

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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1 California initiated a comprehensive water plan for the State more than 100 years ago to provide water
2 conservation, flood control, water storage, and water distribution. In 1933, the California Legislature,
3 Governor, and electorate approved construction of the Central Valley Project (CVP). Because of
4 difficulty in marketing bonds to finance construction, the project could not be constructed by the State,
5 and the federal government was requested to construct the CVP. The first federal authorization of the
6 CVP was by the Rivers and Harbors Act of August 30, 1935. The CVP was reauthorized for construction,
7 operation, and maintenance by the Secretary of the Department of the Interior (Secretary), pursuant to the
8 Reclamation Act of 1902, as amended and supplemented by the Rivers and Harbors Act of August 26,
9 1937. The 1937 act also provided that the dams and reservoirs of the CVP "... be used, first, for river
10 regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses; and,
11 third, for power." In 1992, the Central Valley Project Authorization Act of August 26, 1937, was
12 amended by Section 3406(a) of the Central Valley Project Improvement Act (CVPIA), Public Law 102-
13 575. The CVPIA modified the 1937 act and specified that the dams and reservoirs of the CVP be used
14 "first, for river regulation, improvement of navigation, and flood control; second for irrigation and
15 domestic uses and fish and wildlife mitigation, protection and restoration purposes; and third for power
16 and fish and wildlife enhancement." The CVP is composed of more than 18 reservoirs with a combined
17 storage capacity of more than 11 million acre-feet (MAF), more than 10 hydroelectric power plants, and
18 more than 500 miles of major canals and aqueducts. Several of the CVP reservoirs (e.g., Shasta Lake and
19 Keswick Reservoir) regulate flows in the Sacramento River upstream of the proposed Project. The CVP
20 Red Bluff Pumping Plant, which diverts water from the Sacramento River into the CVP Tehama-Colusa
21 (T-C) Canal, could be used to convey water in the proposed Project. The CVP facilities are generally
22 operated as an integrated project, although they are authorized and categorized in more distinct units or
23 divisions; and not all facilities are operated to meet each of the above-identified Project purposes. The
24 Reclamation contact person for the proposed Project is as follows:

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

40 **1.2 Project Objectives and Purpose and Need**

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

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

3 **1.2.1 Overview of Issues, Needs, and Opportunities**

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

9 **1.2.1.1 Previous Studies of Reservoirs in the Western Sacramento Valley**

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

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

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

1 The 1975 progress report prepared by DWR and the 1978 DWR Bulletin No. 76 evaluated several
2 offstream reservoirs in the western foothills to provide additional water supplies to the State Water
3 Project (SWP) and CVP as well as local flood control, irrigation water supplies, recreation, and fish
4 enhancement benefits (CALFED Bay-Delta Program [CALFED], 2000a; DWR, 1978). The 1975 report
5 and Bulletin No. 76 recommended construction of the 8.7-MAF Glenn Reservoir with the 435-foot
6 Rancheria Dam on Stony Creek and the 387-foot Newville Dam on North Fork Stony Creek. Water
7 would be diverted from the Sacramento River at the upstream end of the T-C Canal and from Thomes
8 Creek near Paskenta with integrated storage at the existing Black Butte Reservoir. As an alternative to
9 Glenn Reservoir, the 1975 report and Bulletin No. 76 also considered the 3.2-MAF Colusa Reservoir with
10 160- to 295-foot dams on Willow, Logan, Hunters, Funks, and Stone Corral creeks. Water would be
11 diverted from the Sacramento River and conveyed to the reservoir in the existing GCID and TCCA
12 canals. Bulletin No. 76 also recommended using storage in the USACE-proposed Cottonwood Project,
13 which would include the 1.1-MAF Dutch Gulch Reservoir and the 900,000-acre-foot Tehama Reservoir
14 on Cottonwood Creek. Development of projects similar to Newville and Sites reservoirs also were
15 analyzed by GCID in 1980 and Colusa Basin Drainage District in 1995.

16 Federal, State, and local agencies signed the Bay-Delta Framework Agreement in December 1994, which
17 led to the adoption of the Bay-Delta Accord and initiation of the CALFED Program in 1995 (CALFED,
18 2000b). As described below, the CALFED Program initiated the evaluation of expanded surface water
19 storage in the Sacramento Valley as part of a long-term comprehensive plan to restore the ecological
20 health and improve water management to protect beneficial uses in the Delta and the Delta watershed.
21 Recommendations in the Final EIR/EIS (FEIR/EIS) for CALFED included actions to increase reservoir
22 storage in the Sacramento Valley upstream of the Delta through expansion of Shasta Lake and potential
23 implementation of Sites Reservoir following additional studies.

