower rate than storage. Therefore, it is likely that the diminishing trend in end of water year storage is due primarily to changes in operations over time. Some highlights of these changes are generally described in the text.

have increased. The quantities of water dedicated to habitat and ecosystem functions have increased over time as well, including new refuge water supply and instream flow commitments associated with the CVPIA and the 2008 U.S. Fish and Wildlife Service (USFWS) and 2009 NMFS biological opinions for the protection of both Delta and upstream fish species. Consequently, the CVP and SWP water systems continue to experience reduced flexibility in timing, location, and capacity to meet these multiple objectives. All of these increasing commitments are affecting the system reservoirs generally, and Shasta Lake and Lake Oroville specifically, which can be seen in the decreasing end-of-water-year storage trends.

In addition, it is anticipated that the system will be more constrained in the future, with increasing challenges due to the effects of climate change and sea-level rise, including variability and uncertainty from changing snow and rainfall patterns, and increased air temperatures, which will increase reservoir evaporation and the need to increase cold water storage to maintain water temperatures downstream of SWP and CVP reservoirs. For example, climate scientists expect that California's natural water storage in the form of snow, which water managers and operators rely on for more effective reservoir storage operations, will diminish. Sea-level rise will require additional water to be maintained and released from upstream SWP and CVP reservoirs to comply with salinity and flow regulatory criteria in the Delta. These changes will further diminish reservoir storage and the operational flexibility of the systems that depend on them. These and other effects associated with climate change are described in greater detail in Chapter 25 Climate Change and Greenhouse Gas Emissions.

- **Opportunity for the proposed Project:** Additional water storage in the proposed Project and other new offstream storage reservoirs located north of the Delta would contribute to increased system flexibility to meet existing and future water demands and beneficial uses. To achieve this kind of flexibility, additional storage would be most effective when operationally integrated with existing water system facilities. For example, supplemental storage in the proposed Project would provide the ability to increase the water in storage in existing system reservoirs such as Shasta Lake, Lake Oroville, Trinity Lake, and Folsom Lake. The additional water in new offstream storage and existing reservoirs could be used to meet a larger set of system objectives, such as increased water supplies to maintain instream flows and/or water temperatures downstream of the existing SWP and CVP reservoirs by using water from the proposed Project to meet beneficial uses currently met by the existing reservoirs. This type of effective additional storage would be able to provide a wide range of water resources benefits throughout the State, including increased water supply reliability for agricultural, environmental, municipal, and industrial uses; water quality maintenance and improvement; increased flexible hydropower generation; and improvement of aquatic and terrestrial ecosystems.

1.3 Sites Reservoir/NODOS Study and Funding Authorizations

As described in Section 1.2.1.1 of this chapter, the recent studies of the Sites Reservoir/NODOS Investigation were initially authorized in 1997 for the Integrated Storage Investigation through the CALFED Program which included State authorization for participation by DWR and federal authorization for participation by Reclamation. The initial phases of the Sites Reservoir/NODOS Investigation were conducted in coordination with several local entities, including GCID and TCCA, which are members of the SPA. Information from the Integrated Storage Investigation was used to inform preparation of the CALFED EIR/EIS and CALFED ROD (CALFED, 2000b, 2000c, respectively). The initial authorization for Reclamation participation in the Sites Reservoir/NODOS Project was through the Bay-Delta Framework Agreement in December 1994 that was signed by federal, State, and local agencies. The

initial authorizations and appropriations for DWR participation in the Sites Reservoir/NODOS Project was through the following actions.

- **Proposition 204. The Safe, Clean, Reliable Water Supply Act of 1996:** This act provided funding to DWR, without regard to fiscal year, for the feasibility and environmental investigations for several types of projects including offstream storage upstream of the Delta to provide storage and flood control benefits in an environmentally sensitive and cost-effective manner.

- **Budget Act, 1997 to 1998:** This act authorized DWR to continue feasibility and environmental studies pertaining to the Sites Reservoir and alternatives. As a result, DWR expanded the 1997 reconnaissance study to a broader investigation.

The CALFED ROD (CALFED, 2000c) directed DWR and Reclamation to: (1) complete additional environmental and planning documentation for the NODOS Project and (2) develop a joint planning program through a Memorandum of Understanding (MOU) with local water interests, counties, and State and federal agencies to carry out the NODOS Project. Following adoption of the CALFED ROD, additional federal and State authorizations and appropriations were implemented to continue the NODOS Project through the Sites Reservoir/NODOS Investigation, which includes this EIR/EIS and a feasibility report.

State of California authorities for the Sites Reservoir/NODOS Investigation following adoption of the CALFED ROD are summarized below:

- **Proposition 50. Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002:** This proposition provided $825 million for appropriation by the State Legislature for the balanced implementation of CALFED program expenditures and grants, including up to $50 million for surface water storage planning and feasibility studies.

- **Proposition 84. 2006 Safe Drinking Water Bond Act:** This proposition provided $65 million to DWR for planning and feasibility studies related to the existing and potential future needs for California's water supply, conveyance, and flood control systems. The studies are to be designed to promote integrated, multi-benefit approaches that maximize public benefits of the overall system including protection of the public from floods, water supply reliability, water quality, and fish, wildlife, and habitat protection and restoration.