24 In 2014, the Governor of California issued the California Water Action Plan as a 5-year roadmap for a
25 comprehensive and practical approach to water resources management in California (California Natural
26 Resources Agency [CNRA] et al., 2015). The 2015 *California Water Action Plan Implementation Plan*
27 *2014-2018*, described actions conducted in 2014 under the California Water Action Plan and activities to
28 be completed by 2018 under the 10 major actions in the plan. One of the major actions (Action 6) was to
29 “Expand Water Storage Capacity and Improve Groundwater Management,” including use of funds
30 provided by Proposition 1 to expand and/or improve use of existing storage capacity.

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

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

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

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

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

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

26 Preliminary results from the Integrated Storage Investigation were used to inform the analysis of
27 12 potential surface water reservoir sites and several groundwater storage locations, including Sites
28 Reservoir, in the CALFED EIR/EIS. The range of alternatives considered and the results of the screening
29 analysis conducted in the CALFED EIR/EIS are summarized in Chapter 2 Alternatives Analysis and
30 Appendix 2A Screening of Range of Surface Water Storage Alternatives. The Final CALFED EIR/EIS
31 and the CALFED Record of Decision (ROD) (CALFED, 2000c) recommended that DWR, Reclamation,
32 and other CALFED agencies conduct detailed analyses of the expansion of the CVP Shasta Lake and
33 Contra Costa Water District Los Vaqueros Reservoir, implementation of the In-Delta Storage Program,
34 and implementation of 500,000 to 1.0 MAF of groundwater storage. The ROD also recommended
35 additional studies for the NODOS Investigation and the Upper San Joaquin River Basin Storage
36 Investigation to provide additional engineering and environmental analyses as well as development of
37 fund-sharing agreements. The CALFED ROD indicated that the NODOS Project could enhance water
38 management flexibility and water supply reliability in the Sacramento Valley, improve fish survival, and
39 improve water quality. The Project objectives and purpose and need items support opportunities to
40 address these issues identified in previous studies, including in the CALFED EIR/EIS and the CALFED
41 ROD. While these studies and investigations form the basis for the screening of alternatives (see
42 Appendix 2A) to those evaluated in this document, this EIR/EIS does not tier from the CALFED
43 EIR/EIS.

1 **1.2.1.2 Project Objectives, Purpose and Need, and Opportunities**

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

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

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

12 Secondary objectives for the proposed Project were identified as:

- 13 • Develop additional recreation opportunities.
- 14 • Provide incremental flood damage reduction opportunities.
- 15 • Develop operational flexibility.

16 **Water Supply Reliability for Agricultural, Urban, and Environmental Uses**

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

- 30 • Water supply reliability requires the delivery of specified amounts of water at predictable locations
31 and times. A review of DWR's SWP Delivery Reliability Reports since 2002 as well as CVP water
32 availability and ability to meet contracted amounts indicates declining SWP and CVP water supply
33 reliability. For example, long-term average SWP delivery reliability under Schedule A water
34 deliveries declined from 76 percent in 2002 to 62 percent in 2015 (DWR, 2002,2015), or a reduction
35 of 580,000 acre-feet/year. The long-term average CVP delivery (including deliveries to water rights
36 holders, settlement water contractors, and exchange water contractors) was projected as 60 percent in
37 2000 and 49 percent in 2015, or a reduction of 1,110,000 acre-feet (Reclamation, 1999,2015).
- 38 • During prolonged recent droughts (such as 1987 to 1992, 2007 to 2009, and 2012 to 2016) or multiple
39 dry years, water in storage is reduced and water supplies are less reliable. This reliability for