Federal authorities for the Sites Reservoir/NODOS Investigation following adoption of the CALFED ROD are summarized below:

- **Public Law 108-7. Consolidated Appropriations Resolution, Sec. 215, 2003 and Public Law 108-137. Energy and Water Development Appropriations Act, Sec. 211, 2003:** These legislations provided authorization and appropriations to the Secretary of the Interior to perform CALFED-related activities, which could include feasibility studies for Sites Reservoir, Los Vaqueros Reservoir Enlargement, and Upper San Joaquin River Basin Storage projects. These storage studies were to be pursued along with ongoing environmental and other projects in a balanced manner.

- **Public Law 108-361. CALFED Bay-Delta Authorization Act (2004):** This legislation provided the following authorizations:

  - Approval of the CALFED ROD as general framework for addressing the CALFED Bay-Delta Program, including its components related to water storage, ecosystem restoration, water supply

reliability, conveyance, water-use efficiency, water quality, water transfers, watersheds, levee stability, governance, and science.

- Authorization for the Secretary of the Interior to carry out the activities set forth in the CALFED ROD, subject to environmental review and approval, as required under applicable federal and State law, and approved and certified by the relevant federal agency, following consultation and coordination with the Governor of California, to be consistent with the Section 103(b) of the CALFED ROD.

- Authorization for the Secretary of the Interior to conduct water storage planning and feasibility studies for the Sites Reservoir in Colusa County to the extent authorized under the reclamation laws, including the CVPIA, the Fish and Wildlife Coordination Act (16 U.S. Code [U.S.C.] 661 et seq.), the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), and other applicable laws.

The Sites Project Joint Powers Authority (JPA) was originally formed in August 2010 as a result of the adoption of SB 7X 2 as part of the 2009 Comprehensive Water Package. SB 7X 2 provided authorization for the formation of local joint powers authorities by irrigation districts and other local water districts and local governments within the applicable hydrologic region to design, acquire, and construct water infrastructure, ecosystem, and water supply reliability projects. SB 7X 2 also authorized sale of up to $11.14 billion in bonds to help fund those types of projects. The Sites JPA became a cost-share partner of the Sites Reservoir/NODOS Project when it requested and received State funding in 2011 to support development of this DEIR/EIS. The Sites JPA included the local water interests and counties.

Subsequently, the SPA was formed with membership of the County of Colusa; County of Glenn; the TCCA and member districts Orland-Artois Irrigation District, Westside Water District, and Colusa County Water District; GCID; Reclamation District 108; and Maxwell Irrigation District. The SPA is the CEQA lead agency, with DWR participating closely in the preparation of this EIR/EIS as a CEQA responsible agency. Reclamation is the NEPA lead agency.

1.4 CEQA and NEPA Requirements

Both CEQA and NEPA require governmental agencies to evaluate the environmental impacts of their proposed actions before making formal commitments to carry them out, and that such evaluation be done in detail, and with public involvement. CEQA is a California law and applies to State and local agencies, whereas NEPA is a federal law and applies to federal agencies. For the proposed Project, it was determined that an EIR should be prepared under CEQA, and an EIS should be prepared under NEPA.

Despite the similarities between the two laws, important differences exist. CEQA requires that State and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. As described in the *CEQA Guidelines* Section 15121(a), an EIR is a public informational document that assesses the potential environmental effects of the proposed project, as well as identifies mitigation measures and alternatives to the proposed project that could reduce or avoid adverse environmental impacts. CEQA requires that the lead agency (SPA) prepare an EIR if any "potentially significant impacts" are identified that could not be mitigated to a less-than-significant level.

The *CEQA Guidelines* identify several types of EIRs, each applicable to different project circumstances. This EIR was prepared as a Project EIR pursuant to *CEQA Guidelines* Section 15161 to the extent Project details and operations are currently known. This type of EIR focuses primarily on the changes in the environment

that would occur as a result of Project implementation, and examines all phases of a particular project (i.e., planning, construction, maintenance, and operation) to the extent they are known. This EIR/EIS discloses the known anticipated Project-level direct, indirect, and cumulative impacts of the alternatives, including a No Project/No Action Alternative. The CEQA requirement to determine a "significance threshold" for expected impacts presents an important or critical feature of the document. Thresholds of significance are developed using applicable regulations where they exist, or best professional judgment. CEQA requires agencies to implement feasible mitigation measures or feasible alternatives as a means of reducing the severity of significant environmental effects to a level of less than significant as identified in EIRs, and CEQA requires lead agencies to adopt a Mitigation Monitoring and Reporting Plan for changes to the Project that it has adopted to mitigate or avoid significant effects on the environment (*CEQA Guidelines* Section 15097). For those activities that have not yet been fully developed in detail, including the operation criteria for the proposed reservoir with respect to all potential end users, additional documentation would be developed in later planning phases or during the design phase as determined necessary if there is potential for additional significant environmental impacts not disclosed in this EIR/EIS to occur.

Pursuant to NEPA and the Council on Environmental Quality's (CEQ's) NEPA regulations, federal agencies are required to evaluate the environmental effects of an action, including feasible alternatives, and identify mitigation measures to minimize adverse effects when they propose to carry out, approve, or fund a project that may have a significant effect on the environment. Reasonable alternatives must be rigorously and objectively identified and evaluated (as opposed to CEQA's requirement that they be discussed in "meaningful detail"). Pursuant to NEPA, the evaluation of potential impacts must include socioeconomic impacts, whereas CEQA does not require such analysis unless changes to socioeconomic conditions result in changes to the environment. Although mitigation must be identified in NEPA documents, the NEPA lead agency determines the need and extent of specific mitigation measures. As discussed above under the CEQA discussion, for activities that have not yet been fully developed during the planning phase, additional NEPA documentation would be developed in later planning phases or during the design phase as determined necessary if there is potential for additional significant environmental impacts not disclosed in this EIR/EIS to occur.

The SPA and Reclamation have determined that this combined DEIS/EIR is the most appropriate and accessible means to comply with both CEQA and NEPA because of the complex nature of the proposed Project, need for coordination among federal and State agencies, the need to complete environmental review as expeditiously as possible, and to reduce unnecessary duplication of effort. This document satisfies the requirements of CEQA and NEPA for disclosing environmental impacts and identifying feasible alternatives, mitigation measures, and modifications to the Project that would reduce those impacts.

The alternatives discussed in this DEIR/EIS have been evaluated on an equal non-preferential basis and at an equal level of detail, according to NEPA standards. The Proposed Project/Preferred Alternative will be identified in the FEIR/EIS, with that selection to be informed through the CEQA and NEPA processes. Although a final Mitigation Monitoring Plan is not required to be included in a Draft EIR, a draft Mitigation Monitoring Plan has been prepared and included in this DEIR/EIS as Appendix 1A, and is circulated for public and agency review.

1.5 Purpose and Intended Use of this DEIR/EIS

The *CEQA Guidelines* Section 15124(d) requires that an EIR contain a statement briefly describing the intended uses of the EIR. The *CEQA Guidelines* indicate that the EIR should identify the ways in which the Lead Agency and any responsible agencies would use this document in their approval or permitting processes. The purpose of this DEIR/EIS is to present the process and overall findings of the Sites Reservoir/NODOS Investigation and identify potential significant adverse environmental impacts and related mitigation measures associated with implementing the proposed Project. The Sites Reservoir/ NODOS Investigation was performed to evaluate the feasibility and impacts of constructing a new water storage facility north-of-the-Delta to improve the flexibility of the SWP and CVP systems to ensure these systems can continue to meet the water supply, water quality, environmental, and energy needs of California.

The NEPA process, as defined by CEQ NEPA regulations (40 Code of Federal Regulations [CFR], Section 1508.21), requires a NEPA environmental document, including this EIS, to provide full disclosure of the potential effects of major actions proposed by federal agencies and accompanying alternatives. The process must include participation by other federal agencies, tribal and local agencies, and the concerned and affected public. Reclamation also has prepared the federal Draft Feasibility Report, published separately, which provides the existing conditions of the potentially affected geographical area, summary of preliminary geotechnical investigations, preliminary design considerations, preliminary cost estimates, and a comparison of preliminary annual benefits and costs. This DEIR/EIS, and the associated federal Draft Feasibility Report, is intended to be used by the SPA and Reclamation when considering approval of the proposed Project.

The EIR/EIS and Feasibility Report will be used by the SPA, Reclamation, DWR, NMFS, USFWS, and the California Department of Fish and Wildlife (CDFW) to support compliance with the federal ESA, the California Endangered Species Act (CESA), and the federal Fish and Wildlife Coordination Act. These documents also will provide needed information for USACE to evaluate the proposed Project as part of the issuance of permits under the Clean Water Act (CWA) Sections 408 and 404 and the related approvals by the Regional Water Quality Control Board (RWQCB) in accordance with CWA Section 401. These documents also will be used by USACE to evaluate the proposed Project as part of the issuance of permits under the Rivers and Harbors Act Section 10 permit. As discussed above, additional documentation may be developed as determined necessary if there is potential for additional significant environmental impacts not disclosed in this EIR/EIS to occur.

The EIR/EIS also will be used by other federal, State, and local agencies to inform their permitting and approval processes of the construction of the proposed Project, as described below.

1.5.1 Federal, State, Regional, and Local Requirements

In addition to the SPA and Reclamation, several federal, State, regional, and local agencies, as well as decision-making bodies, have jurisdiction over resources that could be affected by the proposed Project, or have other permitting or regulatory authority over certain aspects of the proposed Project. The EIR/EIS preparation also was coordinated with several tribes, including the Colusa Indian Community Council and Cortina Indian Rancheria.

These agencies and decision makers will review and consider the information contained in the FEIR/EIS for issuance of permits. Table 1-1 describes key permits, approvals, and authorizations that are anticipated for the Sites Reservoir/NODOS Project.