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

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

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

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

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

22 **Survival of Anadromous and Endemic Fish Populations**

23 Populations of anadromous and endemic fish species within the Sacramento Valley river system and Bay-
24 Delta are declining. The National Marine Fisheries Service (NMFS) 2009 biological opinion for the long-
25 term coordinated operation of the CVP and SWP found that the anadromous fish species declines appear
26 to be related to implementation of dams and physical barriers to historic upstream habitat; habitat
27 degradation in the rivers and the Delta including reduced instream flows, increased water temperatures,
28 and poor water quality; and predation from introduced species (NMFS, 2009). Additional potential causes
29 of fish species declines in the Bay-Delta have been identified by the Interagency Ecological Program,
30 including a combination of reduced habitat suitability (such as changing salinity), reduced food sources,
31 entrainment, invasive species, predation, and toxins and other water quality degradation (Baxter et al.,
32 2010). Existing onstream dams block many of the native anadromous species from their historic spawning
33 areas, which include stream segments with stream beds to optimize spawning and rearing of salmonids
34 and cold water through the summer months due to snowmelt. Stream segments downstream of the dams
35 are not as optimized for large-scale spawning and rearing as in the upper watersheds, and water
36 temperatures in the foothills and valley floor are warmer than in the upper watersheds. Cold water
37 releases assist in supporting spawning and rearing habitat, but available water is limited in many years
38 due to limited storage volumes and/or climatic conditions.

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

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

5 **Water Quality**

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

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

20 **Flexible Hydropower Generation**

21 California Governor Brown's *Clean Energy Jobs Plan* issued in 2011 included a goal to add
 22 8,000 megawatts (MW) of large-scale renewable generation (greater than 20 MW) by 2020 (California
 23 Energy Commission, 2015). As of 2014, large-scale renewable generation capacity increased by
 24 7,700 MW. Overall increased use of renewable energy would result in reduction in greenhouse gases in
 25 accordance with federal and State laws.

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

39 **Additional Recreation Opportunities**

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

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

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

3 **Incremental Flood Damage Reduction**

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

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

15 **Operational Flexibility**

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

22 California's water management challenges include climate change response management, declining
 23 ecosystems, diminishing water quality, and aging infrastructure (DWR, 2013). An example of the loss of
 24 operational flexibility in the State's water systems is the declining trend of end-of-water-year storage in
 25 September. Shasta Lake is California's largest reservoir and the largest storage facility of the CVP. The
 26 water stored in Shasta Lake represents approximately 41 percent of the total storage capacity of the CVP
 27 (Reclamation, 2013). Lake Oroville is the State's second largest reservoir and keystone of the SWP.
 28 Figure 1-1 shows the trend in Shasta Lake end-of-water-year storage (i.e. water in storage) from 1953 to
 29 2012. Figure 1-2 shows the trend in Lake Oroville end-of-water-year storage from 1968 to 2012. The
 30 trend of long-term average end-of-water-year storage is diminishing, from over 3 million acre-feet to
 31 under 2.5 million acre-feet at Shasta Lake, and from 2.4 million acre-feet to approximately 1.8 million
 32 acre-feet at Lake Oroville. Generally, there is less water in storage at the beginning of each water year
 33 (i.e. end of September) than has been available over the history of either reservoir. There are likely many
 34 reasons for these trends¹. However, consideration of the operational changes over time associated with
 35 the State's two largest water systems is helpful to understand these trends. When the CVP and SWP were
 36 first constructed, the systems had operational flexibility. Deliveries and regulatory requirements were
 37 less; both have increased over time, and system operational flexibility has declined.

38 Federal and State reservoirs are being required to serve more purposes than they have historically. Due to
 39 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.

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

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

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

35 **1.3 Sites Reservoir/NODOS Study and Funding Authorizations**

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

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

- 3 • **Proposition 204. The Safe, Clean, Reliable Water Supply Act of 1996:** This act provided funding
4 to DWR, without regard to fiscal year, for the feasibility and environmental investigations for several
5 types of projects including offstream storage upstream of the Delta to provide storage and flood
6 control benefits in an environmentally sensitive and cost-effective manner.
- 7 • **Budget Act, 1997 to 1998:** This act authorized DWR to continue feasibility and environmental
8 studies pertaining to the Sites Reservoir and alternatives. As a result, DWR expanded the
9 1997 reconnaissance study to a broader investigation.

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

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

- 19 • **Proposition 50. Water Security, Clean Drinking Water, Coastal and Beach Protection Act of**
20 **2002:** This proposition provided \$825 million for appropriation by the State Legislature for the
21 balanced implementation of CALFED program expenditures and grants, including up to \$50 million
22 for surface water storage planning and feasibility studies.
- 23 • **Proposition 84. 2006 Safe Drinking Water Bond Act:** This proposition provided \$65 million to
24 DWR for planning and feasibility studies related to the existing and potential future needs for
25 California's water supply, conveyance, and flood control systems. The studies are to be designed to
26 promote integrated, multi-benefit approaches that maximize public benefits of the overall system
27 including protection of the public from floods, water supply reliability, water quality, and fish,
28 wildlife, and habitat protection and restoration.