Table 1-1
Anticipated Permits, Approvals, and Authorizations for the Sites Reservoir/NODOS Project

Jurisdiction	Responsibility
Federal Agency Permits, Approvals, and Authorizations	
United States Department of the Interior, Bureau of Reclamation	• Prepare the EIS and issue the ROD as the representative NEPA lead agency for the Department of the Interior. The EIS must also comply with the following items: – Federal Water Pollution Control Act (Clean Water Act), Sections 303, 401, 402, and 404 – Rivers and Harbors Act, Sections 9 and 10 – Federal Safe Drinking Water Act – Wild and Scenic Rivers Act – Fish and Wildlife Coordination Act – Marine Mammal Protection Act – Migratory Bird Treaty Act – Federal Clean Air Act – National Historic Preservation Act of 1966, Sections 106 and 110 – American Indian Religious Freedom Act – Native American Graves Protection and Repatriation Act – Executive Order 13186 (protection of migratory birds) – Executive Order 11990 (protection of wetlands) – Executive Order 12898 (environmental justice) – Executive Order 11988 (floodplain management) – Executive Order 13007 (protection of Indian Sacred Sites on federal land) • Responsible for CVP operations, including modifications of those operations related to storage, conveyance, or delivery of CVP water supplies • Prepare and submit biological assessment to USFWS and NMFS for consideration of issuance of biological opinions to document that federal actions by Reclamation will not cause jeopardy to the federally listed special-status species or adverse modification of their designated critical habitat
United States Department of the Interior, USFWS	• Issue a biological opinion to Reclamation in accordance with Endangered Species Act Section 7 consultation and incidental take authorization • Determine compliance with the following legislation: – Fish and Wildlife Coordination Act – Bald and Golden Eagle Protection Act – Migratory Bird Treaty Act – Wild and Scenic Rivers Act – Marine Mammal Protection Act

Table 1-1
Anticipated Permits, Approvals, and Authorizations for the Sites Reservoir/NODOS Project

Jurisdiction	Responsibility
United States Department of the Interior, Bureau of Indian Affairs	• Responsible for coordination with federally recognized tribes and protection of Indian Trust Assets • Coordinate compliance with – National Historic Preservation Act of 1966, Sections 106 and 110 – American Indian Religious Freedom Act – Native American Graves Protection and Repatriation Act – Executive Order 13007 (protection of Indian Sacred Sites on federal land)
Federal Energy Regulating Commission	• Responsible for operational changes to existing hydroelectric facilities may necessitate a license amendment from FERC
National Oceanic and Atmospheric Administration, National Marine Fisheries Services	• Issue a biological opinion to Reclamation in accordance with Endangered Species Act Section 7 consultation and incidental take authorization • Determine compliance with the following legislation: – Fish and Wildlife Coordination Act – Magnuson-Stevens Fishery Conservation and Management Act
United States Department of Agriculture, Natural Resources Conservation Service	• Determine compliance with the Farmland Protection Policy Act
United States Army Corps of Engineers	• Issue permits and approvals related to the following legislation and Executive Order: – Rivers and Harbors Act Section 9 (construction of dikes) and Section 10 (alteration of navigable waters) – Clean Water Act Section 404 (discharge of dredge or fill material) permitting and associated Section 401 water quality certification; Section 408 (levee modification) permitting – Emergency Flood Control Fund Act of 1955 – Executive Order 11988 (floodplain management) – Executive Order 11990 (protection of wetlands)
United States Department of Justice, Civil Rights Division	• Americans with Disabilities Act compliance
United States Environmental Protection Agency	• Provide compliance with the following legislation through agreements with the State of California to implement these requirements through CalEPA: – SPCCP developed in accordance with 40 CFR 112 – Clean Air Act and State Implementation Plan, including the NAAQS – Safe Drinking Water Act
United States Department of Energy, Western Area Power Administration	• Responsible for marketing and transmitting wholesale electricity from multi-use water projects operated by Reclamation and USACE in 15 states in the central and western United States, and sale of power to preference power customers, including federal, State, and local agencies and tribes

Table 1-1
Anticipated Permits, Approvals, and Authorizations for the Sites Reservoir/NODOS Project

Jurisdiction	Responsibility
State Agency Permits, Approvals, and Authorizations	
California Air Resources Board	• Administer the air quality policy to achieve the California Ambient Air Quality Standards (including the NAAQS for USEPA) and State Air Quality Designations
California Department of Boating and Waterways	• California Harbors and Navigation Code compliance
California Department of Conservation	• Designate Important Farmland in the State under the Farmland Mapping and Monitoring Program
California Department of Fish and Wildlife	• Lake and Streambed Alteration Agreement permitting (pursuant to Section 1602 of the California Fish and Game Code) • Compliance with Fish and Game Code related to fully protected species, birds of prey, native plant protection, invasive species, sufficient fisheries flows below dams, fish screening, and asphalt removal • California Endangered Species Act consultation and incidental take authorization (Section 2081) • California Native Plant Protection Act • Salmon, Steelhead Trout, and Anadromous Fisheries Program Act • Marine Invasive Species Act
California Department of Toxic Substances Control	• Compliance with generation, transportation, treatment, storage, and disposal of hazardous waste regulations
California Department of Transportation	• Issuance of an encroachment and transportation permits within the State Highway system and in coordination with the Federal Highway Administration for federal highways • Approval of transportation management plans
California Department of Water Resources	• Prepare the California Water Plan Update to identify water resources issues and plans to minimize the issues • Responsible for SWP operations, including modifications of those operations related to storage, conveyance, or delivery of CVP water supplies • Work with Central Valley Flood Protection Board and USACE to implement floodplain regulations
California Energy Commission	• Implement State energy policies
California Independent System Operator	• Manage the flow of electricity across high-voltage, long-distance power transmission lines in most of California
California Office of Historic Preservation	• Coordinate with implementation of the California Register of Historical Resources under CEQA • Coordinate with federal agencies implementation of National Historic Preservation Act Section 106 consultation
California State Lands Commission	• Issue leases for work in areas under CSLC jurisdiction (e.g., along Sacramento River)
California State Water Resources Control Board	• Issue water rights • Administer Clean Water Act for USEPA in coordination with CVRWQCB

Table 1-1
Anticipated Permits, Approvals, and Authorizations for the Sites Reservoir/NODOS Project

Jurisdiction	Responsibility
Central Valley Regional Water Quality Control Board	• Clean Water Act Section 401 certification Clean Water Act Section 402 NPDES permitting (including requirements for construction SWPPP)
California Water Commission	• Responsible for quantification of public benefits of water storage projects
Central Valley Flood Protection Board	• Responsible for controlling flooding along the Sacramento and San Joaquin rivers and their tributaries in cooperation with USACE • Maintain the integrity of existing flood control system and designated floodways through it regulatory authority by issuing permits for encroachments
Delta Stewardship Council	• Delta Plan consistency for covered actions that occur in whole or in part in the statutory Delta and/or Suisun Marsh, including some water transfers through the Delta
Native American Heritage Commission	• Identify sacred sites and Most Likely Descendants for Native American burials and provision of Native American contact information
Regional and Local Agency Permits, Approvals, and Authorizations	
Colusa, Glenn, and Tehama Counties	
– Planning Departments	• Issuance of Conditional Use Permit • Rezoning of parcels in both counties • Conformance with State SMARA permitting or exemption if borrow is required from borrow site(s) not previously permitted under SMARA • Conformance with CEQA environmental review requirements
– Engineering and Surveying Services Departments	• Plan approval for any county road or bridge crossings at creeks or grading for structures within 50 feet from the top of creek banks; grading and drainage plan; and grading permit • Erosion control plan development and permitting • Building and electrical permitting • Development of blasting plan for foundation and roadway installation
– Environmental Health Services Departments	• Septic and water system permitting, including well installations
– Roads Departments	• Encroachment permitting • Construction traffic control plan development for county roads • Assessment of fees for increases in peak-hour trips, if required • Heavy haul permitting • Roadway damage and repair bonds
– Fire Departments	• Annual permitting for the use and storage of hazardous and flammable materials/wastes • Hazardous materials business plan development • Fire protection plan development
Colusa County APCD and Glenn County APCD	• Administer local air quality plans and coordinate with the California Air Resources Board

Table 1-1
Anticipated Permits, Approvals, and Authorizations for the Sites Reservoir/NODOS Project

Jurisdiction	Responsibility

Key:
APCD = Air Pollution Control District
CalEPA = California Environmental Protection Agency
CFR = Code of Federal Regulations
CSLC = California State Lands Commission
CVRWQCB = Central Valley Regional Water Quality Control Board
EIS = environmental impact statement
FERC = Federal Energy Regulating Commission
NAAQS = National Ambient Air Quality Standard
NMFS = National Marine Fisheries Services
NPDES = National Pollutant Discharge Elimination System
Reclamation = Bureau of Reclamation
SMARA = Surface Mining and Reclamation Act
SPCCP = spill prevention control and countermeasure plan
SWPPP = stormwater pollution prevention plan
USACE = U.S. Army Corps of Engineers
USEPA = U.S. Environmental Protection Agency
USFWS = U.S. Fish and Wildlife Service

All federal, State, regional, and local regulations and policies that were considered during impact evaluations for each of the resource chapters, or that will be used for decision making for the proposed Project, are detailed in Chapter 4 Environmental Compliance and Permit Summary of this DEIR/EIS.

1.6 Notice of Preparation and Notice of Intent

DWR filed a Notice of Preparation (NOP) with the State Clearinghouse on November 5, 2001, and Reclamation published a Notice of Intent (NOI) in the *Federal Register* on November 9, 2001, to announce the intent to prepare a joint EIR/EIS for the proposed Project. The NOP/NOI notified the public of the Project proposal, announced the dates and locations of public meetings, and solicited public comments to help guide development of the EIR/EIS, pursuant to CEQA and NEPA, respectively. The NOP/NOI identified the No Project/No Action Alternative and several alternatives for analysis, including Sites Reservoir and Newville Reservoir. The NOP/NOI also identified other potential alternatives, including conjunctive use and Shasta Lake enlargement, either as stand-alone projects or in conjunction with other NODOS Project alternatives to meet the NODOS Project objectives and purpose and need. As further described in Chapter 2 Alternatives Analysis, the date of the NOP/NOI was used to form the baseline for the CEQA existing conditions and the basis for identification of "existing policy and management" conditions, which are used in defining the NEPA No Action Alternative, including incorporating key regulatory requirements (e.g., 2008 USFWS and 2009 NMFS biological opinions) that influence operations and the potential for impacts that have been developed and implemented since the issuance of the NOP/NOI.