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

- 31 • **Public Law 108-7. Consolidated Appropriations Resolution, Sec. 215, 2003 and Public**
32 **Law 108-137. Energy and Water Development Appropriations Act, Sec. 211, 2003:** These
33 legislations provided authorization and appropriations to the Secretary of the Interior to perform
34 CALFED-related activities, which could include feasibility studies for Sites Reservoir, Los Vaqueros
35 Reservoir Enlargement, and Upper San Joaquin River Basin Storage projects. These storage studies
36 were to be pursued along with ongoing environmental and other projects in a balanced manner.
- 37 • **Public Law 108-361. CALFED Bay-Delta Authorization Act (2004):** This legislation provided the
38 following authorizations:
 - 39 – Approval of the CALFED ROD as general framework for addressing the CALFED Bay-Delta
40 Program, including its components related to water storage, ecosystem restoration, water supply

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

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

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

13 The Sites Project Joint Powers Authority (JPA) was originally formed in August 2010 as a result of the
14 adoption of SB 7X 2 as part of the 2009 Comprehensive Water Package. SB 7X 2 provided authorization
15 for the formation of local joint powers authorities by irrigation districts and other local water districts and
16 local governments within the applicable hydrologic region to design, acquire, and construct water
17 infrastructure, ecosystem, and water supply reliability projects. SB 7X 2 also authorized sale of up to
18 \$11.14 billion in bonds to help fund those types of projects. The Sites JPA became a cost-share partner of
19 the Sites Reservoir/NODOS Project when it requested and received State funding in 2011 to support
20 development of this DEIR/EIS. The Sites JPA included the local water interests and counties.

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

26 1.4 CEQA and NEPA Requirements

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

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

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

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

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

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

35 The alternatives discussed in this DEIR/EIS have been evaluated on an equal non-preferential basis and at
36 an equal level of detail, according to NEPA standards. The Proposed Project/Preferred Alternative will be
37 identified in the FEIR/EIS, with that selection to be informed through the CEQA and NEPA processes.
38 Although a final Mitigation Monitoring Plan is not required to be included in a Draft EIR, a draft
39 Mitigation Monitoring Plan has been prepared and included in this DEIR/EIS as Appendix 1A, and is
40 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	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • Responsible for coordination with federally recognized tribes and protection of Indian Trust Assets • Coordinate compliance with <ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • Responsible for operational changes to existing hydroelectric facilities may necessitate a license amendment from FERC
National Oceanic and Atmospheric Administration, National Marine Fisheries Services	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> – Fish and Wildlife Coordination Act – Magnuson-Stevens Fishery Conservation and Management Act
United States Department of Agriculture, Natural Resources Conservation Service	<ul style="list-style-type: none"> • Determine compliance with the Farmland Protection Policy Act
United States Army Corps of Engineers	<ul style="list-style-type: none"> • Issue permits and approvals related to the following legislation and Executive Order: <ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • Americans with Disabilities Act compliance
United States Environmental Protection Agency	<ul style="list-style-type: none"> • Provide compliance with the following legislation through agreements with the State of California to implement these requirements through CalEPA: <ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • 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

PRELIMINARY – SUBJECT TO CHANGE

**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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> California Harbors and Navigation Code compliance
California Department of Conservation	<ul style="list-style-type: none"> Designate Important Farmland in the State under the Farmland Mapping and Monitoring Program
California Department of Fish and Wildlife	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Compliance with generation, transportation, treatment, storage, and disposal of hazardous waste regulations
California Department of Transportation	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Implement State energy policies
California Independent System Operator	<ul style="list-style-type: none"> Manage the flow of electricity across high-voltage, long-distance power transmission lines in most of California
California Office of Historic Preservation	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Issue leases for work in areas under CSLC jurisdiction (e.g., along Sacramento River)
California State Water Resources Control Board	<ul style="list-style-type: none"> Issue water rights Administer Clean Water Act for USEPA in coordination with CVRWQCB

PRELIMINARY – SUBJECT TO CHANGE

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

Jurisdiction	Responsibility
Central Valley Regional Water Quality Control Board	<ul style="list-style-type: none"> Clean Water Act Section 401 certification Clean Water Act Section 402 NPDES permitting (including requirements for construction SWPPP)
California Water Commission	<ul style="list-style-type: none"> Responsible for quantification of public benefits of water storage projects
Central Valley Flood Protection Board	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Planning Departments 	<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Engineering and Surveying Services Departments 	<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Environmental Health Services Departments 	<ul style="list-style-type: none"> Septic and water system permitting, including well installations
<ul style="list-style-type: none"> Roads Departments 	<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Fire Departments 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Administer local air quality plans and coordinate with the California Air Resources Board