Since the issuance of the NOP by DWR, the SPA has elected to assume the role of lead agency under CEQA given the strong local interest in the Project, with DWR assuming the role of a responsible agency. This change in roles was also formally documented with the California Office of Planning and Research State Clearinghouse by letter on _____.

1.7 Proposed Project/Proposed Action Concept

The proposed Project would consist of a new offstream storage reservoir with two main dams, up to nine saddle dams, and up to three recreation areas. The reservoir would have an associated inlet/outlet structure and would be connected to the Sacramento River by two existing screened diversions and associated canals (TCCA and GCID facilities), as well as a new screened diversion and associated pipeline (Delevan Pipeline). Water conveyance between the reservoir and the canals and pipeline would be facilitated by two new regulating reservoirs and their associated pumping/generating plants. A new transmission line would connect the pumping/generating plants and their associated electrical switchyards to an existing transmission line in the proposed Project area. New roads and a bridge would be constructed to provide access to the proposed Project facilities and over the proposed reservoir, and some existing roads would be relocated or improved. The proposed Project would require modifications to an existing canal and pumping plant. A more complete description of the proposed Project can be found in Chapter 3 Description of Proposed Project/Proposed Action and Alternatives. The proposed Project would be operated generally in the following manner (Figure 1-3) to achieve Project objectives and the Project purpose:

- Excess runoff from tributaries entering the Sacramento River downstream of Keswick Dam, and Shasta Lake releases for flood management operations, would be diverted to one or all of the following facilities depending on conditions and water availability: the existing Red Bluff Pumping Plant (and then to the T-C Canal), existing GCID Pumping Plant (and then to the GCID Canal), and/or to the proposed Delevan Pipeline Intake (and Delevan Pipeline).
- Water from the screened T-C Canal and diversion would be diverted/stored in the proposed Holthouse Reservoir Complex and conveyed to the proposed Sites Reservoir, whenever possible, until Sites Reservoir is filled.
- Water from the screened GCID Canal and diversion would be diverted/stored/pumped in the proposed Terminal Regulating Reservoir and conveyed to the proposed Sites Reservoir, whenever possible, until Sites Reservoir is filled.
- Water from the proposed screened Delevan Pipeline Intake would be diverted/stored/pumped in the pumping plant and forebay, and would be conveyed to the proposed Holthouse Reservoir, and to the proposed Sites Reservoir, whenever possible, until Sites Reservoir is filled.
- Water would be released from the proposed Sites and Holthouse reservoirs via the proposed Delevan Pipeline and its associated intake/discharge facilities to the Sacramento River, and electricity would be generated for action alternatives that have a pumping/generating plant at the proposed Delevan Pipeline Intake Facilities.
- Water would be released from the proposed Sites and Holthouse reservoirs to the T-C Canal for diversion to water users, and electricity would be generated.
- Water would be released from the proposed Sites and Holthouse reservoirs to the proposed Terminal Regulating Reservoir and the GCID Canal for diversion to downstream water users, and electricity would be generated.
- Because water would be diverted from the Sacramento River through fish screens to the proposed Sites Reservoir, and releases would be made from the proposed Sites Reservoir back to the Sacramento River and to T-C Canal and GCID Canal water users, operations of existing SWP and

CVP facilities throughout California could be modified to improve flow and water quality conditions for the benefit of anadromous and endemic fish populations; municipal, industrial, and agricultural water users; and wildlife refuges.

The SPA and Reclamation developed five action alternatives to meet the primary objectives of the proposed Project. The process that was used to develop the alternatives is described in Chapter 2 Alternatives Analysis. Maps and detailed descriptions of the five action alternatives are provided in Chapter 3 Description of the Proposed Project/Proposed Action and Alternatives.

1.8 Proposed Project/Proposed Action Location

The proposed Sites Reservoir would be located in Antelope Valley, approximately 10 miles west of the town of Maxwell, in both Glenn and Colusa counties. Other proposed Project facilities would be located in Tehama, Glenn, or Colusa counties (Figure 1-4).

1.9 Study Areas

The proposed Project has the potential to influence SWP and CVP system operations and water deliveries over a large geographic area. To effectively evaluate the effects of the proposed Project's five action alternatives on environmental resources in different geographic regions, the SPA and Reclamation identified three study areas to be evaluated in this DEIR/EIS: the Extended, Secondary, and Primary study areas.

The Extended Study Area, consisting of the SWP and CVP service areas, is the largest and most diverse of the three study areas in terms of size, geography, land use, and habitat conditions. As such, it has been described and evaluated in the resource chapters of this document (Chapters 6 through 31) at the lowest level of detail. The Secondary Study Area is smaller than the Extended Study Area and consists of the SWP and CVP facilities that could be affected by proposed Project operations; this study area has been described and evaluated in the resource chapters in more detail than for the Extended Study Area. The Primary Study Area includes the proposed Project facilities and the land immediately surrounding them that would be included in the proposed Project boundary (referred to in this document as the Project Buffer); as such, this study area is the focus of the resource evaluations in this DEIR/EIS. These three study areas are described in more detail below and are shown on Figure 1-5.

1.9.1 Extended Study Area

The Extended Study Area includes the entire service areas of the SWP and CVP. These two service areas are located within all or portions of the following 39 counties: Alameda, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Imperial, Kern, Kings, Los Angeles, Madera, Merced, Monterey, Napa, Nevada, Orange, Placer, Plumas, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Ventura, and Yolo. The proposed Project's purpose of improved water supply reliability has the potential for long-term direct and indirect effects within these two service areas. The Extended Study Area would also include wildlife refuges that could receive Level 4 water supply from the proposed Project. Those wildlife refuges, which are located within seven counties in the Extended Study Area, are shown on Figure 1-6.

1.9.2 Secondary Study Area

The Secondary Study Area is defined as the area of potential operational effects, including SWP and CVP facilities that could experience water surface elevation fluctuations or stream flow changes. Those facilities are located within the following 22 counties: Alameda, Butte, Colusa, Contra Costa, Del Norte, El Dorado, Glenn, Humboldt, Marin, Placer, Sacramento, San Francisco, San Mateo, Santa Clara, Shasta, Solano, Sonoma, Sutter, Tehama, Trinity, Yolo, and Yuba.

Operational changes could occur as a result of the coordinated and integrated operation of the proposed Project's facilities with those State and federal projects located on the American River, Trinity River, Sacramento River, Clear Creek, Spring Creek, Feather River, and the Delta. The Secondary Study Area is shown on Figure 1-7.

1.9.3 Primary Study Area

The Primary Study Area is defined as the areas within Glenn and Colusa counties where short-term and long-term direct effects from constructing, operating, and/or maintaining proposed Project facilities may occur. This study area includes the "footprints" of the proposed Sites Reservoir Inundation Area and other proposed facilities (e.g., dams, intakes/discharge facilities, fish screens, pipelines, transmission line, pumping/generating plants, recreation areas, road relocation areas, borrow areas, and associated facilities). It also includes the construction disturbance areas, i.e., the footprint of each proposed facility plus the area around each facility that would be disturbed over the short-term by Project-related construction activities, vehicles, and equipment. The Primary Study Area also includes the land parcels that surround those Project facilities; these parcels would be purchased but not developed for the proposed Project and are referred to as the "Project Buffer".

The SPA and Reclamation have developed five action alternatives (Alternatives A, B, C, C_1, and D which are described in Chapter 2 Alternatives Analysis) to meet the purpose, need, and objectives of the proposed Project. There are differences in the facilities associated with the five alternatives; therefore, the Primary Study Areas for the five alternatives also differ. The Primary Study Areas associated with Alternatives A, B, C, C_1, and D are shown on Figures 1-8A, 1-8B, 1-8C, 1-$8C_1$, and 1-8D, respectively. Detailed descriptions of each proposed Project facility are provided in Chapter 3 Description of the Proposed Project/Proposed Action and Alternatives.

1.10 Areas of Controversy/Issues to be Resolved

The following areas of controversy and issues to be resolved have been identified to date through stakeholder meetings or during the preparation of this DEIR/EIS:

- **Impacts on Terrestrial Biological Resources:** Golden eagles have been identified as foraging within the proposed Sites Reservoir Inundation Area and nesting within the proposed recreation areas. USFWS has expressed concern about the potential loss of nesting and foraging habitat for golden eagles, which are protected by the Bald and Golden Eagle Protection Act.
- **Impacts on Project Area Property Owners:** Project development would require the demolition of existing structures, acquisition of private property, and relocation of displaced parties. These actions concern property owners within the Primary Study Area.

1.11 Public Review of the Draft EIR/EIS

This DEIR/EIS was circulated to local, State, and federal agencies**,** as well as to interested organizations and individuals who may wish to review and comment on it. The DEIR/EIS and a Notice of Completion (NOC) was filed with the Office of Planning and Research, State Clearinghouse in compliance with CEQA. Reclamation published a Notice of Availability of this DEIR/EIS in the *Federal Register* in compliance with NEPA. Notices were published in XX newspapers indicating the availability of this DEIR/EIS for public comments. This DEIR/EIS was circulated for a review period of 90 days following the publication of the Notice of Completion and *Federal Register* notice. During this review period, written comments may be submitted to the SPA and Reclamation representatives listed in Section 1.1 of this chapter.

Comments received in response to the DEIR/EIS will be addressed in a Response to Comments chapter which together with the revised DEIR/EIS text, will constitute the FEIR/EIS under CEQA and NEPA.

In accordance with CEQA, the SPA will provide a written proposed response to each public agency on comments made by that agency at least 10 days prior to certifying the EIR. The SPA will then review the proposed Project, the EIR, and the public testimony submitted on this DEIR and FEIR, and decide whether to certify the EIR and adopt any findings and statements of overriding significance before deciding whether to approve or deny the proposed Project. If the EIR is certified and a Project is approved, the SPA will file a Notice of Determination (NOD) with the Governor's Office of Planning and Research, State Clearinghouse within 5 days of Project approval. This filing will trigger a 30-day period in which a legal challenge to the document may be filed.

In accordance with NEPA, Reclamation will provide a written proposed response to each cooperating agency on comments made by that agency at least 30 days prior to publication of the FEIS. Upon completion of the FEIS, Reclamation will publish a Notice of Availability in the *Federal Register*. At least 30 days following publication of the FEIS, Reclamation will consider comments on the FEIS and issue a ROD for the proposed Project. The ROD also would be published in the *Federal Register*.