PRELIMINARY – SUBJECT TO CHANGE

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

Jurisdiction	Responsibility
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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

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

4 **1.6 Notice of Preparation and Notice of Intent**

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

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

PRELIMINARY – SUBJECT TO CHANGE

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

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

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

8 **1.8 Proposed Project/Proposed Action Location**

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

12 **1.9 Study Areas**

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

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

28 **1.9.1 Extended Study Area**

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

1 1.9.2 Secondary Study Area

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

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

11 1.9.3 Primary Study Area

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

22 The SPA and Reclamation have developed five action alternatives (Alternatives A, B, C, C₁, and D which
23 are described in Chapter 2 Alternatives Analysis) to meet the purpose, need, and objectives of the
24 proposed Project. There are differences in the facilities associated with the five alternatives; therefore, the
25 Primary Study Areas for the five alternatives also differ. The Primary Study Areas associated with
26 Alternatives A, B, C, C₁, and D are shown on Figures 1-8A, 1-8B, 1-8C, 1-8C₁, and 1-8D, respectively.
27 Detailed descriptions of each proposed Project facility are provided in Chapter 3 Description of the
28 Proposed Project/Proposed Action and Alternatives.

29 1.10 Areas of Controversy/Issues to be Resolved

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

- 32 • **Impacts on Terrestrial Biological Resources:** Golden eagles have been identified as foraging within
33 the proposed Sites Reservoir Inundation Area and nesting within the proposed recreation areas.
34 USFWS has expressed concern about the potential loss of nesting and foraging habitat for golden
35 eagles, which are protected by the Bald and Golden Eagle Protection Act.
- 36 • **Impacts on Project Area Property Owners:** Project development would require the demolition of
37 existing structures, acquisition of private property, and relocation of displaced parties. These actions
38 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.

- 1 • **Chapter 3 Description of Proposed Project/Proposed Action and Alternatives:** This chapter
2 describes in detail the proposed Project facilities included in the action alternatives (Alternatives A,
3 B, C, C₁, and D), and describes Project operation for each of the action alternatives.
- 4 • **Chapter 4 Environmental Compliance and Permit Summary:** This chapter presents the regulatory
5 framework for the resources chapters (Chapters 6 through 31).
- 6 • **Chapter 5 Guide to Resources Analysis:** This chapter describes the process used to develop the
7 environmental setting (i.e., affected environment) and evaluate the environmental impacts
8 (i.e., environmental consequences) of implementing the alternatives, defines types of impacts and
9 levels of significance, describes mitigation measure development and eliminated topics, and
10 summarizes the modeling tools and analytical methods that were used for each resource analysis.
- 11 • **Chapters 6 through 31 Resource Chapter Evaluations:** These chapters include descriptions of the
12 environmental setting (i.e., affected environment), contain assessments of the potential impacts of
13 each of five alternatives within each of three study areas, and list mitigation measures for identified
14 significant and potentially significant impacts, where appropriate, for the following resources:
- 15 – Surface Water Resources
16 – Surface Water Quality
17 – Fluvial Geomorphology and Riparian Habitat
18 – Flood Control and Management
19 – Groundwater Resources
20 – Groundwater Quality
21 – Aquatic Biological Resources
22 – Botanical Resources
23 – Terrestrial Biological Resources
24 – Wetlands and Other Waters of the U.S.
25 – Geology, Minerals, Soils, and Paleontology
26 – Faults and Seismicity
27 – Cultural Resources
28 – Indian Trust Assets
29 – Land Use
30 – Recreation Resources
31 – Socioeconomics
32 – Environmental Justice
33 – Air Quality
34 – Climate Change and Greenhouse Gas Emissions
35 – Navigation, Transportation, and Traffic
36 – Noise
37 – Public Health and Environmental Hazards
38 – Public Services and Utilities
39 – Visual Resources
40 – Power Production and Energy
- 41 • **Chapter 32 Short-term Uses vs. Long-term Productivity:** This chapter describes the short-term
42 uses vs. long-term productivity of the proposed Project.

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

20 1.13 Preparers of the DEIR/EIS

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

31 1.14 References

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