1.12 Organization of the DEIR/EIS

This DEIR/EIS includes the following chapters:

- **Executive Summary:** This chapter provides a summary of the Project description, a description of issues to be resolved and areas of controversy, the significant environmental impacts that would result from implementation of the alternatives, and mitigation proposed to reduce or eliminate those impacts.
- **Chapter 1 Introduction:** This chapter describes the purpose, need, objectives, authorization, location of the alternatives being evaluated, and the three study areas; provides an overview of the environmental review process and background for the proposed Project; summarizes the intended use of the EIR/EIS, and lists the areas of controversy and issues to be resolved.
- **Chapter 2 Alternatives Analysis:** This chapter describes the approach used to develop the action alternatives that are evaluated in this DEIR/EIS, including a discussion of the evaluation of alternative reservoir locations, reservoir sizes, and conveyance alternatives. It also describes Existing Conditions and the No Project/No Action Alternative.

- **Chapter 3 Description of Proposed Project/Proposed Action and Alternatives:** This chapter describes in detail the proposed Project facilities included in the action alternatives (Alternatives A, B, C, C_1, and D), and describes Project operation for each of the action alternatives.
- **Chapter 4 Environmental Compliance and Permit Summary:** This chapter presents the regulatory framework for the resources chapters (Chapters 6 through 31).
- **Chapter 5 Guide to Resources Analysis:** This chapter describes the process used to develop the environmental setting (i.e., affected environment) and evaluate the environmental impacts (i.e., environmental consequences) of implementing the alternatives, defines types of impacts and levels of significance, describes mitigation measure development and eliminated topics, and summarizes the modeling tools and analytical methods that were used for each resource analysis.
- **Chapters 6 through 31 Resource Chapter Evaluations:** These chapters include descriptions of the environmental setting (i.e., affected environment), contain assessments of the potential impacts of each of five alternatives within each of three study areas, and list mitigation measures for identified significant and potentially significant impacts, where appropriate, for the following resources:
  - Surface Water Resources
  - Surface Water Quality
  - Fluvial Geomorphology and Riparian Habitat
  - Flood Control and Management
  - Groundwater Resources
  - Groundwater Quality
  - Aquatic Biological Resources
  - Botanical Resources
  - Terrestrial Biological Resources
  - Wetlands and Other Waters of the U.S.
  - Geology, Minerals, Soils, and Paleontology
  - Faults and Seismicity
  - Cultural Resources
  - Indian Trust Assets
  - Land Use
  - Recreation Resources
  - Socioeconomics
  - Environmental Justice
  - Air Quality
  - Climate Change and Greenhouse Gas Emissions
  - Navigation, Transportation, and Traffic
  - Noise
  - Public Health and Environmental Hazards
  - Public Services and Utilities
  - Visual Resources
  - Power Production and Energy
- **Chapter 32 Short-term Uses vs. Long-term Productivity:** This chapter describes the short-term uses vs. long-term productivity of the proposed Project.

- **Chapter 33 Irreversible or Irretrievable Commitments of Resources**: This chapter describes the irreversible or irretrievable commitments of resources associated with the proposed Project.
- **Chapter 34 Growth-Inducing Impacts**: This chapter describes the growth-inducing impacts associated with the proposed Project.
- **Chapter 35 Cumulative Impacts**: This chapter describes the cumulative impacts of the proposed Project.
- **Chapter 36 Consultation and Coordination:** This chapter describes the public scoping process and the agencies and organizations that have been consulted throughout the process of the Sites Reservoir/NODOS Investigation.
- **Chapter 37 References:** This chapter lists the sources of information used to prepare the DEIR/EIS. All references are listed by the chapter in which they were cited.
- **Chapter 38 List of Preparers and Contributors:** This chapter lists the individuals who participated in the preparation of this DEIR/EIS, and provides the qualifications for those individuals, in order of organization and agency.
- **Chapter 39 EIR/EIS Distribution List:** This chapter lists the elected officials; governmental departments; federal, tribal, State, and local agencies; special interest groups; and individuals who received notice of availability of this DEIR/EIS.
- **Appendixes:** The appendixes are located at the back of this DEIR/EIS and are listed in the Table of Contents

1.13 Preparers of the DEIR/EIS

This DEIR/EIS has been prepared by a multi-disciplinary team at the direction of the two lead agencies: the SPA and Reclamation. Additionally, the lead agencies have actively solicited input and review from responsible agencies and cooperating agencies, including DWR, CDFW, SWRCB, CVRWQCB, Colusa Indian Community Council, Cortina Indian Rancheria, USFWS, NMFS, Western Area Power Administration (WAPA), USACE, and Bureau of Indian Affairs, described in Chapter 36 Consultation and Coordination. Throughout the DEIR/EIS preparation process, input has been solicited and considered from affected parties and agencies, including local governments, interest groups, and individuals. Chapter 38 List of Preparers and Contributors provides a comprehensive list of the individuals involved in the preparation of the DEIR/EIS, and Chapter 39 EIR/EIS Distribution List provides a list of parties that requested to be involved in the proposed Project in some manner.

1.14 References

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